Contract for Analytical Services Related to the Deepwater Horizon Disaster:

Estimation of lost indirect and passive use economic values to Floridians

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Final Report:

- Master Executive Summary
- Study 1: Lost Passive Use Value
- Study 2a: Lost Recreational Use Value
- Study 2b: Economic Impact of Cancelled Recreational Trips
- Appendices and Supplement

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Study 2b used the primary data collected for Study 2a, but the economic impact estimates were developed by the UF/IFAS Economic Impact Analysis Program, which is led by Dr. Hodges. In addition, Dr. Stevens, Post-Doctoral Associate, also contributed significantly to this report.

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1: Master Executive Summary

This contract required research to address two distinct goals relating to measuring the economic losses to Florida from natural resource damages caused by the *BP/Deepwater Horizon* (DWH) oil spill: (1) measure the lost passive use value (PUV) and (2) measure the lost recreational use value (RUV). Per the specifications in the contract, the PUV and RUV losses were to be estimated using the contingent valuation method (CVM) and travel cost method (TCM), respectively. In addition, discussions with the Office of Economic and Demographic Research (EDR) require the Food and Resource Economics Department (FRED) to provide assistance to the Revenue Estimating Conference (REC) in projecting the revenue losses to State Government associated with the lost RUV from (2). The project results were to be representative of the following affected coastal counties in Northwest Florida: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, Wakulla, Jefferson, Taylor, Dixie, and Levy (i.e., the study region). Two online questionnaires were developed from extensive pre-testing (numerous focus groups, a mall intercept, and formal online pre-tests) and the market area for the lost RUV study was determined (in part) from beach fly-overs and intercept surveys. All estimates were based on primary data collected from Internet surveys implemented by Knowledge Networks, Inc. (KN), which maintains a panel of respondents who constitute a representative probability-based sample of U.S. households, and information from the U.S. Census Bureau. All data used in the analyses were also weighted using pre-and post-stratification statistical weights calculated for each respondent by KN to improve the representativeness of the sample. All estimates were generated using standard and state-of-the-art techniques and conservative assumptions on key parameters. Validity analyses were conducted where applicable. All estimates were extrapolated using the number of households from the 2010 U.S. Census. Lastly, all protocols, questionnaires, and interim reports were developed by a well-qualified research team and reviewed by external experts. Each of the three separate studies is included as a standalone document in this final report and is summarized in turn below. Due to the distinct methodologies used to measure economic effects caused by the DWH oil spill, and from the simultaneous development of three separate reports by multiple and different team members, readers are cautioned about making comparisons among studies.

Lost PUV (Study 1)

Passive use values (PUVs) are also known as non-use values and represent the economic value (non-market value) that Florida residents have for a clean and restored Gulf of Mexico environment. The lost PUV estimate was generated using the CVM with primary data collected from a survey and an estimate of the population of Florida households from the U.S. Census. The primary data were collected in September 2011. The survey was used to gather information from a relatively large sample of 2,047 adult respondents living in Florida, including Spanish-speaking residents.

Following a series of focus groups that were held around the state, a questionnaire was developed that provided detailed background information on Gulf of Mexico wildlife, oil drilling, and the DWH oil spill in a neutral and balanced manner. The contingent valuation (CV) question proposed a national vote on a mitigation program to be administered by the U.S. Coast Guard that would significantly reduce the environmental damage from another large spill, should one occur. Environmental damages avoided were measured as 20%, 45%, 70%, or 90% reductions in the amount of oiled coastline and number of dead birds, sea turtles, and marine mammals (compared to the DWH oil spill) reported on April 20, 2011. A split sample approach was used whereby each respondent only evaluated one reduction (effectiveness) level. The program would be funded with a one-time mandatory federal income tax payment, which was randomly selected for each survey from eight values ranging from $10 to $385 based on a formal pre-test. Respondents voting “for” the program would be willing to pay the value they were randomly assigned; respondents voting “against” the program would be willing to pay less or $0. Respondents were also allowed to indicate that they were “not sure” how they would vote; these responses were re-coded as voting “against” the program. In addition, respondents who voted “for” the program but indicated in a subsequent question that they were somewhat or very unsure of their response were also recoded as voting against the program. These are two examples of conservative assumptions that were made in order to generate a defensible estimate of lost PUV since votes against the program lower the mean lost PUV estimate.

Several important assumptions were necessary to ensure the data were valid. First, those respondents who indicated that they were willing to pay for the program but were uncertain of their decision were treated as unwilling to pay. Second, data used in the analyses included protest responses. These were respondents who chose not to vote for the program for reasons other than the program was not worth the cost to them. Third, observations associated with respondents who did not believe another similar spill would happen, which was the basis for the contingent valuation question, were excluded. In addition, the data passed three tests of internal validity, including that program votes were sensitive to the cost they were being asked to pay and the level of environmental damages

that would be avoided, and that respondents (on average) believed the results of the study would be used. Using the non-parametric mean lost PUV estimate of $115.08 per Florida household, which was estimated to account for (eliminate) any use values associated with a clean Gulf environment, yielded an estimate of $854.0 million associated with the environmental damages to Floridians from the DWH oil spill.

Lost RUV (Study 2a)

Recreational use value (RUV) represents the value that Floridians have for enjoying a clean and restored Gulf of Mexico environment for saltwater-related recreation in Northwest Florida. RUV can also be referred to as an indirect use value as it relates to, for example, the non-market value that residents have for a day at the beach (a non-extractive, non-consumptive resource use). The estimation of lost (foregone) RUV began with a definition of the market area for coastal recreation in the study region (i.e., 12 coastal counties in Northwest Florida). Two secondary data sources were used: *VISIT FLORIDA*® and the Marine Recreational Fisheries Statistics Survey (MRFSS). Using data for 2007 – 2009 from both sources, a 13-state market area was defined. The market area includes the states of Georgia, Alabama, Tennessee, Louisiana, Texas, Missouri, Mississippi, Kentucky, Arkansas, Ohio, Indiana, Illinois, and Florida. This market area accounted for approximately 89 percent of domestic visitation to the study region and was confirmed by an independent stratified sampling of 2,540 beach visitors as part of this study.

Primary data were collected August – September 2011. The survey gathered information from 2,181 individuals on their visits to the Gulf of Mexico and South Atlantic coastal areas that involved saltwater-related recreation, including detailed information on their most recent trip to the study region (location, duration, quality and expenses, which are needed for the economic impact analysis that follows), past trips, planned future trips, and the number of trips cancelled due to the oil spill. The survey response rate also provided information on the proportion of the population that are considered as past or potential visitors to the study region; this share of "qualified" households is an important piece of information for generating a total estimate of lost RUV. As with the lost PUV survey, pre- and post-stratification weights were generated for each respondent by Knowledge Networks and used in the TCM analyses.

The estimation of lost RUV began with the estimation of a number of models including: (1) single-site demand functions for recreational trips to the Northwest Florida study region, (2) probability-based models of respondents' willingness-to-pay (WTP) higher trip costs to value trips pre-spill, and (3) multiple-site random utility models (RUM) to account for limited substitution possibilities following the spill. Each method was used to estimate the economic value associated with recreational trips. The primary variable in each model

was the travel costs between a visitor's home and the destination site, measured using distance and time (per mile travel costs and the opportunity costs of time and, in some models, the reported transportation and lodging costs), and a visitor-reported site quality variable. Each model was estimated with different groups of the sample data and explanatory variables, and each produced unique estimates of lost consumer surplus to Florida households, the measure of economic value upon which to assess lost RUV.

Prior to estimating the models, a statistical test indicated that the number of trips taken after the spill was lower than the number of trips reported before the spill in the study region. Two different revealed preference techniques were used to measure the lost RUV. First, the single-site TCM generated lost RUV to Florida households of $111 million; however, this method assumed that there was no change to the quality of substitute sites. Second, the multi-site TCM (or RUM) which accounts for the loss of substitute destinations produced an estimate of $643 million for the lost RUV associated with a Gulf coast closure of recreational sites. In total, 11 possible sites were modeled: 4 regional sites in Florida (Northwest Florida, Southwest Florida, Florida Keys, and the Florida Atlantic Coast) and the 7 other southeastern coastal states (Texas, Louisiana, Mississippi, Alabama, Georgia, South Carolina, and North Carolina). The value of a trip to a given site (i.e., economic loss per cancelled trip) is shown to increase with the number of alternative sites that were closed.

Economic Impacts from Cancelled Recreational Trips (Study 2b)

The regional economic impacts associated with the cancelled recreational trips were estimated using the *Impact Analysis for Planning* (IMPLAN) software. IMPLAN uses national and regional economic data to measure the "ripple effect" on a regional economy that is caused by a change in spending by non-residents. The total economic impact from a change in spending by non-residents of the study region (*direct effect*) includes the secondary effects of economic activity lost from reduced purchases of intermediate products through the industry supply chain (*indirect effects*) and activity lost from reduced employee household and government spending (*induced effects*). Economic multipliers are used to capture the distinct secondary effects on the regional economy by accounting for the "leakage," or the degree to which demand for goods and services in the region is met by businesses that import from other regions.

The *IMPLAN* analysis used three basic types of information: (1) itemized expenditures of visitors' most recent trip involving saltwater-related recreation to the study region; (2) information on cancelled trips to the study region that were not replaced both before and after the time of the survey; and (3) and the aforementioned estimate of the number of households residing outside the study region whose saltwater-related recreational trips to

the study region were affected by the oil spill (i.e., qualified households, or households considered to be past or potential visitors to the study region).

Of the 2,083 qualified households that were surveyed in the 13-state market area (including Florida but exclusive of residents in the study region), 10.1 percent and 3.6 percent reported cancelling a past or future trip, respectively, to study region (i.e., 12 coastal counties in Northwest Florida) because of the oil spill. An estimated total of 1.88 million visitor trips to the study region were cancelled because of the oil spill between June 1, 2010 and potentially through September 24, 2012 (up to approximately 28 months, including trips that were planned up to one year from the date that the last respondent completed the survey). Respondents also reported cancelling an additional 2.28 million trips to other coastal areas of Florida, although the impacts of these cancellations were not further evaluated in this report.

Survey respondents who had visited the study region in the past two years were asked to report expenditures on their most recent trip to the study region in 13 categories (transportation, lodging, dining, shopping, etc.), and to indicate the share of their expenses in each category that was spent in the study region. The weighted average total trip expenditure for typical trips was $1,237 per household (from households outside the study region), of which $693 was spent within the study region. Extrapolating this to the number of qualified households in the market area (exclusive of households in the study region), total visitor spending in the region was estimated to have fallen by $1.30 billion due to cancelled trips over the period studied (up to 28 months). Regional economic impacts of this reduction in visitor spending, including regional multiplier effects estimated with the *IMPLAN* economic modeling system, amounted to a reduction of $2.04 billion in output (industry revenues), an employment loss of 20,486 job-years, and $1.37 billion in decreased value added. For comparison, the total value added impacts for cancelled past trips, which covered an approximately 12-month period, represented 2.8 percent of the Gross Regional Product (GRP) of the study region in 2010. These are conservative estimates of the economic impact to Northwest Florida as they excluded all cancelled trips from visitors outside the 13-state market area, including international visitors.

Summary of Estimated Economic Losses

A summary of the analyses conducted to estimate the economic losses to Florida resulting from the *BP/Deepwater Horizon* oil spill for each study—Study 1 (Lost PUV), Study 2a (Lost RUV) and Study 2b (Economic Impact)—is presented in Figure MS-1. The flow chart depicts both the analyses used to derive the recommended estimates of losses to Florida and the supporting analyses conducted to show validity. The recommended estimates of economic losses generated from each study are summarized in Figure MS-2.

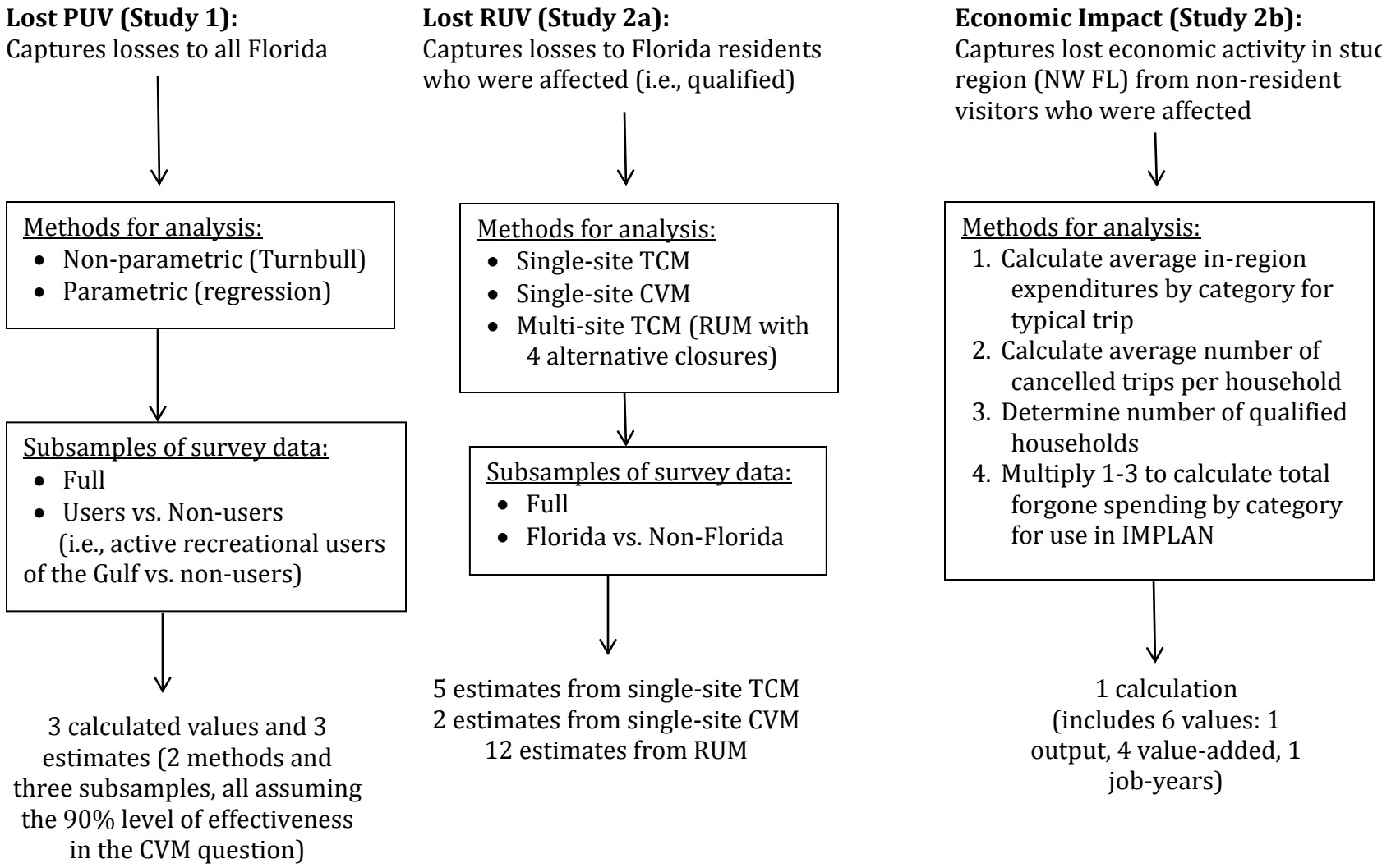

Figure MS-1. Summary of analyses conducted for Study 1, Study 2a and Study 2b including validity analyses but excluding the tax impacts associated with Study 2b

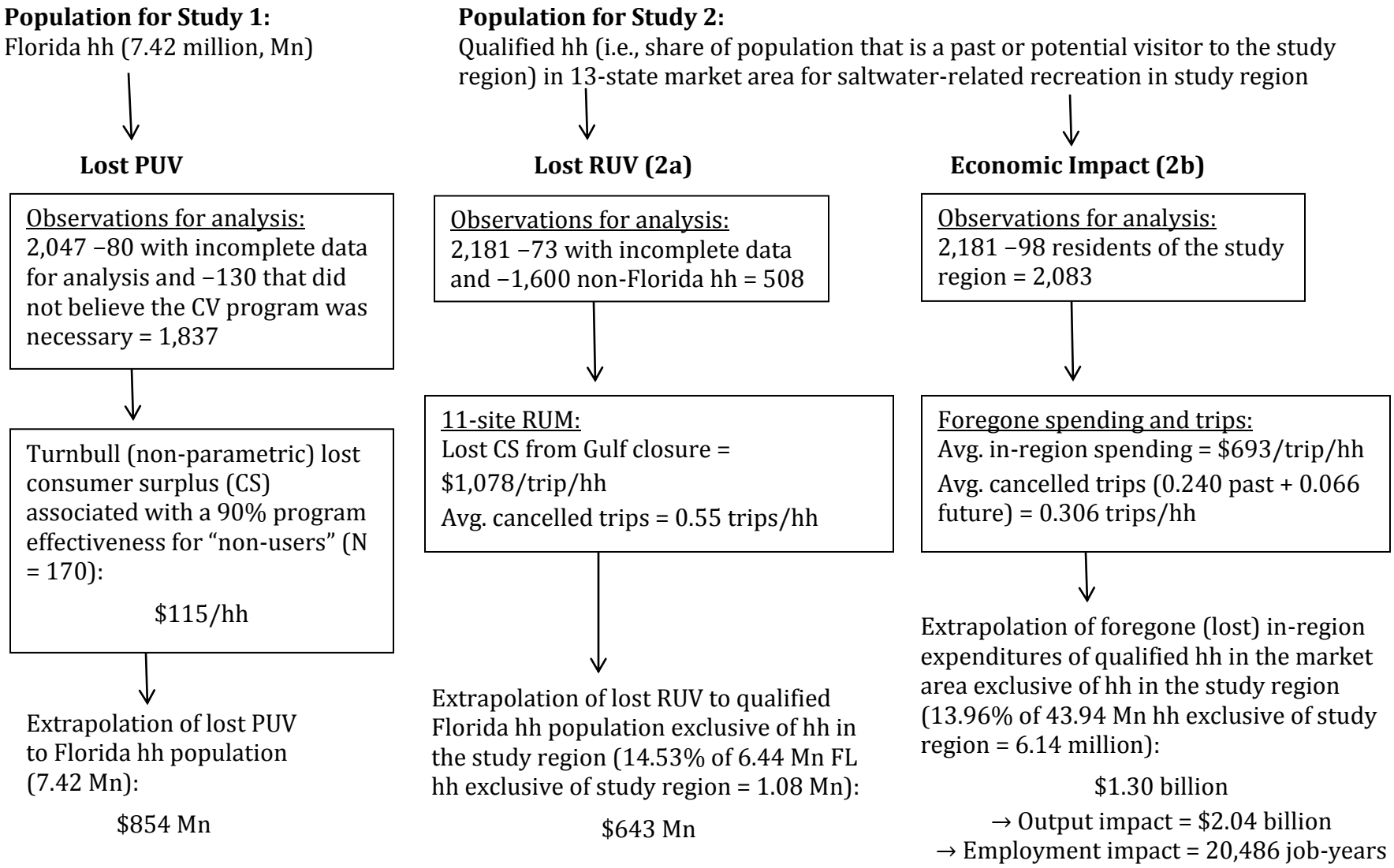

Figure MS-2. Summary of recommended analyses for estimating lost PUV and lost RUV to Florida households (hh), and economic impacts to the study region from trips cancelled by non-residents (excluding validity analyses and tax impacts)

The lost passive use value (PUV), which is estimated as the lost "consumer surplus" as measured by economists, to non-user Florida residents from the environmental effects of the DWH oil spill totaled $854.0 million. This estimate is conservative due to the stringent definition of whether a respondent's value was positive and that protest responses were not deleted.

The foregone recreational use value (RUV) derived using the RUM methodology to account for the loss of substitute destinations for saltwater-related recreation to the study region (i.e., 12 coastal counties in Northwest Florida) produced an estimate of $643 million for a Gulf closure of recreational sites. This is also an estimate of lost consumer surplus, but it represents losses to only those Florida households who were past visitors to the study region, or that cancelled their only planned recreational trip(s) to the Gulf Coast due to the oil spill. It does not account for lost future trips or values lost by Florida residents who do not visit the study region.

The previous two analyses both provided estimates of lost non-market economic values to Florida residents and, as such, are additive and total $1.5 billion. In addition, the local economies and the State of Florida are also affected by reduced visitor spending associated with the cancelled recreational trips previously modeled. Total visitor spending in the study region was estimated to have fallen by $1.30 billion due to cancelled trips over the period studied (up to 28 months). Regional economic impacts of this reduction in visitor spending, including regional multiplier effects estimated with the IMPLAN economic modeling system, amounted to a reduction of $2.04 billion in output, an employment loss of 20,486 job-years, and $1.37 billion in decreased value added contribution to GRP. The impact on taxes will be further discussed and refined through ongoing collaboration with staff in the Office of Economic and Demographic Research. These estimates are conservative due to the same assumptions used for the foregone RUV.

The notable strengths of the analyses in generating credible and conservative estimates include (1) the participation of a large and experienced research team during all phases of study design, questionnaire development, and the preparation and review of draft reports; (2) extensive primary data collection efforts, including a beach intercept survey and use of Knowledge Networks to obtain a large probability-based sample and unique weights for each respondent based on both pre- and post-stratifications; (3) the relative speed of implementation following the spill to minimize recall bias on trip information; and (4) the adoption of a research protocol that emphasized the use of conservative assumptions where possible.

2: Study 1 (Lost Passive Use Value)

John B. Loomis, Andrew Ropicki, Sherry L. Larkin, John C. Whitehead, and Timothy C. Haab

Executive Summary

Overview

This study contains an estimation of the lost passive use value (PUV) to Florida households from the *BP/Deepwater Horizon* oil spill in the Gulf of Mexico that began April 20, 2010. The estimate was generated using the contingent valuation method (CVM) with primary data collected from a survey, and an estimate of the population of Florida households from the U.S. Census. The primary data were collected in September 2011 with an Internet survey conducted by Knowledge Networks, Inc. The survey was used to gather information from a relatively large sample of 2,047 adult respondents living in Florida, including Spanish-speaking residents, and is representative of the adult population in Florida due to the use of pre- and post-stratification weights calculated for each respondent by Knowledge Networks, Inc. (Appendix A contains further details on Knowledge Networks).

The estimation of lost passive use value on a per-household basis is the primary task involved in the generation of a state-level estimate of lost PUVs. Passive use value is a "non-market value" that includes the benefits households receive from knowing that the pre-spill level of marine resources (e.g., marine mammals, sea turtles, birds, habitats, etc.) exist in a pre-spill natural environment; this is known as existence value. Passive use value also includes the benefits households receive from knowing that others in the current generation and future generations will be able to benefit from the existence of the pre-spill conditions (i.e., altruistic and bequest values, respectively). Since passive use values (PUVs) are non-market values they need to be measured using a non-market valuation technique. Stated Preference (SP) techniques in particular are the only type that can measure existence values. The contingent valuation method (CVM), a specific SP technique, has been the preferred approach for estimating lost (or reduced) PUVs resulting from oil spills and it is the method used in this study. The use of the CVM to value the PUV losses associated with oil spills began with the *Exxon Valdez* and that application also helped to establish the use of CVM as a credible tool to estimate this type of compensable loss.

The CVM methodology is described in the next section and followed by a summary of how it was implemented in this study. Key assumptions and tasks from the analysis (such as

tests of internal validity on the data) are then summarized with the empirical results. The Executive Summary ends with a conclusion that reiterates the final estimate of lost PUV on a per household and statewide basis, and includes reasons why the PUV estimate is conservative.

Description of the Contingent Valuation Methodology (CVM)

The contingent valuation method quantifies a respondent's preferences for an improved environmental quality in monetary terms. Since this method relies on survey responses it is known as a "stated preference" technique, which is the only type of technique that can be used to estimate passive use values associated with a change in environmental quality. The strength of the CVM is based on the fact that the investigators control the development of a hypothetical scenario (good or service) that can improve or restore environmental quality. The primary criticism of this approach is precisely that the scenario is hypothetical; investigators must convince respondents that the project is both plausible and possible in order to obtain an unbiased estimate of their value for the program.

The CVM mimics a real situation by presenting consumers (or households) with a hypothetical situation in which they have the chance to buy changes to a public good. Oftentimes, and in this study, the situation is presented to the respondents in the form of a referendum where they are asked to vote for or against a program that would protect or restore an environmental good at a specified cost to them. A hypothetical referendum provides a valuation situation that respondents are accustomed to for a variety of public goods (e.g., funding for schools, parks, land preservation, etc.). If the survey presented different respondents with different proposed costs to them, the resulting data can be used to both estimate the populations' likelihood (probability) of voting for the program at different costs and the corresponding average cost. This latter result, which is typically referred to as the "willingness-to-pay" (WTP) estimate, is a measure of economic value that is used for all goods (market and non-market) and is known as "consumer surplus."

Given that the CVM is a stated preference approach that uses data obtained from respondents' evaluation of a hypothetical program, its use to estimate compensable losses following oil spills has not been without controversy. Fortunately, this past criticism of the approach has resulted in a substantial amount of literature and guidance that collectively serve to provide a set of best management practices. The primary source of this information is the original Blue Ribbon panel report commissioned in 1992 by the National Oceanographic and Atmospheric Administration (NOAA). This panel was chaired by two Nobel laureates in economics and was charged with assessing the reliability of using the CVM to measure total lost non-market value (including passive use value) under the Oil Pollution Act of 1990. The panel provided a variety of suggestions on how to increase the

reliability of CVM-based estimates of WTP, which were followed in this study, and concluded "that CV [contingent valuation] can produce estimates reliable enough to be the starting point of a judicial process of damage assessment, including lost passive-use values" (Arrow et al., 1993). Throughout this study we follow standard convention and refer to the estimates of lost passive use values, which are estimates of lost consumer surplus, as respondents' "WTP."

Application of the CVM

In this study respondents were asked whether they would vote for a program that would prevent damages from a similar spill if it cost them a specified amount of money. The detailed description of this hypothetical program included four different levels of how effective it would be in reducing the environmental damages associated with another similar oil spill. Each household was asked to vote based on one effectiveness level (using a split sample approach) and a one-time payment assessed on their next federal income tax where the payment was randomly selected from eight values ranging from $10 to $385. Respondents could vote for or against the program or indicate that they were not sure (in addition to refusing to answer). A vote for the program means the respondent is willing to pay the cost that was randomly assigned to them. A follow-up question obtained reasons for their response. Those voting for the program were asked how sure they were about their response. Those voting against the program were asked if they would be willing to pay a lower amount.

In order to generate conservative estimates—and thereby more credible estimates—of lost passive use values, votes for the program were only counted for those respondents who both indicated that they would vote for the proposed program and were either somewhat or very sure of their vote. Respondents who indicated that they would vote for the program but were less certain of their response, or did not indicate their certainty, were recoded as voting against the program. This recoding has been shown in cash experiments to produce a closer match between WTP estimates derived from CV questions and estimates derived from respondents who made actual cash payments. Respondents who were willing to pay a lower amount were simply considered as not willing to pay the cost they were asked to vote on. Observations associated with protest responses were retained, but observations on respondents who did not believe the program was necessary were deleted. The former case applies to respondents that may have valued the program, but disliked the idea of paying higher taxes or wanted the oil companies to pay everything. The latter case applies to individuals who did not believe there would be another spill or who believed that changes were already implemented that would prevent any damage from another spill.

In addition to using a large sample size to improve the reliability of the results, we conducted three internal tests of validity on the CVM results. The first was to determine whether, as the dollar amount households were asked to pay increased, their likelihood of voting for the program declined. We found this inverse relationship, which indicates respondents were treating this good as they would any other good or service. The second was to test for "scope" effects, which simply means testing that respondents' likelihood of voting for the program increased with the proposed level of protection (i.e., damages avoided). We found this direct relationship, which suggests that "perfect embedding" (i.e., respondents could not distinguish differences between the various effectiveness levels) was not exhibited by most respondents. The third test examined respondents' opinion about the potential impact of the survey. We found that the majority of respondents believed that the survey results "will affect decisions about oil monitoring and cleanup by the U.S. Coast Guard in the Gulf of Mexico," which suggests that the consequentiality of the program affected respondents' value of the program. Thus, we have substantial evidence that our results have internal validity.

With the data obtained from the survey, two distinct techniques were used to generate an estimate of the lost consumer surplus reflecting the lost passive use values: (1) the Turnbull method, a non-parametric method that produces an estimate of the mean WTP, and (2) multivariate analysis, a parametric approach that produces an estimate of the median WTP. Both approaches provide an estimate of the lost passive use value (consumer surplus) that is representative of the non-use value that each Florida household lost as measured by their willingness to vote for a program that was perceived to be 90 percent effective at mitigating the environmental losses associated with a spill similar to the *BP/Deepwater Horizon* oil spill. The use of a 90 percent reduction in damages as perceived by the respondents should a similar spill occur is designed to obtain an estimate of damages that most closely match that experienced from the *BP/Deepwater Horizon* oil spill. Ideally, we would be measuring an effectiveness level of 100 percent, but that scenario was not realistic to respondents and thus could not be estimated. In addition, both approaches examine the effect of distinguishing between users and non-users of the resource; recall that PUV is to reflect passive use (non-use) values only; as such, it was prudent to identify respondents that indicated they had visited the Gulf of Mexico for saltwater-related recreation at least once in the previous year.

The second and final step in estimating lost passive use values experienced by Florida households is the extrapolation of the survey results (i.e., estimated lost consumer surplus on a per household basis) to the population of Florida households. This is accomplished by multiplying the lost consumer surplus measure by the number of Florida households from the most recent U.S. Census. The resulting economic theory-based estimate of lost passive use values is valid for use in the claiming process against parties responsible for the

BP/Deepwater Horizon oil spill but do not constitute a comprehensive estimate of losses to Floridians or the State of Florida due to the methodology employed.

Summary of Application and Results

- A questionnaire was developed that employed the non-market valuation method known as contingent valuation following recommendations from the NOAA Blue Ribbon panel report and several follow-up studies that have estimated lost non-market values to citizens from oil spills. The survey instrument used state-of-the-art design methods, including both consequentiality and cheap talk scripts (Appendix B).
- The questionnaire contained a referendum contingent valuation question with a "not sure" option and a surety of response follow-up to account for respondent uncertainty. The survey instrument provided detailed background information on Gulf of Mexico wildlife, oil drilling, and the *BP/Deepwater Horizon* oil spill in a neutral and balanced manner (e.g., BP is never mentioned, reported counts of dead animals are qualified by stating that they could have died by other causes, and it is noted that some animals were able to avoid contact with oil). The contingent valuation question proposed a vote on a mitigation program to be administered by the U.S. Coast Guard that would significantly reduce the environmental damage from another large spill, should one occur. Environmental damage was measured as 20%, 45%, 70%, or 90% reductions in the amount of oiled coastline and number of dead birds, sea turtles, and marine mammals. A split sample approach was used whereby each respondent only evaluated one reduction (effectiveness) level. The program would be funded with a one-time mandatory federal income tax payment, which was randomly selected for each survey from eight values ranging from $10 to $385.
- Using primary data collected from 2,047 adult Florida residents and weighted by pre- and post-stratification weights created specifically for each respondent by Knowledge Networks, two conservative estimates of lost passive use value due to the *BP/Deepwater Horizon* oil spill were generated and then extrapolated to the population of Florida households. Several important assumptions were necessary to ensure the data used in the estimation of lost non-market values were valid. First, those respondents who indicated that they were willing to pay for the program but were uncertain of their decision were treated as unwilling to pay. Second, data used in the analyses included protest responses. These were respondents who chose not to vote for the program for reasons other than the program was not worth the cost. Some of the more common protest responses received were "the oil companies should pay for the entire program" and "the federal government is not capable of implementing the mitigation program efficiently and/or effectively". Third, observations associated with respondents who did not believe another similar spill would happen, which was the basis for the contingent valuation question, were excluded. Lastly, in all WTP

calculations (i.e., estimates of lost passive use at the household level), the same underlying data are used (e.g., observations deleted for missing values on variables included in the parametric analysis are also deleted for the non-parametric analyses).

- The data passed three tests of internal validity, namely that respondents' likelihood of being willing to pay for the program (1) declined as the average cost of the program increased (bid sensitivity) and (2) increased with the perceived effectiveness of the program as measured by expected reductions in environmental damages (scope sensitivity), and that (3) the majority of respondents believed the survey would affect decisions about oil monitoring and clean up in the Gulf of Mexico (consequentiality).
- The estimate of lost passive use value (PUV) on a per household basis was calculated using two approaches: the non-parametric Turnbull and parametric multivariate analyses. In addition, to better isolate PUV (non-use values) from use values, the WTP estimates were re-calculated for visitors and non-visitors (i.e., households not visiting coastal areas in the Gulf of Mexico for saltwater-related recreation in the past 12 months). All estimates reflect the value associated with a 90 percent reduction in potential losses from another similar oil spill.
- Despite the inclusion of parametric WTP estimates for comparison, the most appropriate approach to use for the purpose of this study is the non-parametric Turnbull, which is referred to as the "lower bound mean" method. Non-parametric methods are preferred since they typically generate the lowest estimate given comparable data, generate estimates that have smaller confidence intervals, and are less sensitive to a myriad of assumptions that are required to generate parametric estimates.
- The Turnbull mean estimate of WTP for non-visitors was $115.08, with a standard error of $10.31. The 95 percent confidence interval on the estimate was $94.87 to $135.29. The passive use losses are calculated by multiplying the number of households in the State of Florida, 7.42 million per the 2010 U.S. Census, by the household level WTP estimate of non-visitors using the Turnbull lower bound method. As a result, passive use value (PUV) losses to the State of Florida due to the *BP/Deepwater Horizon* oil spill totaled $854.0 million, with a 95 percent confidence interval ranging from $704.0 million to $1.0 billion.

Conclusions

Our non-parametric mean willingness-to-pay (WTP) estimate of $115.08 per Florida household yields an estimate of environmental damages of $854.0 million and represents Floridian passive use values lost due to the *BP/Deepwater Horizon* oil spill. This estimate is higher than in previous studies of other spills, which is expected given the study focused only on Floridians (those living closer to the spill) and the volume of spilled oil, including that it was a subsurface spill. This estimate is, however, conservative for many reasons,

including that (1) the estimate reflects reduced damages and not prevented damages because focus group participants questioned whether a government prevention program could be 100 percent effective, thus, we used a 90 percent perceived effectiveness from the proposed mitigation program versus the ideal of 100 percent; (2) initial "not sure" responses to the contingent valuation (CV) referendum question and those who voted "for" the program but then indicated they were "neither unsure or sure," "somewhat unsure," or "very unsure" of their willingness to vote for the program and pay the indicated amount were recoded as voting against the program; (3) "against" responses to the referendum question due to protest responses were not dropped from the sample as is sometimes done in CVM analysis; (4) the lack of trust in government indicated by some respondents was not addressed, meaning that these respondents' WTP may have undervalued their true WTP for a clean Gulf environment since they may have voted against the program due to a perceived inability of the government to effectively manage the program and not because they did not value the program described in the CV question; and (5) total losses were computed at the household level, but the number of individuals that lost PUV is likely higher than the number of households. Any modifications of these assumptions would produce a higher estimate of lost PUV than the one summarized here.

Introduction to Lost Passive Use Value Report

This report is part of a research project undertaken by the University of Florida, Food and Resource Economics Department to estimate economic losses to the State of Florida resulting from the *BP/Deepwater Horizon* oil spill in the Gulf of Mexico that began on April 20, 2010. Reports from the National Incident Command indicate that 4.9 million barrels of oil were spilled into the Gulf of Mexico over approximately three months, which is over 19 times the amount of oil spilled by the *Exxon Valdez* in Alaska in 1989, making it the worst oil spill in U.S. history.

The Gulf of Mexico is a complex ecosystem. Near-shore estuaries and coastal habitats provide a suite of services that society uses and values directly and indirectly, such as for fisheries, tourism, water management, and amenities to coastal property owners. However, part of the value to Florida residents may be the value of offshore natural areas and wildlife. This value lies primarily with the unseen non-use value that society may hold for knowing that these areas and wildlife exist in a healthy state in perpetuity. The non-use value is also known as "passive use" value since the value may stem from use by others, either current or future generations, but not for any current or planned use (in the literal sense) by the individual. As such, all Florida residents can have passive use values for a healthy Gulf marine environment and all the direct and indirect services it can provide to nature and society. In economic terms, passive use values include three distinct components: (1) the existence value of the resource without the intent to visit, (2) the bequest value of the resource for use by future generations (inter-generational equity), and (3) the altruist value of the resource for use by current generations (intra-generational equity). There is a fourth measure that is considered both use and non-use and that is option value, the value an individual may have for future, personal use of the resource.

To date, no official claims for damages have been filed on behalf of the State of Florida although a few advance-funding requests have been made. Once the claims process begins, there are several types of damages for which the state can seek compensation. Based on a legal precedent established in 1989, and discussed further in the following section, compensable losses are categorized into three groupings based on the availability of market prices to measure the losses: direct (e.g., losses to local business); indirect (e.g., losses in ecosystem services); and passive use (e.g., losses to individuals who value a clean environment for use by others, or by future generations, or the value of knowing that certain Gulf-dependent species continue to exist).

This report contains estimated past losses in the third category, passive use losses experienced by Florida residents from a degraded Gulf of Mexico marine environment. The approach used to estimate these losses is known as a "stated preference" approach; that is,

respondents state how much they would pay as a measure of how strong their preferences are for a restored or improved Gulf marine environment. Asking respondents in a survey format about their preferences is necessary since the passive use losses do not reveal themselves in (so cannot be extracted from) observable market data. Specifically, we use the *contingent valuation method* (CVM).

This report begins with some background information on contingent valuation, including a basic description of the underlying economic methodology and how it has been used to value oil spills. The section ends with a summary of basic guidelines for the development of a questionnaire and guidelines based on more recent literature that are needed to collect primary data for generating defensible estimates of lost passive use values. The following section describes the development of the questionnaire, from implementation of multiple focus groups and one mall intercept survey through a detailed description of each section of the final questionnaire. This description identifies how we tried to address several types of biases that are characteristic of using the contingent valuation method in the survey. Information on how the survey was implemented and pre-tested follows, including a summary of the data collected. The empirical results are discussed in the final section and include the validity analysis, willingness-to-pay (WTP) estimates (i.e., estimates of lost consumer surplus at the household level), and total passive use value estimated to have been lost by Floridians due to the *BP/Deepwater Horizon* oil spill.

Background on the Contingent Valuation Approach

Basic Description

Contingent valuation (CV) is a survey-based method designed to measure individuals' willingness to pay (WTP) for, or willingness to accept (WTA) changes in, the quality or quantity of a non-market good or service (Hanemann, 1999). The CVM quantifies this WTP or WTA measure in monetary terms to provide a valuation of the project or event that would cause the change in quality or quantity and associated consumer surplus. Since the CVM relies on survey responses, it is known as a "stated preference" technique, as opposed to "revealed preference" techniques that rely on observed behavior that is captured in market data. Although revealed preference data are preferred in economic studies since valuations are based on observed behavior, many goods are non-market in nature and, as such, cannot be valued using revealed preference techniques. The strength of the CVM is in its ability to value hypothetical goods—much like market research on new products—including non-market goods such as environmental quality. Passive use value, also known as non-use value, is measured as the WTP for the improvement or preservation of an environmental good which the individual does not use, or plan to use, directly (Haab and

McConnell, 2002). Although those valuing these goods do not use these items in a traditional sense they do place a value on the items' existence and their ability to be used by others or saved for future generations.

The CVM mimics a market for goods that generate environmental-based passive use values (PUVs) by presenting consumers with a hypothetical choice situation in which they buy changes to the good. Oftentimes this scenario is presented to respondents in the form of a referendum where they are asked to vote for or against a proposed project that provides the environmental good. This is done to create a valuation situation which respondents are more accustomed to since respondents will likely have past experiences with voting to decide such issues, especially at the local level. CV is often used to value goods and services generated by the environment since it is the only non-market valuation technique that can value a proposed change in environmental quality (Mitchell and Carson, 1989).

Development and Historic Use

The development of the CVM dates back to the 1940s. Ciriacy-Wantrup (1947) first outlined the possible use of surveys to determine WTP and WTA values for "extra-market" goods. The paper outlined the general theoretical approach (although he did not use the term "contingent valuation") but did not address the survey instrument needed to collect the data. Davis (1963a, 1963b) was the first to actually implement a survey that attempted to simulate a market for an environmental good. Davis surveyed hunters and recreationalists in Maine in an attempt to value a particular recreational area in the state. Randall, Ives, and Eastman (1974) authored one of the seminal works in the field of contingent valuation with their study on the benefits of abating aesthetic environmental damage in the Four Corners region of the Southwest United States. The paper was one of the first to value a good, visibility, that could not be valued using revealed preference methods. In the subsequent years, CVM use has become widespread in the economics profession, with numerous advances in both survey design and parametric analysis of WTP and WTA measures.

The use of CV as a tool for natural resource damage assessment was spurred by two major events. First, the 1989 U.S. Appellate Court opinion, *Ohio v. Department of Interior*, stated that (1) passive use losses were compensable under the Clean Water Act and the Comprehensive, Environmental Response, Compensation and Liability Act (CERCLA) and (2) the Department of Interior's ranking of damage assessment techniques, which had CV at the bottom, was unjustified (Carson, 2000). Second, the passage of the Oil Pollution Act of 1990 led to regulations enacted by the National Oceanic and Atmospheric Administration (NOAA) which stated: "NOAA believes that the trustee(s) should have the discretion to include passive use values as a component within the natural resource

damage assessment determination of compensable values" (Carson et al., 2003). These events, along with the increased use of stated preference methods to evaluate public policy options, led to the need to standardize and improve the CVM. As a result, NOAA convened a panel of experts—including two Nobel Prize winners in economics—to evaluate the CVM with regards to its ability to accurately value non-market goods. The panel concluded that the CVM can produce reliable estimates of passive use values for the purpose of natural resource damage assessments (Carson, 2000). The panel proposed several basic guidelines on the effective use of CVM in valuing non-market goods and PUVs from environmental goods in particular, which have since become common practice.

Application to Oil Spills

Alaska (ex-post)

The CVM was first applied to measure the lost passive use values from an oil spill in the United States on the 1989 *Exxon Valdez* oil spill in Prince William Sound, Alaska, where 11 million gallons of oil were spilled in the Sound. The study, which was funded by the State of Alaska, used a CV survey of Americans to determine their WTP to avoid another similar oil spill in Prince William Sound.[1] The surveys were conducted as face-to-face interviews. The researchers randomly selected 1,600 dwelling units to contact and arrange interviews with residents (households). After discarding vacant dwelling units and units housing non-English speakers, the researchers collected responses from approximately 75 percent of the remaining households.

Respondents were asked whether they would vote for a one-time federal tax payment to fund a program that would maintain two ships that would flank and escort oil tankers travelling through Prince William Sound. These ships would ensure that the tankers would not run aground. Their research found a parametric estimate of median household WTP of $31 for a total estimated loss of $2.8 billion dollars (Carson et al., 1992). The parametric estimate resulted from assuming a Weibull distribution and was calculated using maximum likelihood. The research team re-evaluated their findings in an academic paper roughly a decade later using newly developed estimation techniques and revised their estimate to a range from $4.8 billion to $7.2 billion (Carson et al., 2003).

[1] Determining the WTP to avoid an identical spill is the recommended approach to estimating lost PUV associated with a degraded environment following an oil spill. These studies also focus on isolating PUV (non-market values) from use values.

California (ex-ante)

In 1995, the lead researcher on the *Exxon Valdez* CV study and a group of additional researchers used the CVM to calculate passive use losses associated with a hypothetical spill on California's Central Coast (Carson et al., 1995). The researchers designed and implemented a questionnaire that used the CV best practices at the time. Respondents were asked to vote on a government program to prevent, over the course of a decade, environmental damages to California's Central Coast as the result of an oil spill. Funds would be raised from a one-time income tax surcharge on California households. The study used a non-parametric approach (Turnbull method) and reported a mean WTP for the program of $76.

Carson and his team meticulously outlined their survey design, pre-testing, and implementation process, as well as their analysis of both survey question responses and WTP calculations in a book published in 2004 (Carson et al., 2004). The book included the research team's response to an industry-funded critique of their original work on the subject from 1995. The goal of the study was to provide a CV framework for future studies related to oil spills.

Spain (ex-post)

In 2002, the *Prestige* oil tanker suffered an accident and sank off the coast of Spain, spilling more than 60,000 metric tonnes (mt) of heavy low-quality oil and polluting more than 1,300 Kilometers (km) of coastline. Researchers conducted a CV survey in 2006 to estimate the passive use values and non-market use losses caused by the *Prestige* oil spill; the resulting welfare estimates (lost consumer surplus estimates) were intended for use by the Spanish government for obtaining compensation (Loureiro, Loomis, and Vazquez, 2009). The questionnaire closely followed that developed for the *Exxon Valdez* study and incorporated two major advances: use of cheap talk script (whereby respondents are reminded of their income constraints and asked to consider this seriously) and a certainty scale (whereby respondents indicated, after their vote, how certain they were of their response). Like the *Exxon Valdez* study, damages from the spill were valued by estimating the WTP to avoid another similar spill. The program also involved the use of escort ships that could also provide rapid response in the case of a spill. A referendum format was used with yes/no/don't know response options. The study used both parametric and non-parametric techniques to generate WTP estimates of 40.51 € and 58.08 € per household ($53.18 – $76.24 in 2011 US$), respectively, which are similar to what was estimated for the *Exxon Valdez* study. One important difference is that this study did not exclude households in the area affected by the oil as was done with the *Exxon Valdez* study.

Guidelines for Application

The 1989 U.S. Appellate Court opinion, *Ohio v. Department of Interior*, and the NOAA regulations enacted under the Oil Pollution Act of 1990 qualified the use of the CVM in determining legal liability in natural resource damage assessment cases. As a result of these judicial and legislative findings, the NOAA convened a panel of experts—including two Nobel Prize winners in economics—to evaluate the CVM with regards to its ability to accurately value non-market goods. The panel concluded, in a 1993 report, that the CVM can produce reliable estimates of passive use values for the purpose of natural resource damage assessments (Arrow et al., 1993). The panel included in its report the following basic guidelines on creating the ideal CV survey instrument:

1) Conservative design: A conservative design increases the reliability of the estimate by eliminating extreme responses that can enlarge estimated values.
2) WTP as opposed to WTA: The WTP format should be used instead of WTA because of concern that respondents would give unrealistically high answers to the latter.
3) Referendum format: The referendum format should be used instead of the open-ended question format. Given a realistic dichotomous question, respondents will have little incentive to lie.
4) Accurate description of the program or policy: Respondents must be provided with accurate information about the environmental program.
5) Pretesting of photographs: Effects of photographs on respondents can be explored by realizing a photograph may have a greater impact than the rest of the questionnaire.
6) Adequate time lapse from the accident: The survey should be conducted at a time distant from the date of the damage so respondents regard the recovery as plausible.
7) "No-answer" option: In addition to the yes and no options on the referendum, a “no answer” option should be allowed. Respondents who choose the “no answer” option should also be allowed to explain, such as they are indifferent to the situation, they cannot make a decision at the moment, or they are bored by the survey.
8) Yes/no follow-ups: Respondents should be asked the reason for the “yes” or “no” answer. Answers should show whether they think the program is (or is not) worth it, they do not know, or they think it is someone else’s duty to pay.
9) Cross-tabulations: A series of other questions that may help interpret the valuation question should be included in the survey, such as income; prior knowledge of the site; visitation rates; attitudes toward the environment, government, and business; distance to the site; and belief in the scenarios.
10) Checks on understanding and acceptance: The questionnaire should attempt to determine to what degree respondents accepted as true the descriptions and scenario given prior to the valuation question.

The NOAA panel guidelines were initially met with mixed reviews. While some researchers found the guidelines to be beneficial in empirical studies, others found the guidelines to be too restrictive and impractical to implement. Carson et al. (1996) looked at some of the first CV surveys completed that attempted to strictly follow the NOAA panel guidelines and found most, but not all, of the NOAA panel recommendations to be beneficial in CV survey development. On the other end of the spectrum, Harrison (2002) found the NOAA panel's guidelines to be "lacking in logic and empirical foundation" and recommended that they be ignored completely in CV survey development.

We followed the original NOAA panel guidelines where possible (noting the review by Carson et al., 1996) and updates some for progress in the state-of-the-art of CVM since the NOAA guidelines were issued in 1993. Our main goal was to develop a valid survey instrument to measure the lost passive use values experienced by Floridians due to the natural resource damages caused by the *BP/Deepwater Horizon* oil spill. To ensure validity, we attempted to construct the questionnaire in order to meet a number of objectives and thereby minimize several different types of biases that are inherent in stated preference analyses. These objectives included:

1) Measuring only a well-defined set of damages: If necessary, limit the scope of damages covered to those that can be easily understood, clearly defined, and quantifiable. Operating bias in the WTP estimate can occur if the respondents' understanding of the environmental damage might differ from the researchers. In addition, information bias in the WTP estimate can occur if the amount and type of information on the environmental damages affects the WTP estimate. This can be caused by respondents having other pertinent information on the topic. The effects of this type of bias can be minimized through sufficient feedback during focus groups and pre-testing (Cummings, Brookshire, and Schulze, 1986; Whitehead and Blomquist, 1991).
2) Ensure consistency with economic theory: Elicit an approximation to the monetized loss in consumer surplus suffered by the respondents as a result of damages caused by the spill, but measure the value over a relatively short well-defined time period (e.g., one year).
3) Construct the survey using simple language: Respondents from all educational levels and varied life experiences should be able to comprehend the language, concepts, and questions so they can make informed decisions. The survey should be translated into other languages, if necessary, to capture a specific segment of the population.
4) Use a plausible payment vehicle: The payment vehicle is the method used to collect the proposed payment elicited of respondents and should be in a way that is familiar to them. Payment vehicle bias in WTP estimates can occur if respondents answer based on how they are asked to pay, not what they are being asked to pay for. It can result in protest responses and an underestimate of WTP. Follow-up questions to the

WTP question can be used to help identify and mitigate the effects of this type of bias (Morrison, Blamey, and Bennett, 2000).

5) Construct a neutral survey instrument: The wording and the format should not be perceived by respondents as promoting the interests of any particular group such as environmentalists, oil companies, or the government.
6) Construct an incentive compatible survey design: Incentive compatibility in this study refers to a questionnaire that obtains truthful and accurate responses to the CV question. Incentive incompatible questionnaires can result from hypothetical bias, embedded bias, strategic bias, and yea-saying bias. In general, a single-bounded, referendum-based CV question is best for incentive compatibility. Cheap talk script and follow-up questions about the respondents' level of uncertainty can be used to minimize hypothetical bias (Blumenschein et al., 1998; Cummings and Taylor, 1999; List, 2001; Lusk, 2005). Landry and List (2007) also find that consequential design has the largest impact on attenuating hypothetical bias (relative to cheap talk or purely hypothetical protocol). Embedding bias, or insensitivity to scope bias, can be minimized by measuring a well-defined set of damages. In addition, a scope test (ideally a split sample test) can be used to see if WTP increases with an increase in the level of protection provided under the program (or level of damages reduced) (Mitchell and Carson, 1989; Carson and Mitchell, 1993; Whitehead, Haab, and Huang, 1998; Lew and Wallmo, 2011).[2] Strategic bias (responding to influence the outcome) and yea-saying (yes responses from those seeking to feel good, or get a warm glow) can both be minimized through the use of a referendum format, cheap talk script, and follow-up questions that identify specific reasons for supporting or rejecting a proposed program, and through mail or Internet surveys (Mitchell and Carson, 1989; Blamey, Bennett, and Morrison, 1999).
7) Analyze the data such that the estimated losses are conservative: This is usually more critical for cost-benefit analysis; however, conservative assumptions lend to the credibility of the final estimate (e.g., ignoring protest responses due to either the payment vehicle or bid level, which means they are included as negative responses to the WTP question). Another approach is to use a variety of approaches to derive the estimate of losses at the household level and compare them for consistency.

[2] To be more precise, the test for scope is a test to determine whether WTP is non-decreasing (as opposed to strictly increasing) with an increase in the level of protection provided under the program. The more strict interpretation is retained in the main text to improve readability and interpretation of the test.

Questionnaire Development

Overview

To adhere to the guidelines, the development of the survey took place in a number of stages. The first stage involved gathering secondary information on the *BP/Deepwater Horizon* oil spill and its effects on the Gulf of Mexico, as well as reviewing the level of detail provided on spills in previous valuation studies. This was accomplished using extensive Internet searches of government agencies, non-governmental organizations, media reports, and peer-reviewed literature on use of the CVM to value oil spill damages. This information was used to generate several graphics on the spill and its environmental impacts (i.e., graphs, maps, pictures of species that were affected, etc.).

The second stage involved gathering feedback on these materials from the general public. This stage began with an initial round of focus groups that were conducted around the state to determine Floridians awareness of, and sentiment towards, the oil spill and its effects on the Gulf of Mexico. The focus groups helped to identify which information was most useful and which visuals were most effective. These focus groups were also used to clarify the descriptions of key components of the hypothetical program designed to prevent damages from another similar spill (e.g., prevention versus mitigation program; Gulf-wide or coastal Florida; administered by the state, federal agency, non-governmental organization, or oil companies). In addition, we also conducted two mock focus groups (one before the first focus group and one before the last two when the written questionnaire was in development). The mock focus groups were conducted with a graduate-level survey research class at the University of Florida for the express purpose of training the moderator.[3] This was important since there was a written script to follow and numerous figures to refer to and handouts to pass out and collect. The practice focus groups also helped to edit the materials, including suggestions for simplifying the language. As a result of the first mock focus group, for example, all focus groups began with a discussion of the oil spill impacts that would—and, most importantly, would not—be discussed. Examples of the latter included tourism, jobs, recreation, and commercial fishing. The goal was to isolate the discussion to how they personally were impacted, if at all, by the effects on the environment. To that end, this information was placed on a flip chart that was visible throughout each focus group session and resulted in the repeated emphasis on "environmental impacts only" in the final questionnaire.

[3] The class was AEB 6817, "Survey Research Methods," with Dr. House as the instructor. The first mock focus group was held February 7, 2011, with the materials developed for the Pensacola focus group. The second mock focus group was held April 11, 2011, with materials developed for the Jacksonville focus group after minor changes to the handouts to reflect results of the previous focus group held in Cocoa.

The third stage involved a mall intercept survey designed to compare a prevention program with a mitigation program and the corresponding bid vehicles. This exercise asked participants to compare two programs in terms of efficacy, preference, and cost. The open-ended response format was valuable in helping us select the key aspects of the hypothetical program we would eventually use in the final questionnaire.

The fourth and final stage involved a second round of focus groups, which were purposefully conducted in population centers away from areas most directly impacted by the oil spill. At this point, we were still undecided about whether to conduct a phone-mail-phone survey in addition to a probability-based Internet survey. As a result, the same format was maintained; that is, the moderator used a written script and the graphics were assembled on 5" x 7" cards that were lettered and could be referred to by a telephone interviewer. These graphics were handed out with written questions throughout the session and after each, the moderator would ask for a discussion, prompted by questions in the script if necessary.

At least one member of the research team listened or viewed each focus group live. The audio tapes of each were posted on a project website for all team members the following day. The results of each focus group and the mall intercepts were discussed within a week and decisions were made regarding how the materials should be changed. At the conclusion of the focus groups we decided that the Internet survey was the only viable and timely mode of implementation given the sequential and graphical nature of the questions and supporting materials, respectively.

This section describes the first round of focus groups, the mall intercept survey, and the second round of focus groups in detail, including information on the logistics, participants, what was learned, and the main change to the materials following each. This section concludes with a detailed description of the final questionnaire.

Initial Focus Groups

Description

The objectives of these initial focus groups were to (1) assess the participants' level of knowledge of the spill and how they perceived the environmental effects; (2) determine issues with preferences for prevention and mitigation programs, including scope (i.e., geographic region of coverage); and (3) assess preferences for the alternative funding mechanisms (i.e., bid vehicles).

The following dates and locations for the three initial focus groups were selected to cover a variety of urban areas, including one in the study region: Pensacola on February 8, Miami on February 16, and Tampa on February 23. The Florida Survey Research Center (FSRC) led by Dr. Scicchitano was responsible for the logistics associated with the venue and obtaining a local representative group of 8 to 12 participants. FSRC found suitable venues at each location through the cooperation of the local University of Florida IFAS Extension Offices and/or Research and Education Centers (RECs). The venues had sufficient conference table style meeting space, Polycom technology for video conferencing, projection capabilities for a PowerPoint presentation, and staff for help after hours. Each venue location is listed below. Further information on each can be found online at: http://directory.ifas.ufl.edu/.

Pensacola area:

UF/IFAS West Florida Research and Education Center
5988 Hwy 90, Building 4900
Milton, Florida 32583
Contact: Sherry Davis (850/983-5216 x1211)
IP address: 74.252.105.2

Miami area:

UF/IFAS Ft. Lauderdale Research and Education Center
3205 College Avenue, Classroom 204A
Davie, Florida 33314-7719
Contact: Joanne Korvick (954/577-6371)
IP address: 128.227.161.35

Tampa area:

UF/IFAS Hillsborough County Extension Office
5339 County Road 579
Seffner, Florida 33584-3334
Contact: Debra Jo Kinsella (813/744-5519)
IP address: 128.227.156.83

A listed sample for each focus group (i.e., directory listings of landline telephones) was drawn from a 15-mile radius of the focus group location. The sample sizes were Pensacola: 1,200; Miami: 2,200; and Tampa: 2,200. The CATI (Computer Assisted Telephone Interviewing) system was used by the FSRC to auto-dial the numbers randomly. At the start of each shift, numbers to be called back are dialed first, then unused numbers are dialed. Each number can be called back up to four times in total, once each shift.

Interviewers made calls using the agreed upon recruitment protocol developed by the project team (see Supplement).[4] The protocol was designed to gather data on the following respondent characteristics that could be used to select a representative group of participants:

- Gender
- Age
- Duration of Florida residency per year
- Employment status
- Income
- Race, Hispanic
- Whether helped cleanup following the spill (if so, dropped)

Potential participants were selected from the dataset to match key demographic characteristics from 2009 U.S. Census data[5] for Escambia County for the Pensacola group and from Claritas 2010, which also uses the most recent Census data, for the same 15-mile radius recruitment area for both the Miami and Tampa locations. The dataset size for each focus group was Pensacola: 42, Miami: 42, and Tampa: 43. The responses to each recruitment question for each focus group are provided in the Supplement.

Selected participants were called to confirm their availability. A confirmation letter containing meeting information, the location, directions, and a map or an email containing a link to directions and a map was sent to those who agreed to participate. Any potential participants who were unable to attend or could not be reached were replaced from the dataset with a potential participant of similar demographic characteristics until 10 to 12 participants were enlisted for each focus group in order to ensure there would be 8 to 10 in attendance. Participants were called again the day before the meeting as a reminder. There were 10 participants in attendance in Pensacola, 7 in Miami, and 8 in Tampa. A comparison of the regional demographics with the participants is summarized in Table 2-1. While there are some differences between the samples and the populations in question for some areas, the representations were considered acceptable given the goal of only 8 to 12 participants per group.

[4] The Supplement is a separate file that contains all of the materials used during each focus group and mall intercept and the transcripts of the focus groups.
[5] U.S. Census Bureau, 2009 Population Estimates, General Demographic Characteristics, from American Fact Finder.

Table 2-1. Comparison of U.S. Census data to preliminary focus group participants by location

Characteristic	Population data	Characteristics of focus group
Pensacola area:	Escambia county	N = 10
Female (%)	50.6%	50.0% (5)
Male (%)	49.4%	50.0% (5)
Race:		
Caucasian (%)	71.0%	100.0% (10)
Black/African American (%)	22.7%	0.0% (0)
Other (%)	6.3%	0.0% (0)
Hispanic (%)	3.9%	10.0% (1)
Over 65 years of age (%)	11.9%	10.0% (1)
Household Income (HHI):		
Less than $30,000 (%)	40.5%	30.0% (3)
More than $30,000 (%)	49.5%	70.0% (7)
Miami area:	15-mile radius	N = 7
Female (%)	48.6%	42.9% (3)
Male (%)	51.4%	57.1% (4)
Race:		
Caucasian (%)	54.1%	42.9% (3)
Black/African American (%)	37.6%	0.0% (0)
Other	8.3%	57.1% (4)
Hispanic (%)	35.2%	57.1% (4)
Over 65 years of age (%)	12.5%	57.1% (4)
Household Income (HHI):		
Less than $30,000 (%)	36.3%	42.9% (3)
More than $30,000 (%)	63.7%	57.1% (4)
Tampa area:	15-mile radius	N = 8
Female (%)	50.7%	50.0% (4)
Male (%)	49.3%	50.0% (4)
Race:		
Caucasian (%)	74.8%	75.0% (6)
Black/African American (%)	16.1%	12.5% (1)
Other	9.1%	12.5% (1)
Hispanic (%)	21.6%	25.0% (2)
Over 65 years of age (%)	11.3%	12.5% (1)
Household Income (HHI):		
Less than $30,000 (%)	32.7%	37.5% (3)
More than $30,000 (%)	67.3%	62.5% (5)

Focus group materials included a sign-in sheet, a copy of the *Consent to Participate* form for each participate to sign, the cash for the participant stipends ($50 each), receipts for the stipends to be signed by the participants, an easel with a flip chart, a script for the moderator, a handout of information for each participant to review, light refreshments, three digital recorders, and pens. Copies of the consent form and the handouts are contained in the Supplement.

The moderator's script and handouts were revised between focus groups to take into account what was learned from each focus group. For consistency, the same individual moderated all three focus groups. This individual was instructed on parts of the script that were likely to get the participants off-topic. To help the moderator prepare for the first focus group, we held a mock focus group with a graduate-level survey research class at the University of Florida as described earlier. In summary, information learned during the mock focus group resulted in the use of flip charts to focus different discussions and simpler language on the graphics.

Following each focus group, the digital recording was copied and transcribed. The recordings were uploaded to a website in order to be available to the project team. The transcriptions are provided in the Supplement.

Results

The first two focus groups began by asking participants to describe the oil spill that happened in the Gulf of Mexico in 2010, including what they knew about how the environment was affected. The suggestion to use a flip chart to keep the discussions focused on the environment was useful at this point since the conversations would inevitably shift to other topics, including the effects on tourism and the safety of seafood. Participants were also asked if they could name other spills and about the size of the Gulf spill relative to these other spills. Participants were then given a copy of eight slides to evaluate and discuss. Participants were asked to identify information that was unclear and whether the information was neutral. These discussions identified many specific words, phrases, and pictures that were confusing or distracting and later revised or dropped.

These initial discussions revealed that few people could name another spill. Most knew that another big one had happened in Alaska but not to the point of making a meaningful comparison. As a result, the slide comparing recent big spills was deleted. Participants supported the use of a map that showed the location of the spill and the dispersion of oil in the Gulf relative to the coastal states of Louisiana, Mississippi, Alabama, and the western half of the Florida Panhandle. Participants also supported use of a map showing the locations of active platforms (which also included Texas), but as we would discover, such a

map undermined the use of any Florida-specific proposal. A typical question was why Floridians should pay for a program that would benefit so many other states and citizens. The same reaction was generated by use of a map that highlighted the state waters along Florida's Gulf coast and the EEZ demarcation, namely, that the Florida waters are relatively small and far removed from the active drilling region. Showing the effects on coastal habitats proved challenging as well; participants questioned how the coastline was measured; where the pictures were taken; and the definitions of terms such as "estuaries," "wetlands," and "erosion". Attempts at revisions lasted for three focus groups, but eventually the impacts on coastal habitats were dropped as too distracting. Slides describing general effects on the marine environment and potential long-term effects on fish stocks were also dropped for similar reasons and from uncertainty; there was no way to incorporate the level of detailed information required to address all these concerns and maintain a survey using simple language and of reasonable length (i.e., satisfy objectives 1 and 3 that were listed earlier in the ***Guidelines for Application*** section). Revisions to the effects on animals included showing separate slides for each type of animal, showing the species of most concern, and specifying the dates covered by the counts of collected dead animals. Many participants suggested showing oiled animals and pictures of the oil platform, but both of these ideas were rejected since they might be construed as an attempt to garner false support (i.e., satisfy objective 5, listed earlier in the ***Guidelines for Application*** section, and be consistent with past studies). A slide that summarized some reasons why oil spills occur in the Gulf was also rejected since it inevitably brought up hurricanes and distracted from the objective of valuing impacts from the *Deepwater Horizon* oil spill. Lastly, any mention of oil companies or BP would generate negative comments. As such, we consistently refrained from using the company name "BP" but decided to continue the use of "Deepwater Horizon" so there was reference to a specific event (versus "2010 Gulf oil spill"). This terminology is consistent with the use of CVM to measure ex-post losses from oil spills (e.g., *Exxon Valdez*, *Prestige*).

The moderator then introduced the idea of a program to stop the occurrence of, or reduce the impact of, future oil spills in the Gulf of Mexico. Participants were told that the purpose of the focus group was to develop a questionnaire to determine citizen support for such a program and whether they were, in general, supportive of such an attempt. Protests to the idea generally stemmed from two sources: (1) a sentiment that the oil companies are solely responsible and should pay for everything, especially since their profits are so high, and (2) a lack of trust in the government to effectively manage the program.

Here is how the program was described in the first focus group:

> Oil detection equipment would be placed at 25-mile intervals in state waters (3 to 9 miles from shore) around the Gulf. The equipment would be contained in a fixed vertical structure from the sea floor to the surface and would transmit oil and dispersant measurements at different depths to satellites every hour.
>
> The data would be monitored by two Coast Guard ships specially designed to immediately address oil spills, including large spills like the Deepwater Horizon. These vessels would be permanently stationed near the oil drilling region in the Northern Gulf and would be able to reach the site of any monitoring station or oil spill in the region within a day.
>
> The ships would carry a variety of equipment designed to address several different types of oil spills. Using information learned from the Deepwater Horizon oil spill, it is anticipated that the ships would carry booms and dispersants to contain surface spills and submersibles and robotic equipment to address subsurface spills. The crew of each vessel would be specially trained in monitoring and interpreting the data and containing and stopping oil spills.
>
> This program, including the two ships specially designed to help stop oil spills and clean up spilled oil, would require costly equipment to implement and well-paid, well-trained crews to operate.

The key discussions that followed focused on the distance between ships, the adequacy of two ships ("What happens when one is being repaired?" and "Is 24 hours too long of a delay?") and the equipment proposed (there was great opposition to use of dispersants). As a result, the distance was reduced, the number of ships was increased to five (with only four active at any one time), and the use of dispersants was dropped in lieu of language that only technologies proven to be effective in the long run would be used.

Next, the moderator asked the participants about different ways that citizens of Florida could pay for the program if they valued the environmental protection it is expected to provide. A one-time payment was specified in order to simplify the calculation of benefits and enhance confidence in the results (i.e., avoid asking about payments in the future). The alternatives were referred to as "surcharges" and included a fee on property taxes, oil-based fuel products, or vehicle registrations. The discussions focused on where the money would go. The property tax money was specified to go to a trust fund. Unfortunately, media coverage of Florida's budget situation had referenced a proposal to aggregate all monies in current trust funds; the potential for this action undermined our use of this payment

vehicle.[6] The surcharge on oil-based products was interpreted as a tax and equity issues were raised; mostly with respect to it being unfair that the spill would cause consumers to pay more but not the oil companies. In addition, "No Energy Tax" campaigns were frequently shown on Florida television stations beginning in April 2011. The surcharge on vehicle registrations was met with the same criticism as the use of a trust fund for property taxes since the mechanism for holding the money is the same.

With respect to potential bid vehicles (i.e., how participants would pay), the discussions during these focus groups revealed several pros and cons of various options, which are summarized in Table 2-2. Although not indicated in the table, the payment vehicle decision is tied to the scope of the program being proposed. For example, a federal program could not use a state-level payment vehicle without addressing the details of who would be in charge and how the funds would be shared.

The remaining time during the focus groups was devoted to discussing the proposed program and various options. Participants were asked to read about a program that would reduce the miles of oiled coastline and numbers of birds, sea turtles and dolphins killed. Initially, the numbers were rounded (e.g., 500 saved). We learned that this was not realistic to participants and eventually the description was changed to refer to a 90% reduction in losses using reported numbers (U.S. Fish and Wildlife Service, 2011).[7]

Participants were asked to vote for a fixed payment of $50. Although many claimed they would not be happy about paying, most claimed they would because they valued the pre-spill condition of offshore Gulf waters. In addition, the level of the payment did not seem to be an issue. The program description also included reference to the fee going toward 10 years of maintenance, at which point the program would be re-evaluated. Although this language was meant to introduce government oversight that would ensure the program is effective, it served to raise questions about the government's ability to effectively manage programs. Participants also questioned the likelihood of a one-time payment if the program was shown to be successful and continued or if it was wasteful and needed more money. To address these additional concerns the language was modified to refer to paying for the start-up costs only while ongoing maintenance fees would be paid by companies with operations in the Gulf of Mexico.

[6] Use of a trust fund for the payment vehicle would have been ideal for a Florida-only program since they are frequently used to fund over 200 causes (including environmental) via specialized license plates.
[7] Ideally, the hypothetical scenario (program) would value the *BP/Deepwater Horizon* oil spill in its entirety (i.e., 100% restoration, 100% prevention, or 100% mitigation should another similar spill occur); however, this level of absolute certainty proved unbelievable to respondents so 90 percent was used.

Table 2-2. Pros and cons of using alternative payment vehicles (and associated scope of proposed project) from the first round of focus groups

Payment vehicle	Pros	Cons
1. Federal program and federal income tax	a. Population easily measured b. Easily understood c. Timing is good d. Conversion to total value straightforward	a. Needs follow-ups on households, including filing status
2. Federal program and federal gas tax	a. Tied to reason for survey b. Easily understood	a. Distracts respondent from true values and directs blame b. Timing is bad, prices fluctuate c. Needs detailed follow-ups on household transportation use d. Difficult to measure and translate to total value e. "No Energy Tax" campaign
3. Federal program and federal retail tax on oil-based products	a. Tied to reason for survey b. Easily understood	a. Distracts respondent from true values and directs blame b. Needs detailed follow-ups on product use, including definitions c. Needs the amount of oil used by each product d. Difficult to measure and translate to total value e. "No Energy Tax" campaign
4. State program and state tax (gas or products)	a. Tied to reason for survey b. Easily understood c. Closer to home so have more control and oversight over funds	a. Concern over free riders b. Concern over not receiving any benefits from continued oil production c. State/federal demarcation is far from oil drilling region; damage would happen by the time oil reached our waters d. "No Energy Tax" campaign
5. State program and state trust fund (property tax or vehicle registration)	a. Trust funds for specific causes are common and easily understood b. Closer to home so have more control and oversight over funds	a. Concern over free riders. b. Concern over not receiving benefits from oil production c. Media coverage on plan to aggregate/use trust funds due to budget issues
6. Voluntary donation into trust fund (state, federal, or NGO)	a. Tied to reason for survey b. Would get those who are truly for the program	a. Same issues as #5, and more issues for coordination with Coast Guard if used NGO to run program

Mall Intercepts

Description

To help identify the best hypothetical scenario to use in the CVM component of the questionnaire, the research team decided to conduct a mall intercept survey to compare two candidate programs (A and B). Program A was designed to prevent another oil spill. Program B was designed to mitigate damage should another oil spill occur. Both programs included a rapid response component whereby oil would be quickly cleaned following a spill, but the payment vehicles were different due to the nature of each program.

Program A would require new oil spill prevention technologies (blowout preventers and relief wells) in addition to a new rapid response system administered by the U.S. Coast Guard. Program B proposed oil monitoring stations throughout the Gulf of Mexico in addition to the rapid response component. Program A would be funded directly by oil companies through the requirement that they install these new technologies, and indirectly by the American public from anticipated higher fuel prices to cover these immediate and substantial costs. Program B would be funded by a one-time federal income tax payment. In addition, under both programs, the ongoing costs to maintain the rapid response system would be paid by oil companies.

The intercepts were conducted on Saturday, March 19, 2011, at a mall in Ocala (North Central Florida) that is notably centrally located away from any saltwater areas:

> Paddock Mall (http://www.paddockmall.com)
> 3100 SW College Road
> Ocala, Florida 34474

Three individuals helped to complete 32 interviews. One person was primarily responsible for randomly selecting participants, another dealt with the informed consent paperwork and provided a two-page document that described each program, and the final interviewer helped with the completion of a third page that compared specifics of each program. Since the completion of the final page required a face-to-face discussion, this component often took much longer to complete. At those times the recruiter helped to complete and record information on the comparisons. Copies of the materials are provided in the Supplement.

Results

Participants liked the prevention component of Program A although it raised several issues that would need to be addressed in the questionnaire. First, Program A raised issues relating to the responsibilities of oil companies (i.e., protest responses); the idea that costs

would be passed on to consumers angered some participants. Second, the effectiveness of Program A would depend on effective monitoring and enforcement on oil rigs; many participants claimed they have little confidence that the U.S. government can provide that service, or they feared that the cost would become the responsibility of the taxpayer, which again elicited protest responses. Lastly, many participants showed concern over the effectiveness of prevention programs in general by stating that no equipment could be guaranteed to work all the time. Program B, on the other hand, would quickly identify a spill (surface or subsurface), acting like a type of insurance policy, which was well-received. Several asked why the program could not do all three functions. Overall, the results of the mall intercepts were not conclusive, but they provided ideas to reduce protest responses.

Final Focus Groups

Description

The dates and locations for the final three focus groups were chosen to represent areas with a higher proportion of individuals not directly affected by the oil spill: Orlando on March 23, Cocoa on March 31, and Orange Park on April 7. Suitable venues were found in Orlando and Cocoa through the cooperation of UF/IFAS facilities as before. In the Jacksonville area the team decided to use the facilities of a private market research firm because the office was located in a more populated area than the nearest UF/IFAS facility.

Orlando area:

UF/IFAS Orange County Extension Education Center
6021 South Conway Road
Orlando, Florida 32812
Contact: Darla Wilkes (407/254-9200)
Communication with team: conference call

Cocoa area:

UF/IFAS Brevard County Extension Office (main office)
3695 Lake Drive
Cocoa, Florida 32956
Contact: Jim Fletcher (321/633-1702)
Communication with team: conference call

Jacksonville area:

"Concepts in Focus" (Ulrich Research)
1329A Kinsley Avenue
Orange Park, Florida 32073
Contact: Kathy Hayman (904/264-3282)
Communication with team: N/A (video recorded)

A listed sample for each focus group was drawn from a 15-mile radius of the focus group location using the same procedure as before. The sample sizes were Orlando: 2,000; Cocoa: 2,200; and Jacksonville: 2,200. For the Orlando focus group, interviewers made calls using the existing recruitment protocol. For the Cocoa and Jacksonville area focus groups the protocol was revised to further eliminate the potential for attracting participants that had any direct connection to the oil spill.[8] Potential participants were selected from the dataset to match key demographic characteristics from the 2009 U.S. Census data for the same 15-mile radius recruitment area. The dataset size for each focus group was Orlando: 22, Cocoa: 20, and Orange Park: 32. Selected participants were contacted as described previously. There were 9 participants in attendance in Orlando, 8 in Cocoa and 10 in Jacksonville. A comparison of the regional demographics with the participants is summarized in Table 2-3. The responses of each participant to the recruitment protocols are in the Supplement.

For consistency, the same individual moderated the final three focus groups as moderated the first three. The materials for the final three focus groups were the same as for the first three except the moderator's script and handouts were changed. This is because the goal was to move toward a questionnaire that could be implemented by telephone or over the Internet. To that end, the moderator's guide gradually transformed into a script whereby the moderator would read materials (as if the participants were listening on the phone or reading themselves) and supplemental figures and questionnaires were distributed throughout the session.

After collecting each round of questionnaires, there would be opportunity for questions and answers. The number of discussions was limited in the final two focus groups in order to better control the information that the participants used to answer the questions that followed. The primary discussion in the final focus groups occurred after all materials had been presented and questions answered. All focus group materials are contained in chronological order in the Supplement at the end of this report.

Following each focus group session the digital recording was copied and transcribed. The recordings were uploaded to a website in order to be available to the project team. The transcriptions are also included in chronological order at the end of the Supplement.

[8] Recall that the objective is to determine how a representative sample of Florida residents may value the non-market environmental goods provided by a clean Gulf. To that end, it is imperative that the focus group discussions be neutral and balanced (i.e., satisfy objective 5); the presence of individuals with connections to the oil spill could affect the opinions of representative residents.

Table 2-3. Comparison of U.S. Census data to final focus group participants by location

Characteristic	U.S. Census data	Characteristics of focus group
Orlando area:	15-mile radius	N = 9
Female (%)	50.3%	55.6% (5)
Male (%)	49.7%	44.4% (4)
Race:		
Caucasian (%)	52.2%	88.9% (8)
Black/African American (%)	14.6%	11.1% (1)
Other (%)	7.0%	0.0% (0)
Hispanic (%)	26.3%	11.1% (1)
Over 65 years of age (%)	11.0%	11.1% (1)
Household Income (HHI):		
Less than $30,000 (%)	30.1%	33.3% (3)
More than $30,000 (%)	69.9%	66.7% (6)
Cocoa area:	15-mile radius	N = 8
Female (%)	50.5%	50.0% (4)
Male (%)	49.5%	50.0% (4)
Race:		
Caucasian (%)	79.3%	87.5% (7)
Black/African American (%)	9.4%	0.0% (0)
Other	4.4%	12.5% (1)
Hispanic (%)	6.9%	0.0% (0)
Over 65 years of age (%)	18.7%	50.0% (4)
Household Income (HHI):		
Less than $30,000 (%)	43.7%	12.5% (1)
More than $30,000 (%)	56.3%	87.5% (7)
Orange Park area:	15-mile radius	N = 10
Female (%)	51.3%	50.0% (5)
Male (%)	46.7%	50.0% (5)
Race:		
Caucasian (%)	62.8%	80.0% (8)
Black/African American (%)	24.2%	20.0% (2)
Other	6.2%	0.0% (0)
Hispanic (%)	6.8%	10.0% (1)
Over 65 years of age (%)	11.4%	30.0% (3)
Household Income (HHI):		
Less than $30,000 (%)	32.2%	44.4% (4)
More than $30,000 (%)	67.8%	55.6% (5)

Results

The moderator began the Orlando focus group by first asking participants to evaluate a list of issues that face Florida and the United States by rating the importance of each, and telling participants that not everyone will feel the same and that there is no right or wrong answer. Beginning the focus group this way was in stark contrast to previous focus groups that began with a discussion of past oil spills. Participants were next asked to evaluate a list of federal programs funded by tax money.

The moderator then stated that new federal programs require taxpayer support since ultimately taxpayers fund the programs. Participants were also asked whether they have ever been questioned about a new program. The discussion then turned toward oil spills and participants were asked the same questions as in the first round of focus groups—what they know about past spills, what they know of the environmental effects from the *Deepwater Horizon* (if they remember), and their past coastal visitation and activities—but these participants were required to answer on paper.

Next, the moderator read aloud the descriptions of (a) the environmental effects that were recorded to date (approximate number of miles of oiled coastline and number of birds, sea turtles, and dolphin killed); (b) the proposed program; (c) the effectiveness of the program, and (d) reasons why people might vote for or against the program.

The Orlando focus group was presented with a program that combined Programs A and B from the mall intercepts. The objective was to see if the prevention component (requiring wells to have new equipment and additional relief wells)—included in order to measure the full value of the oil spill—could be included with a payment vehicle that was based on oil use. Including the prevention component necessarily brings oil companies into mind as they would have to install the equipment; focus group discussions revealed that any plan that involved oil companies had to use higher fuel prices as a payment vehicle. This payment vehicle would, therefore, be effective in the sense that most people believed that oil companies would automatically raise prices to pay for the costs to cover the spill. Participants were told that the cost they would vote for ($75) was an estimate of the additional cost to their household from higher fuel costs, which would occur only in the first year of the program because oil companies would seek to cover the substantial installation costs. In addition, participants were told that the amount of such a payment would vary for everyone, depending on their driving habits, but they were to assume that it translated into $75 for their household. The $75 value was used in the mall intercepts and was not questioned as being too high. Again, participants were asked to react on paper and hold all discussions to the end.

The attempt to use a fuel-based payment vehicle raised many questions. Most notably was that the fee would naturally vary by household. If the fee shown did not match the level of fuel consumption in the household, the realism of the program was undermined. In addition, as noted in the table, a fuel-based fee also raised concerns about free-riders (i.e., those who value the resource but do not drive a car would not pay).

Following the Orlando focus group a couple of key changes were made to the materials, including to (1) report the specific numbers of environmental effects (versus arbitrary reductions using rounded numbers) and include the date the information was obtained; (2) drop the prevention component of the program and replace it with three additional ships that could reach any spill in 12 hours; (3) add pictures of the monitoring equipment to show the technology exists; and (4) change the payment vehicle to a one-time federal income tax withholding.

The focus group that was held in the Cocoa area (the fifth focus group) followed the same format as the one in Orlando, namely that a script was read to participants and they were intermittently asked to react to visuals (maps and pictures) and to written questions. As a result of the comments received, the following changes were made to the materials, including to (1) separate the environmental effects on animals into different figures so that more than one species could be discussed and reported on, which also allowed for presentation of more information; (2) add a picture of the type of Coast Guard ship that would be used; (3) refer to the payment vehicle as a one-time federal income tax "payment" versus "withholding"; and (4) describe the effectiveness of the program by stating that scientists estimated that the impacts would have been limited to 20% of those reported (exclusive of unknown and long-term effects).

After the final focus group in Jacksonville, a couple of minor changes to the descriptions were made, including to (1) include "pop-up" boxes to explain some terms that were commonly questioned by participants (e.g., difference between threatened and endangered species); (2) underline key words such as "environment" and "one time" as reminders; and (3) better explain and emphasize that there are restrictions under the Oil Pollution Act (OPA) of what oil companies can be forced to pay for.[9]

[9] The main point was that oil companies could not be forced to pay for the installation of equipment owned and operated by the U.S. Coast Guard but could be forced to pay for ongoing costs. This is hypothetical under the OPA, which is subject to broad guidelines that target cleanup activities, but was viewed as believable to focus group participants.

Components of Questionnaire

The final questionnaire contained five sections. In general, the survey is long due to the need to present respondents with sufficient information to understand the limited context of the survey (i.e., environmental impacts only), details on the proposed program (scope, effectiveness, and justification for bid vehicle), and what they should consider when deciding how to respond (e.g., cheap talk and consequentiality script). The survey was made longer by including questions designed primarily to keep the respondent engaged. Each section is summarized in turn and specific question numbers are identified. The questionnaire is provided in Appendix B. Specific questions, figures, and maps that are included in the questionnaire in Appendix B are referred to below but are not reproduced here.

Before beginning the survey, respondents were told that "the University of Florida has been asked to conduct a nationwide survey of opinions regarding new federal programs." This introductory text was followed by information required to be included at the start of surveys by the University's Institutional Review Board, which ensures that research involving human participants contains the proper information on informed consent. Respondents were not told who funded the survey, but were directed to contact Knowledge Networks at a toll-free number that was provided if they wanted the contact information for the investigators; however, no calls were received.

Except where noted, all responses were closed-ended with either a yes/no/not sure response format or a Likert scale (usually five-point) that also included a "not sure" option per the NOAA guidelines. No respondent was required to answer any question but there was a pop-up reminder for the CVM question if the respondent initially failed to answer. In addition, four pop-up boxes were created to provide additional information on threatened and endangered species and to review key information on the proposed program before being asked to vote.

Section A. Background Information

The survey began by asking respondents to rank their degree of support for six types of federal environmental programs funded by taxpayers (A_1) and whether they have ever been asked their opinion about such programs (A_2). The objective was to get them to consider the opportunity costs of federal monies and that public support is important for implementing new programs.

Respondents were then shown a map of the Gulf of Mexico that identified coastal areas in the United States (Map 1) before being asked how much they know about the Gulf of

Mexico (A_2b). This was followed by a map of the active oil wells and federal drilling areas in the Gulf of Mexico (Map 2) and a statement that while no drilling occurs off the Florida coast, drilling depths have increased offshore and drilling has moved further offshore with improved technology. Respondents were asked how the number of wells shown corresponds with what they expected (A_4).[10]

Information on the oil spill was presented next: namely, when it began; where it was located; and the cause, duration, and quantity of oil spilled (including a comparison with the *Exxon Valdez*). Respondents were asked how much they knew about the spill before taking the survey (A_5).

At this point the respondents were told that they are going to learn about a proposed program "to reduce environmental impacts from another large oil spill in the Gulf of Mexico" and that "this survey effort is focused only on the environmental impacts" although other efforts are underway to address the recreation, tourism, and human health impacts. Respondents were also reminded that some people might not care about how the environment was affected.

The next figure showed a map of the location of the oil spill, with colored areas showing how long visible surface oil had been present in different areas following the spill (Map 3). Oiled coastal areas were also identified. Respondents were told that it is difficult to estimate with certainty how much oil remains and the reasons why. They were then asked how concerned they are about the environmental impacts (A_6).

At this point in the questionnaire specific environmental impacts were introduced, namely impacts on marine birds, sea turtles and mammals. After a brief mention of how these birds were affected in general (i.e., many "were able to relocate to avoid contact with oil, some were temporarily oiled and others died from the oil"), three pictures of the most affected species of each type of animal were shown in turn (Figures A-1, A-2, and A-3), accompanied with mention of whether they were threatened or endangered. After seeing each set of pictures respondents were asked if they had ever seen any of these animals in person (A_8). Then, the same sets of pictures were shown, but the captions included the number of dead that were collected under the official cleanup program (Figures A-4, A-5, and A-6). The text included the address of the source website and prefaced the information by stating that "Please note that not all oiled animals were killed; some were cleaned and saved. Also, some of the dead animals collected probably died due to reasons other than the

[10] Some question numbers are out of order as a result of rearranging some of the material after the final pre-test. One example is question A_3, which appears later in the survey. Knowledge Networks preferred to maintain the same question numbers so the field reports and data sets all use the same variable names.

oil spill." After each set of pictures respondents were asked about their level of concern for each type of animal (A_9).

The background section ended with a discussion of why the numbers reported may be too low (three reasons were provided) but stated that the number of species affected, as shown, is small compared to the over 200 species that are common in the Gulf. This discussion ended by acknowledging that it is too early to assess long-term impacts but that past experiences from other spills can provide some insights, including estimates of total bird deaths from the *Exxon Valdez* oil spill as a multiple of the number of dead birds recovered. Respondents were asked how much of this information they already knew (A_10) and whether the facts presented, in their opinion, were over- or under-estimated (A_11).

Section B. Proposed Program

This section provided a detailed description of the hypothetical scenario that was developed to elicit respondents' stated preferences for a restored Gulf environment, which is the core of the contingent valuation method (CVM). This description included the program and the bid vehicle (funding mechanism); their preference for the program was sought in the following section.

The description of the hypothetical scenario (mitigation program) being proposed began with the statement that "If Americans think it is worthwhile, a new program…." Even though only Floridians received the survey, pre-testing revealed that it was imperative that respondents believed that they would be sharing in the costs of the program with all Americans in order to avoid protest responses. This statement also served to reiterate that support is needed for all new federal programs.

First, the two main benefits of the program were summarized (quickly stopping future leaks and continuous monitoring for surface and subsurface oil) and respondents were asked if they thought it was a good or bad idea in general (B_1). Those respondents indicating that it is a bad idea were encouraged to continue since they would be presented with more information.

Second, the first part of the program was described, which entailed the procurement of five ships to be operated by the U.S. Coast Guard and designed to quickly stop and clean up spills based on information learned from the "2010 Gulf oil spill." A picture of a similar ship was shown (Figure B-1). Respondents were asked how familiar they were with the mission of the U.S. Coast Guard (B_2).

The second part of the program, oil monitoring and detection, was described next. Pictures of two types of equipment were shown to help eliminate hypothetical bias (Figure B-2). The amount of detail was considered necessary given the comments received in the focus groups. Respondents were told that the U.S. Coast Guard would be designated the lead agency in addressing oil spill monitoring and cleanup and that all personnel would be trained to fulfill these new responsibilities. A sufficient amount of detail was provided on the program to help convince respondents that it would be effective. Respondents were then asked about their level of confidence in the U.S. Coast Guard (B_3).

Third, respondents were shown estimates of how effective scientists estimated the program to be. Effectiveness was defined as the percentage reduction in environmental impacts and this percentage was randomly selected to be either 20%, 45%, 70%, or 90%. This information was summarized in a figure with the number of killed animals and miles of oiled coastline presented earlier, one of the randomly selected effectiveness levels (i.e., percentage reduction of impacts), and the corresponding number of coastline miles that would not have been oiled and number of animals that would not have been killed (birds, sea turtles and marine mammals) if the program had already been established (Figure B-3). In order to put the benefits of the program into context and provide neutrality in the description, respondents were reminded that "the number of most animals it would protect is small compared to their total numbers in the Gulf of Mexico." Respondents were then asked how important it was, in their opinion, to avoid that percentage reduction of environmental impacts if there were another large spill (B_4).

Fourth, respondents were told that the federal government is considering a range of programs that differ based on how effective they are expected to be and how much they would cost. Respondents were then shown a bar graph with the four percentages, including the effectiveness level they were asked to evaluate, and zero percent for no program (Figure B-4). Respondents were then asked to what extent they agreed or disagreed with a statement saying they understood all of the information that was presented on the proposed program (B_5).

Lastly, the discussion moved toward program funding and the payment vehicle. The description of what is and is not required of oil companies under the Oil Pollution Act (OPA) was hypothetically summarized to convince the respondents that the program is reasonable. In particular, we stated that it is not legally possible to make oil companies pay for the upfront costs to establish the program (i.e., purchase the U.S. Coast Guard equipment), but oil leasing fees could be quickly increased and maintained in the long run to cover the ongoing maintenance costs. Thus, if a vote of the general public approved of the establishment of this program in November 2012, all federal income tax filers would be assessed a one-time fee (which would be identical for everyone) payable directly to the U.S.

Coast Guard. These funds would cover the cost of the new equipment and training only; the ongoing maintenance costs would be paid with the higher oil lease fees. Respondents were asked to what extent they thought the program was a reasonable way to reduce damages from another large oil spill (B_6). Again, those indicating that it was somewhat or very unreasonable were urged to continue.

Section C. Vote on the Program

This section began by showing the respondent a table of valid reasons for deciding how to vote on the program (Figure C-1). The table listed seven reasons for and seven reasons against. Respondents were then asked if any of the reasons included how they felt about the proposed program (C_1).

Before asking how they would vote, respondents were provided with "cheap talk," which is a script designed to encourage them to give an unbiased response. In this questionnaire, the following script was used:

> Sometimes when people are asked to evaluate a proposed program like this one, it is easy for them to say they support a project either because they are not being asked to pay at the same time, or they don't think they will have to pay based on their response. However, we want you to only respond with what you actually think you would do given the estimated cost to your household.

Respondents were then provided an opportunity to review four types of information presented earlier via pop-up boxes (Pop-up #1, #2, #3, and #4), and then reminded that there is "no right or wrong answer" and that, in their consideration of the cost of the program, they should consider all the other environmental causes that they currently support. The exact script used was:

> Lastly, also consider your personal income and current payment obligations, including any recent or planned contributions to other environmental causes. Also remember that the cost of the program could result in your household paying instead of receiving a refund, your household paying more taxes, or your household receiving a lower refund.

The contingent valuation question (C_2) was worded as follows:

> If an election were held today, would you vote for, or would you vote against, the funding of a U.S. Coast Guard program to reduce environmental impacts of another large Gulf oil spill by X% if a <u>one-time</u> payment of $Z would be added to your household's federal income tax?
>
> Note: The funds raised from this <u>one-time</u> assessment would be transferred, by law, directly to the U.S. Coast Guard in the same manner as the additional lease fees charged to the oil companies described earlier.

The effectiveness level, X%, was randomly selected from one of the four levels defined earlier (i.e., 20%, 45%, 70%, or 90%) and the bid level, $Z, was randomly selected from among eight levels ranging from $10 to $385 that were based on results of the formal pre-test, which is described in the following section (**Survey Implementation and Response**).

Respondents who indicated that they would vote for the program were then asked to identify, among the list shown for voting "for" in Figure C-1, their most important reasons (C_2_FR_B) and to indicate how sure they were that they would actually vote for the program (C_2_FR_C). Respondents voting against the program or who were not sure were then asked to identify, among the list shown for voting "against" in Figure C-1, their most important reasons (C_2_AG_B) and to indicate if they would be willing to pay anything to fund the proposed program (C_2_AG_C). This latter question is potentially important given the relatively high bid values that some respondents were assigned.

This section ended with a sequence of questions (seven in total) designed to determine what the respondents thought about future oil spills and various aspects of the proposed program. These questions also address the perceived consequences of the program and objectiveness of the survey. Respondents were asked about:

- Their best guess of the likelihood of another large spill happening (C_3).
- Their opinion of the environmental impacts of another large spill without the program (C_4).
- Their belief of how effective the program would be compared to the scientists' estimate that they were asked to consider (C_5).
- How often they thought they would have to make the payment (C_6).
- Whether they thought the survey pushed them to vote one way (C_7).
- Whether and, if so, how strongly they believed the survey results would affect oil monitoring or cleanup decisions by the U.S. Coast Guard in the Gulf of Mexico (C_8).
- How much confidence they have in the Federal government's ability to reduce the impacts of oil spills (C_9).

Section D. Additional Household Information

Several questions were designed to determine the behavioral characteristics of the household as they relate to either the Gulf of Mexico or the environment in general, including:

- How often they watch television shows about the environment (D_1).
- How many days they spent along the Gulf for saltwater-related recreation in the past year (A_3) and, if they spent any days, what activities they did (A_3_B).
- How many vehicles are owned or leased by household members (D_3).

- Whether anyone in the household contributed time or money to an environmental cause in the past year (D_6).
- Whether their household income was directly or indirectly affected by the 2010 Gulf oil spill (D_7) and the number of people contributing to that income (D_8).
- Whether they received a federal income tax refund or paid additional federal taxes for 2010 (D_9).

Notable strengths of these questions are that they allow for testing the effects of behaviors that the respondents have exhibited in the past (including participation in environmental activities and coastal visitation) rather than relying on attitudinal questions.

Section E. Final Follow-up

The final section of the survey began by telling respondents that since they have had time to think more about the proposed program, they are being given the chance to revisit the voting question (C_2). "Time to think" has been shown to be important in non-market valuation. Gathering responses for other levels of expected outcome (at same price) can be useful in estimating models and testing for theoretical restrictions as it provides more information on preferences.

After showing them links to the four pop-ups with summary information on the program, same as before C_2, respondents were asked the same question with the same note (E_1). Respondents voting for the program at the lowest effectiveness level (20%) or against the highest effectiveness level (90%) were forwarded to the final two survey questions. The remaining respondents were asked if they would vote for the program that offered the higher or lower effectiveness level at the same cost (E_1_FR for those voting for, who were asked if they would still vote for the program if it were less effective, and E_1_AG for those voting against, who were asked if they would vote for the program if it were more effective). The higher or lower levels of effectiveness were just one level above or below the level they initially were asked to vote on. This follow-up information can be used to estimate how the effectiveness of the program impacted their vote, or to estimate alternative CV models.

The final two questions were used to assess whether there were any biases in the way we wrote the questionnaire. The first asked whether they thought the survey was intentionally misleading (E_2) and, if so, how (open-ended question E_2Y). The second asked for them to indicate who they believed funded UF to conduct the study (open-ended question E_3).

Survey Implementation and Response

Cognitive Interviews

The cognitive pre-test interviews are conducted from the first responders among 50 who were invited to complete the survey. All respondents to this pre-test completed the same version of the survey, with an effectiveness level of 70% and a bid level of $135. Between July 6 and July 16, 2011, 32 individuals completed the survey. Respondents are asked, at the completion of the survey, if they would be willing to discuss this survey with an interviewer for approximately 15 minutes. If so, a call was arranged within 48 hours to engage respondents in the following interview:

> Hello, this is _____ from Knowledge Networks. I am calling about the survey you took recently that asked for your opinion on a new federal program to address oil spills in the Gulf of Mexico. We are in the process of improving this survey. You are one of the first people to be asked to complete it, so we are very eager to hear your opinions about it.
>
> Your answers will help us improve the questions and make the survey easier for other panel members. We will be asking you some specific questions, but if you have any other comments as we go along, *please* be sure to interrupt and let us know.
>
> 1) First, what was your overall impression of the survey? Did you find any part of the survey difficult to understand? Interesting? Boring? Invasive? If so, what?
> 2) Are there other questions you would like to see asked? If so, what?
> 3) Was there anything about the proposed program itself that was unrealistic or would not be as effective at reducing damages as was described in the survey?
> 4) Did you skip or didn't want to answer any questions? If yes, why?

The above questions were answered by seven panelists (i.e., members of Knowledge Networks' *KnowledgePanel*®). The interviews occurred between July 9 and July 18 and were conducted by a single Knowledge Networks staff member. Audio recordings were provided of each interview for review by the project team. Results confirmed that there were no deficiencies in the questionnaire, meaning that (a) it was understandable, (b) the questions were sufficient, and (c) none of the questions seemed invasive or inappropriate. In addition, the pre-test results confirmed that the survey coding was correct and the length of the survey was as expected based on the number of pages and amount of text.

Formal Pre-test

A formal pre-test was conducted by Knowledge Networks for the main purpose of testing the range of bid values and effectiveness levels for use in the CV referendum question. Recall that respondents were asked how they would vote on a program that would reduce potential oil damage from another spill by X% if it would cost every household $Z. The bid levels ($Z) were randomly selected to be $85, $135, or $210. The effectiveness levels (X%) were randomly selected to be 30%, 70%, or 90%. Those indicating that they would vote for the program were sent to a payment card that asked them to identify, among a list of values that reached $310, the maximum they would be willing to vote for. The values began at $25 above the value they indicated that they would vote for ($Z) and increased in $25 increments. The remainder of the questions remained the same as in the final version of the questionnaire.

Respondents who indicated that they would vote against the proposed program, or who indicated that they were not sure how they would vote, were also sent to a payment card asking them to identify a lower amount that they might be willing to vote for. The list of values started at $0 and reached a level below the value they rejected ($Z) in $15 to $25 increments. The remainder of the questions remained the same as in the final version of the questionnaire.

The data from the formal pre-test of the Internet survey were received on August 10, 2011. A total of 543 responses were obtained from "opt in" (off panel) respondents. Off-panel respondents were needed in order to preserve the population of Knowledge Network panelists for the full launch. Based on the pre-test results, including answers to the open-ended questions, the main modifications to the questionnaire included:

1) The addition of several information sources for some of the figures and maps, the inclusion of a statement that no dispersants would be used, and adding emphasis to statements (i.e., underlying) that they would only pay once.
2) The 30% effectiveness level was replaced with 20% and we added a level (i.e., 45%).
3) The number of bid levels was increased from three to eight: $10, $45, $85, $135, $185, $235, $285, and $385.
4) The payment card follow-up to the WTP question was deleted. The full launch used a single-bound format with follow-ups.[11] Those voting "for" the program were asked for the surety of their response. Those voting "against" or "not sure" of the program were asked if they were willing to pay anything ("yes", "no", or "not sure").

[11] A full-double bound specification was not compatible with the reconsideration question (E_1) and the scope test follow-up questions (E_1_FR and E_1_AG).

The next step in the process was to have the questionnaire coded into Spanish. The translation needed to occur before the release in English in case there were instances where the language did not translate into the exact same meaning. If inconsistencies were identified, questions would have been re-written before the full launch, however, no inconsistencies were found.

Full Launch

For this study, all households in the State of Florida constitute the study population. Knowledge Networks (KN) maintains a panel of respondents who have been scientifically recruited to represent the Florida population. For purposes of this survey, KN invited 2,088 panelists of which 1,280 (61.3%) "clicked" to begin. KN limits the number of survey invitations each panelist receives to no more than six per month and the invitations are generic; they give no indication as to the content of the survey. As is typical of KN respondents, those who begin a survey go on to complete the survey. KN obtained an additional 767 responses from an "opt in" sample for a total of 2,047 respondents. Details on Knowledge Networks *KnowledgePanel*® and their sampling procedures, including obtaining opt-in responses, are summarized in Appendix A.

Of all respondents to the survey, 101 (4.9%) completed the survey with the Spanish version and all were from the *KnowledgePanel*®. Being a native Spanish speaker is one of the variables used by KN to derive an overall statistical weight for each respondent in order to adjust the sample to represent the population in Florida. In total, KN uses nearly a dozen respondent characteristics to derive four types of weights to calculate a unique weight for each of the 2,047 respondents for use in the empirical analysis. The four weights included (1) a base weight designed to account for deviation in the selection process from a pure equal probability sample design; (2) a Spanish language base weight to account for selection probabilities; (3) a panel demographic post-stratification weight to account for unavoidable survey error such as for non-coverage, non-response due to panel recruitment methods and to panel attrition; and (4) a study-specific post-stratification weight to adjust for the study's sample design and for survey non-response. A description of these weights and how they were generated for this study by KN appears in Appendix A.

Respondents completed the survey in a median time of 25 minutes. All surveys were completed between September 20 and September 29, 2011, and all respondents received a cash-equivalent $5 incentive due to the relatively long duration of the survey.

Empirical Results

Summary of Data and Analysis

The full data set contained 2,047 observations. In order to empirically evaluate the CV question, and derive an unbiased estimate of lost PUV, we first needed to ensure that all respondents answered. All but 8 individuals answered the CV question. These 8 were initially assumed to have voted against the program, but these individuals also did not answer several other questions that were used to estimate a model to derive parametric estimates of lost PUV. Any respondent not answering any of the questions associated with the variables used in the model (there were 9 in total, including the dependent variable from the CV question) were deleted. In total, 80 observations (3.9% of the sample) were deleted for having an incomplete set of answers.

In addition to verifying that all observations were complete, it was necessary to determine whether each respondent considered the CV question (i.e., proposed mitigation program). This was accomplished by examining responses to two questions. First, question C_2_AG_B asked respondents who voted against the mitigation program the following:

> Why did you decide to vote against the program? Please check the most important reasons to you.
>
> a. Since most species are not in danger of going extinct, it is not important to me
> b. I don't believe another large spill will happen because companies will voluntarily improve
> c. I don't believe the program will be as effective as described
> d. I don't trust the U.S. Coast Guard
> e. I believe that regulations on drilling will change and be effective
> f. My money would be better spent on other things
> g. The cost to me is too high
> h. Other (please describe)

Respondents that selected "'b" were removed from the sample. Second, question C_3 asked:

> With oil drilling resumed in the Gulf and continuing to move into deeper waters, what is your best guess of the chances of another large oil spill in the Gulf of Mexico in the next 10 years?
>
> - 0%; I don't think there is any chance of another large spill
> - 25%; I think there is probably a slight chance of another large spill
> - 50%; I think there is probably a 50-50 chance of another large spill
> - 75%; I think there is a pretty good chance of another spill
> - 100%; I think another large spill is certain
> - Not Sure

Respondents who selected "0% …" were also removed from the sample. In total, 130 observations (6.4% of the full sample) were deleted for indicating that they believed there was no possibility of a future spill. Believing that there is a possibility of a future spill is a pre-requisite for obtaining valid responses to the CV question. Recall that we are using respondents' preferences for avoiding the environmental damages from another spill, similar to the *BP/Deepwater Horizon* oil spill, to estimate PUV losses from the *BP/Deepwater Horizon* oil spill. An estimate of PUV losses from the *BP/Deepwater Horizon* oil spill cannot be made for those respondents who do not believe that a future oil spill will occur.

These responses were distinctly different from protest responses that were left in the sample. Protest responses were those where respondents voted against the program for "other" reasons (answer "h" to question C_2_AG_B and open-ended responses to question C_2_FR_B_Text), such as the "government would not run the mitigation program efficiently or effectively," the "oil companies should pay all of the costs associated with the program," and "federal taxes are already too high." These beliefs, while making the mitigation program less attractive to respondents, do not preclude the program from providing some level of value to the respondent, which is why their negative responses to the vote are retained.

Lastly, in addition to considering protest responses, it was important to determine whether respondents thought the survey was one-sided. This was accomplished by considering responses to three separate questions. First, was the response to question C_7 that asked:

> Overall, do you think the information presented to you tried to push you to vote one way or another, or let you make up your own mind?
>
> - Yes, it strongly pushed me to vote against the program
> - Yes, there was a slight push for me to vote against the program
> - No, it didn't push me to vote for or against the program
> - Yes, there was a slight push for me to vote for the program
> - Yes, there was a strong push for me to vote for the program
> - Not sure

In total, 10.5 percent believed that the survey strongly pushed them to vote for or against the program. For comparison, 62.2 percent of respondents indicated "no" or that they were "not sure." Second, question E_2 asked:

"I believe that the survey was intentionally misleading."

- Strongly disagree (it was very neutral)
- Somewhat disagree (it was somewhat neutral)
- Neither agree nor disagree
- Somewhat agree (it was misleading)
- Strongly agree (it was extremely misleading)
- Not Sure

In total, only 2.5 percent thought the survey was extremely misleading. For comparison, 54.8 percent thought the survey was neutral and 38.5 percent neither agreed nor disagreed or were unsure. Third, the final question of the survey, E_3 asked who they thought funded the study. This was asked as an open-ended question. Responses were categorized into the following groups: (a) oil companies; (b) government such as state, federal, UF, or specific agencies; (c) environmental group; (d) other single response; and (e) don't know or multiple responses. In total, 53.4 percent responded that they did not know. In summary, answers to all three of these questions indicate that most respondents believed that the survey allowed them to make up their own mind, was not intentionally misleading, and could not identify the source of funding. Collectively, this indicates that the 1,837 survey respondents contained in the sample will generate valid and thoughtful answers and thereby credible lost PUV estimates.

In terms of the empirical analysis, there are two basic types of results to report: (1) tests of internal validity and (2) estimation of the lost passive use value. The first set of results is used to ensure that respondents are valuing the hypothetical good that we propose in a rational manner (e.g., respond to price in expected ways and show that they prefer more to less). These results are critical to support the derivation of lost PUVs that are generated from the data. The second set of results consists of estimating the lost non-market values associated with the *BP/Deepwater Horizon* oil spill at the household level using two different techniques and then extrapolating the results to the population of interest (i.e., households in Florida). Each set of results is discussed in turn.

Tests of Internal Validity

Description

Tests of internal validity use survey responses to determine whether the contingent valuation question (CV) measures respondents' true economic values by examining whether respondents' stated preferences conform to theoretical expectations. Recall that the CV question was a referendum question such that respondents were asked how they would vote on the hypothetical program that would mitigate damages from another similar oil spill. A vote "for" the program indicates that the respondent is willing to pay the bid value (one-time increase in federal income tax) they were asked to consider. In this study, we formally tested the CV responses for sensitivity to both the bid value and the scope of the program. In theory, the CV responses should be sensitive to both the bid value and the scope of the program. In addition, we examined the data for evidence of consequentiality, which is to see if respondents believed the survey results would impact policy decisions.

To test for sensitivity of responses to several factors that are *a priori* expected to have an impact on the responses, logit regression analysis was performed. Using a logit model specification, the dependent variable is the log of the odds of respondents indicating that they would vote for the program (i.e., be willing to pay) at the assigned bid value

$$\text{Ln}\left\{\frac{pr(YES)}{1-pr(YES)}\right\}$$

where "YES" is the variable that indicates whether the respondent would vote for the program. For this analysis, YES is assumed to equal one if (a) respondents answered "for" on the CV question (C-2) and (b) answered "somewhat sure" or "very sure" on the follow-up to assess the certainty of their "for" vote (question C_2_FR_C). Conversely, YES is assumed to equal zero if respondents answered "against," "not sure" or left the CV question blank, or if they indicated they would vote "for" the program but were "neither sure nor unsure," "somewhat unsure," "very unsure" or left the follow-up question blank. In addition, the data were weighted using the Knowledge Networks post-stratification weights (Appendix A) to accurately reflect the population of Florida.

Table 2-4 shows the weighted responses at each bid value and the number and proportion of respondents that voted "for" the program at each bid value after the votes were modified by the follow-up question as described (YES = 1).

Table 2-4. Distribution of weighted responses for the YES variable by bid value ($)

Bid value	Number of weighted responses	Number and share of weighted responses for those willing-to-pay the bid value (YES = 1)	
		Number (N)	Share (%)
$10	245.4	152.5	62.1%
$45	305.5	170.7	55.9%
$85	235.3	116.0	49.3%
$135	219.3	120.0	54.7%
$185	209.0	97.2	46.5%
$235	197.2	79.3	40.2%
$285	204.4	95.9	46.9%
$385	221.0	79.9	36.1%
Total	1,837.0	911.5	

Notes: The numbers of responses are not whole due to the use of the Knowledge Networks stratification weights. The totals may not equal the sums of the individual numbers due to rounding.

The logit model estimated in this analysis included eight independent variables: two variables to capture bid and scope sensitivity previously described and six others designed to capture other attitudinal, behavioral, and socio-economic variables expected to influence a respondents' vote that without which would result in omitted variable bias. In order to prevent the possibility of estimating spurious relationships, the number and mix of the additional variables were limited (Bennett, Morrison, and Blamey, 1998). The following model was specified

$$\mathrm{Ln}\left\{\frac{pr(YES)}{1-pr(YES)}\right\} = \beta_0 + \beta_1 \mathrm{Ln}(BID) + \beta_2 SCOPE + \beta_3 CONSEQ$$

$$+\beta_4 CONFID + \beta_5 REAS + \beta_6 AGE + \beta_7 VISIT + \beta_8 INCOME$$

where the details on how each independent variable was coded are described in detail below but are briefly defined as follows:

- Ln(BID) is the natural log of the bid value (one-time required payment, $Z) in the CV question (C_2)
- SCOPE is the perceived effectiveness of the program (share of coastline protected from damages and share of dead animals reduced as estimated by scientists, X%) in the CV question as modified by respondents' opinion of program effectiveness from question C_5, which resulted in the inclusion of a 0% level
- CONSEQ is how respondents believed the survey results would affect policy decisions from question C_8

- CONFID is how much confidence respondents have in the ability of the federal government to reduce the impacts from oil spills from question C_9
- REAS is whether and how strongly respondents feel about the reasonableness of the proposed program to reduce damages from another large spill, which was assessed before respondents were asked to vote, from question B_6
- AGE is the respondents' age in years
- VISIT indicates whether the respondent had recently visited the Gulf of Mexico for saltwater-related recreation from question A_3, which can be used to separate passive use values from active use values
- INCOME is the respondents' annual household income.

The construction of the SCOPE variable to capture the perceived effectiveness of the program for each respondent began with the randomly assigned program effectiveness level, X% (i.e., 20%, 45%, 70%, or 90%). This level is, however, unable to completely capture the scope of the program as perceived by respondents since respondents were (a) told that the environmental damages reported following the spill were difficult to measure, which raises uncertainty about the accuracy of estimating damages following the next spill that is central to the valuation question and (b) respondents were told that there were other programs that differed in how effective they were expected to be and shown a figure that compared the four levels (X%), including 0% (no program). To account for how effective the respondents believed the program would be, we later asked the following question (C_5):

> Scientists estimate that the program you evaluated would reduce the environmental impacts by **[X%]** from another large oil spill in the Gulf of Mexico. Do you believe the proposed program would be . . .
>
> - A lot more effective than stated
> - Somewhat more effective than stated
> - About as effective as stated
> - Somewhat less effective than stated
> - A lot less effective than stated
> - Not sure

Responses to C_5 were used to create a new variable, SCOPE, which represented the effectiveness level of the program as perceived by respondents. This was accomplished by first setting SCOPE equal to X%, the effectiveness of the program presented to each respondent. Then, the percentage was increased one level if respondents thought the program would be "somewhat more" effective than stated and two levels if respondents thought the program would be "a lot more" effective than stated. The maximum level of

perceived effectiveness was capped at 90% (e.g., respondents seeing 70% but believing it to be "a lot more effective" were set to the maximum level). Conversely, the percentage was decreased one level if respondents thought the program would be "somewhat less" effective than stated and two levels if respondents thought the program would be "a lot less" effective than stated. The minimum level of perceived effectiveness was 0% (e.g., respondents seeing 20% but believing it to be "a lot less effective" were set to the minimum level).

Table 2-5 shows the effectiveness level that was randomly assigned to each respondent (X%) in the first column and the corresponding level of the new perceived effectiveness variable (SCOPE) based on each respondent's answers to the follow-up question C_5. As the table shows, if respondents thought the program effectiveness was overstated, their perceived effectiveness (SCOPE) variable value was lower than the X% they were randomly assigned. On the other hand, if respondents thought that program effectiveness was understated, their SCOPE variable values were higher than the assigned X%.

Table 2-5. Calculation of perceived effectiveness variable (SCOPE)

Program Effectiveness [X%]	Respondents opinion about stated effectiveness [X%], SCOPE				
	A lot less effective	Somewhat less effective	About as effective/ Not Sure	Somewhat more effective	A lot more effective
20%	0%	0%	20%	45%	70%
45%	0%	20%	45%	70%	90%
70%	20%	45%	70%	90%	90%
90%	45%	70%	90%	90%	90%

The frequency results for the new perceived effectiveness variable (SCOPE) are shown in Table 2-6. In summary, 4.7 percent of respondents did not perceive the program to be effective at all (0% effective). An additional 20 percent perceived the effectiveness of the program to reduce environmental damages from another similar oil spill by one-fifth (20% effective). The remaining respondents were split between believing the program would be 45%, 70%, or 90% effective. That said, this relatively even distribution of responses across bid levels is due, in part, to the fact that respondents were randomly assigned to one of the four positive effectiveness levels to begin with.

Table 2-6. Weighted frequency distribution for new perceived effectiveness variable (SCOPE)

	Levels of perceived effectiveness (SCOPE)					Total
	0%	20%	45%	70%	90%	
Number (N)	86.3	369.2	448.2	479.4	453.7	1,837.0
Share (%)	4.7%	20.1%	24.4%	26.1%	24.7%	100.0%

Notes: The numbers of responses are not whole due to the use of the Knowledge Networks stratification weights. The totals may not equal the sums of the individual numbers due to rounding.

The next three variables in the model were measured using five-point Likert scales (CONSEQ, CONFID, and REAS). The responses were coded such that the central (neutral) response was 0 and responses ranged from −2 to 2 (the "2" values were associated with extreme qualifiers such as "very" or "strongly" and the "1" values were associated with "somewhat" as a qualifier). For all questions, a "not sure" response was assigned the neutral response code.

The CONSEQ variable was the result of an attempt to remind respondents of their budget constraint, potential substitute expenditures, and the fact that their vote could affect their federal taxes (convince respondents of the consequences of their vote to their household budgeting). To that end, the following statement was included in the survey immediately before the CV question:

> Lastly, also consider your personal income and current payment obligations, including any recent or planned contributions to other environmental causes. Also remember that the cost of the program could result in your household paying instead of receiving a refund, your household paying more taxes, or your household receiving a lower refund.

To address consequentiality we investigated whether respondents believed their responses to the survey could impact policy decisions, which recent literature has shown to be important for valid responses (e.g., Herriges et al., 2010; Carson and Groves, 2007). More importantly, Landry and List (2007) found that consequential design had the largest impact on attenuating hypothetical bias (meaning that responses from a consequential referendum are not distinguishable from those in a real referendum) as compared to the use of cheap talk script or a purely hypothetical protocol.

Testing for consequentiality, therefore, amounts to determining if respondents believe that their responses to survey questions will affect policy decisions, which should lead to more thoughtful responses. In order to test for consequentiality, C_8 asked:

Please indicate your disagreement or agreement with the following statement:

"I believe the results of this survey will affect decisions about oil monitoring and cleanup by the U.S. Coast Guard in the Gulf of Mexico."

The results, presented in Table 2-7, show that a weighted majority of respondents, 55.2 percent (36.4% somewhat and 18.8% very), believed the survey results would affect decisions about oil monitoring and cleanup by the U.S. Coast Guard in the Gulf of Mexico (CONSEQ). Although 35.2 percent of respondents were unsure of the impact the survey would have, only 9.5 percent felt the survey results would have little or no impact. These results add further validity to the results presented in the next section by demonstrating that survey respondents, on average, felt that their responses would impact policy.

Table 2-7. Distribution of weighted responses for CONSEQ, CONFID, and REAS variables

Response	Number (N) and Share (%)		
	CONSEQ (question C_8)	CONFID (question C_9)	REAS (question B_6)
Very negative	48.1 (2.6%)	244.5 (13.3%)	132.8 (7.2%)
Somewhat negative	127.3 (6.9%)	401.4 (21.9%)	204.6 (11.1%)
Neutral	647.0 (35.2%)	484.2 (26.4%)	372.5 (20.3%)
Somewhat positive	668.5 (36.4%)	586.2 (31.9%)	704.7 (38.4%)
Very positive	345.9 (18.8%)	120.7 (6.6%)	422.1 (23.0%)
Total	1,837.0 (100.0%)	1,837.0 (100.0%)	1,837.0 (100.0%)

Notes: The numbers of responses are not whole due to the use of the Knowledge Networks stratification weights. The totals may not equal the sums of the individual numbers due to rounding. CONSEQ asked about respondents' level of agreement with a statement about whether the survey results will impact policy. CONFID and REAS asked respondents about their level of confidence in the federal government to address oil spills and the reasonableness of the proposed program, respectively. "Not sure" responses are considered as "Neutral."

Table 2-7 also contains the summary of responses to the CONFID and REAS variables. Results indicate that the majority of respondents (61.4%) thought the proposed program used in the CV questions was at least somewhat reasonable, but only 38.5 percent were at least somewhat confident of the federal government's ability to address oil spills in the Gulf of Mexico. Approximately 20 percent of respondents were unsure of whether the program was reasonable and 26.4 percent were not sure of their confidence in the federal government for the purpose stated. Compared with the relatively low number of negative responses (9.5%) on CONSEQ, which captured whether respondents thought the results of this survey would affect policies pertaining

to future oil spills in the Gulf, 35.2 percent and 18.3 percent reported at least somewhat negative responses pertaining to the confidence in the federal government for the purpose stated and the reasonableness of the proposed program, respectively.

The survey was designed to focus respondents only on the environmental impacts using wording such as the following:

> This survey effort is focused only on the environmental impacts. We have other efforts underway to estimate other human impacts that may have resulted from the oil spill—such as recreation, tourism, jobs and human health. While all of these may be very important to you, *the purpose of this survey is to determine only how much people care (if at all) about how the environment was affected by the oil spill*.
>
> **Because we have other research efforts underway, please try to focus only on the environmental impacts from oil spills in your responses to the questions that follow.**

Although the survey focused on environmental effects of the spill and did not specifically discuss how Gulf of Mexico recreational activities were affected, it is possible that some respondents considered these activities in their voting decision. To account for active use values that may be included in the estimation of passive use values, question A_3 asked: "During the past 12 months, about how many days have you spent at coastal areas on the Gulf of Mexico for saltwater-related recreation (e.g., going to a beach, saltwater fishing, boating)?" The response choices were as follows: never, 1 to 6 days, 7 to 11 days, 12 to 17 days, and 18 or more days. This variable was coded as a dummy variable in order to produce results comparable to the Turnbull method; respondents were coded as a 0 if they answered never to question A_3 and 1 if they fell into one of the other four response categories. Table 2-8 summarizes the dummy variable (VISIT). Nearly 40 percent of respondents had not visited a coastal area along the Gulf of Mexico for saltwater-related recreation in the previous 12 months.

Table 2-8. Distribution of weighted responses for the VISIT variable

	Levels of VISIT Variable		Total
	Non-visitor (VISIT = 0)	Visitor (VISIT = 1)	
Number (N)	726.7	1,110.3	1,837.0
Share (%)	39.6%	60.4%	100.0%

Note: Visitor status was based on the answer to question A_3 that asked for the number of days spent at coastal areas for saltwater-related recreation in the past 12 months. The unweighted average of the VISIT dummy variable was 64.5 percent.

The INCOME variable measured the respondents' annual household income. This information was collected by Knowledge Networks and was provided in a closed-ended response format that included 19 ranges from "$0 to $4,999" through "more than $175,000." For the analysis, respondent income was assumed to be at the midpoint of their income range (e.g., $2,500 for range 1). For the highest category (more than $175,000), income was assumed to be $175,000. INCOME values were divided by 1,000 for the analysis. Table 2-9 summarizes the weighted distribution of the INCOME variable ranges and the values used in the analysis.

Table 2-9. Distribution of weighted responses for the INCOME variable

	INCOME Variable		
Annual household income (PPINCIMP variable)	Levels ($1,000)	Number (N)	Share (%)
1. Less than $5,000	$2.50	54.2	3.0%
2. $5,000 to $7,499	$6.25	42.6	2.3%
3. $7,500 to $9,999	$8.75	47.2	2.6%
4. $10,000 to $12,499	$11.25	52.5	2.9%
5. $12,500 to $14,999	$13.75	59.2	3.2%
6. $15,000 to $19,999	$17.50	124.4	6.8%
7. $20,000 to $24,999	$22.50	158.9	8.7%
8. $25,000 to $29,999	$27.50	147.0	8.0%
9. $30,000 to $34,999	$32.50	132.1	7.2%
10. $35,000 to $39,999	$37.50	118.9	6.5%
11. $40,000 to $49,999	$45.00	217.3	11.8%
12. $50,000 to $59,999	$55.00	135.2	7.4%
13. $60,000 to $74,999	$67.50	200.4	10.9%
14. $75,000 to $84,999	$80.00	104.7	5.7%
15. $85,000 to $99,999	$92.50	92.4	5.0%
16. $100,000 to $124,999	$112.50	80.8	4.4%
17. $125,000 to $149,999	$137.50	31.8	1.7%
18. $150,000 to $174,999	$162.50	13.4	0.8%
19. $175,000 or more	$175.00	23.9	1.3%
Total		1,837.0	100.0%

Notes: The numbers of responses are not whole due to the use of the Knowledge Networks stratification weights. The totals may not equal the sums of the individual numbers due to rounding.

To test for bid and scope effects in this study, we observe whether the probability of a YES response is positively correlated with the following two variables: (1) bid value, and (2) program scope (level of effectiveness), respectively. In other words, the coefficients on

Ln(BID) and SCOPE are hypothesized to be negative and positive, respectively, and statistically significant. If so, the associated estimates of lost passive use value are said to be internally valid.

Results

The model explaining the probability of a YES response was estimated using the STATA 9.2 software with 1,837 weighted observations. The results are presented in Table 2-10. The results show that all independent variables were statistically significant at the 0.01 level (highly statistically significant) with effects on YES (likelihood of voting for the program by those somewhat or very sure) as expected.

Table 2-10. Logit model variable means and estimation results

		Parameter estimates and statistical significance			95% Confidence Interval of β_i	
Measure	Mean	Coefficient (β_i)	Std. Err.	t-stat	Lower Bound	Upper Bound
Variable:						
Intercept	N/A	−1.434	0.480	−2.99	−2.376	−0.492
Ln(BID)	4.68	−0.330	0.074	−4.48	−0.474	−0.185
SCOPE	55.32	0.008	0.003	2.73	0.002	0.014
CONSEQ	0.63	0.497	0.100	4.98	0.301	0.692
CONFID	-0.12	0.220	0.072	3.08	0.080	0.360
REAS	0.56	0.774	0.087	8.91	0.604	0.945
AGE	53.38	0.017	0.005	3.22	0.007	0.027
VISIT	0.65	0.611	0.168	3.63	0.281	0.941
INCOME	54.64	0.011	0.002	5.19	0.007	0.015
Model statistics:						
Strata			1			
Observations			1,837			
Design d.f.			1,836			
F(7, 1991)			21.50			
Prob > F			0.000			
Correct predictions (%)			74.5			

Notes: N/A indicates the mean is not applicable to this variable. The number of observations (N) equaled the number of PSUs and the population. Those respondents who refused to answer any of the following questions: A_3, B_6, C_2, C_2_FR_C, C_5, C_8, or C_9 were excluded from the model. Those who checked response 'b' for C_2_AG_B_B or answered 0% for C_3 were also excluded from the model. Those who answered "not sure" to B_6, C_5, C_8, or C_9 were coded with the neutral answer for each: "Neither reasonable nor unreasonable" (B_6), "About as effective as stated" (C_5), "Neither disagree nor agree" (C_8), and "Neither unconfident nor confident" (C_9).

Each of the following increased the probability of a YES response: belief that the survey results would impact government policy (CONSEQ), confidence in the federal government (CONFID), trust in the reasonableness of the mitigation program (REAS), the age of the respondent (AGE), participation in saltwater-related recreation in Gulf of Mexico coastal areas over the last 12 months (VISIT), and income (INCOME).[12] Conversely, higher bid values (the level of the one-time federal income tax payment, Ln(BID)) were found to reduce the likelihood a respondent would be willing to pay.

In summary, these results validate the meaningfulness of the passive use loss estimates calculated in the next section. The respondents' belief that their answers would impact federal policy (CONSEQ) demonstrates that they felt this survey was important so they provided thoughtful responses. The regression results clearly show sensitivity to bid and scope (amount of environmental protection provided) due to the signs and statistical significance of the Ln(BID) and SCOPE, respectively. These results indicate that respondents' votes on the program proposed in the CV question conform to theoretical expectations by being inversely correlated with the cost to their household and directly correlated with the perceived effectiveness of the program.

Estimation of Lost Passive Use Value at the Household Level

Description

Estimates of lost passive use value on a per household basis were calculated using two different techniques. The first technique is known as the "Turnbull lower bound mean" approach (Turnbull, 1976). The Turnbull technique is a non-parametric approach designed to generate a conservative estimate of household willingness-to-pay (WTP), in dollar value, for the proposed program. The measure is calculated based on comparing the ratio of "against" responses (i.e., YES = 0) at successive bid levels. For instance, in the current study, the lowest two bid values randomly assigned to respondents were $10 and $45. The shares of "against" responses were 15 percent and 26 percent, respectively, at these two bid levels for those respondents evaluating the program with the 90% effectiveness level.[13] The Turnbull calculation assumes that 15 percent of respondents had a WTP of $0 and 11

[12] The models were re-estimated using a dummy variable to identify the positive responses (1 and 2) to CONSEQ, CONFID, and REAS versus the −2 to 2 range (Table 2-7). The resulting variables remained statistically significant at the 0.001 level but produced higher WTP estimates ($151.81 for non-users and $722.38 for users). These results are not presented since we recommend using the non-parametric results.
[13] Since the Turnbull WTP estimate is calculated using only responses associated with the 90% effectiveness level (i.e., N = 491), the shares do not match those reported from all bid levels in Table 2-4.

percent had a WTP of $10, the difference between the 26 percent unwilling to pay $45 and the 15 percent unwilling to pay $10.[14]

The Turnbull estimate is said to provide a lower bound estimate of the mean willingness-to-pay (WTP) value due to the lack of interpolation between bids. In the calculation noted above, it is possible that some of the respondents who were randomly selected for the $10 bid level would have been willing to pay some value between $0 and $10; and some of the those unwilling to pay $45 would have been willing to pay more than $10.

The formula used to generate the WTP measure with the Turnbull approach,

$$\text{Turnbull (non-parametric) WTP} = \sum_{j=0}^{8} BID_j\left(N_{j+1} - N_j\right),$$

is calculated using the bid level (BID_j) and the percentage of "against" responses to the bid (N_j), where YES = 0. In this case, j indexes the bid levels that include $0 (j = 0 corresponds to $0, j = 1 corresponds to $10, … j = 8 corresponds to $385). The Turnbull WTP measure was calculated, as is standard procedure, with the assumptions that $N_0 = 0$ and $N_9 = 1$, meaning all respondents would be for the program if it were free and no respondent would be willing to pay more than $385 for the program. For those instances where $N_{j+1} < N_j$, N_{j+1} is pooled back by combining N_j and N_{j+1} and multiplying by BID_{j-1}, then N_{j+2} is multiplied by BID_j.

The second WTP estimate was calculated using a parametric approach with the results from the model shown in Table 2-10. Using the logistic model specification yields a median WTP per household.[15] This approach uses the estimated marginal effect of the perceived effectiveness variable (SCOPE) and then sets SCOPE equal to the 90% effectiveness level for the entire sample to calculate the WTP as

$$\text{Parametric WTP} = \exp\left(\frac{\alpha}{-\beta_1}\right)$$

where β_1 is the estimated coefficient on Ln(BID) and α is the "grand constant," or the sum of the effects of the remaining variables in the equation. The grand constant is calculated by summing the products of the coefficients and their associated mean values, with two exceptions. First, we set the SCOPE to 90% in order to capture the highest level of benefits to match the damage from the *BP/Deepwater* Horizon oil spill. Second, we assume different

[14] Since respondents are randomly selected to receive different bid values it is possible that WTP is not a decreasing function of bid value over all intervals for smaller samples. When the ratio of "against" responses (i.e., YES = 0) is not strictly monotonically increasing in bid value, as was the case in the current study, a pooling back technique is used. This technique is outlined in Haab and McConnell (2002).
[15] The details of the calculation, including formulas, can be found in Haab and McConnell (2002).

values for the VISIT variable in order to examine the sensitivity of the WTP estimate with respect to past coastal visitation and to obtain a more accurate estimate of passive use values only.[16]

The parametric approach is less conservative than the Turnbull approach in that it considers WTP amounts above the maximum bid value included in the survey and estimates WTP based on how the independent variables influence WTP over the entire sample.

Results

This study used a stringent definition of what constituted a "yes" response[17] in order to provide conservative estimates of lost passive use value as recommended by the NOAA Blue Ribbon Panel. The use of stringent criteria to define the YES variable for generating the Turnbull WTP estimate is also expected to yield a WTP estimate that more closely matches an actual cash payment due to previous research (Blumenschein et al., 1998). In addition, only those respondents who had a perceived effectiveness variable (SCOPE) value of 90% were included in the Turnbull calculation. This decision was made in order to provide WTP estimates that most closely measured the passive use losses caused by the *BP/Deepwater Horizon* oil spill. Ideally the oil spill mitigation program would have been an oil spill prevention program (100% of damages avoided to match pre-spill conditions), but focus group results showed that respondents found the mitigation program used in this study as more believable. The problem with a mitigation program is that while it is more believable, it is reactionary and requires some environmental damage to occur. By only including those respondents with the highest perceived level of effectiveness (i.e., 90%), the Turnbull WTP calculation will most closely approximate the total passive use losses while still providing a believable scenario for respondents to value. As a result, 461 responses were used in the calculation of the Turnbull lower bound mean on WTP.

With these assumptions, the Turnbull lower bound mean estimate of WTP was estimated to be $110.26 per household, with a standard error of $4.30. The 95 percent confidence interval on the estimate was $101.83 to $118.68.[18] For comparison, the corresponding median WTP estimate from the parametric model in Table 2-10 (i.e., with the SCOPE variable set equal to 90% and all other variables set equal to their means) was $319.74, with a 95 percent confidence interval of $147.38 to $1,102.41. As expected, the parametric

[16] Replacing the means with the highest values of CONSEQ, CONFID, and REAS to reflect an effective survey design would increase the estimated WTP values, which would provide a less conservative estimate of losses.
[17] Only "for" votes by respondents that were either "somewhat sure" or "very sure" of their vote were coded as willing to pay in the discrete YES variable (i.e., YES = 1).
[18] The 95 percent confidence interval was calculated using the Krinsky and Robb approach (1986) for the sample with the perceived effectiveness variable set equal to 90%.

approach that is more sensitive to modeling assumptions generated a much higher WTP and much wider confidence interval.

These results are representative of all respondents, including those who indicated that they had visited the Gulf coast for saltwater-related recreation within the last year. In order to account for the potential inclusion of active use values, both the parametric and non-parametric approaches were used to calculate WTP for Gulf "users" versus "non-users." For both calculations, the Turnbull and the parametric measure, the VISIT variable was used to separate passive use valuations from any active use values respondents might associate with Gulf of Mexico recreational activities. This is accomplished in the Turnbull calculation by estimating WTP separately for those who did not take part in saltwater-related recreational activities in the Gulf of Mexico and for those who did (VISIT = 0 and VISIT = 1, respectively). The same task is accomplished in the parametric estimate of WTP by performing the calculation with the VISIT variable set equal to zero for "non-users" and then set equal to one for "users." Table 2-11 summarizes all the WTP estimates and their respective confidence intervals.

Table 2-11. Household-level (hh) passive use value loss estimates from the *BP/Deepwater Horizon* oil spill by method and type of respondent

Method		Lost PUV ($/hh)	95% Confidence Interval ($/household)	
Respondents	N		Lower Bound	Upper Bound
Turnbull:				
All	461	$110.26	$101.83	$118.68
Non-users	170	$115.08	$94.87	$135.29
Users	291	$131.11	$120.24	$141.98
Parametric:				
All	1,837	$319.74	$147.38	$1,102.41
Non-users	1,837	$96.77	$32.73	$288.81
Users	1,837	$617.17	$252.13	$3,262.65

Notes: "Users" and "Non-users" are defined with the VISIT variable where VISIT = 0 reflects no visits to the Gulf of Mexico for saltwater-related recreation in the past year and corresponds to "non-users". VISIT = 1 represents those taking at least one trip (i.e., "users"), but all lost PUV estimates use the entire sample so the only difference is VISIT. The Turnbull estimates are higher with the split samples since the split samples pooled differently; the full sample estimate would only fall between the split sample estimates (and thus reflect a weighted average) if the pooling algorithm were identical. See text for further discussion.

When the VISIT variable was accounted for in the Turnbull calculations, separating those who took part in saltwater-related recreation in the Gulf of Mexico in the prior 12 months from those who did not, the WTP estimate changed only slightly for non-users but increased for users and the standard errors on both increased. The Turnbull estimate for

"non-users" (those with a VISIT value of 0) was $115.08, with a 95 percent confidence interval that ranged from $94.87 to $135.29. The Turnbull estimate for "users" (those with a VISIT value of 1) was $131.11, with a 95 percent confidence interval ranging from $120.24 to $141.98.[19]

The Turnbull WTP values for Non-users and Users are both higher than the WTP value for the full sample (All) because the percentage of "no" responses to the WTP question did not strictly increase with bid value for the three samples. This lack of monotonicity required use of a "pooling back" technique (see footnote 14) in the WTP calculations for all three samples, applied as described in Haab and McConnell (2002). Due to the weighting of responses the three samples required pooling back at different bid values which led to both the Non-user and User WTP values being higher than the full sample (All).

Using the parametric approach, the estimated WTP declined by approximately two-thirds for non-users and roughly doubled for users. The parametric estimate of median household WTP for non-users was $96.77, with a 95 percent confidence interval of $32.73 to $288.81. For comparison, the parametric estimate of median household WTP for users (those visiting the Gulf for saltwater-related recreation in the previous 12 months) was $617.17, with a 95 percent confidence interval of $252.13 to $3,262.65.

Total Lost Passive Use Value

The total lost passive use value (PUV) is determined by multiplying an estimate of WTP at the household level by the number of households in the population of interest. In this study, the WTP estimate reflects the value that Floridians have for avoiding another (similar) oil spill in the Gulf of Mexico and the corresponding damage to the environment, which was defined as miles of oiled coastline and deaths of birds, fish, and marine mammals. In order to obtain more conservative and reliable estimates, respondents who were unsure of their willingness-to-pay, protested against the payment vehicle or might have been unable to pay the amount asked of them were retained and counted as "no" responses on the WTP question. In order to isolate passive use values, and despite efforts to focus respondents on environmental damages, it was necessary to account for potential active use values that respondents may have for the resource and that may have inadvertently been included in their responses. With the resulting data, and after sufficient tests for validity were conducted, several conservative estimates of WTP were obtained. The most appropriate WTP estimate is that generated from the non-parametric approach in order to avoid the need to rely on numerous assumptions that necessarily affect WTP

[19] While higher WTP estimates from the sub-samples may seem unexpected, it was caused by the need to backward pool the responses (recall there were eight bid values and results were not strictly increasing, which is not uncommon) and not the statistical weights generated by Knowledge Networks.

estimates generated from the non-parametric approach. Thus, using the Turnbull estimate for non-users of $115.08 per household and the number of Florida households of 7,420,802 (U.S. Census Bureau, 2011) provides a total passive use loss estimate for the State of Florida due to the *BP/Deepwater Horizon* oil spill of $853,985,894. The corresponding 95 percent confidence interval of this estimate ranges from $704.0 million to $1,004.0 million. For comparison, the Turnbull estimate for all respondents was slightly lower ($818.2 million versus $854.0 million) and had a narrower confidence interval due to the use of more observations (i.e., $755.7 million to $880.7 million).

Summary and Conclusions

The goal of this study was to provide reliable, conservative, and defensible estimates of the passive use losses suffered by Floridians due to the 2010 *BP/Deepwater Horizon* oil spill. The first major task to accomplish this goal was to develop a questionnaire (Appendix B) that adhered to several standard principles resulting from both a NOAA Blue Ribbon panel and state-of-the-art recommendations from recent peer-reviewed literature on the contingent valuation methodology. This task involved numerous focus groups and field tests as well as an external review by experts. The Supplement contains all focus group materials and copies of the transcripts.

The second major task to accomplish this goal was the implementation of the survey. In this study, we employed the services of Knowledge Networks, Inc., which includes use of their *KnowledgePanel*®. The resulting data is representative of the population of Floridians due to several measures taken by Knowledge Networks, including surveying of respondents whose primary language is Spanish and the generation and use of survey-specific pre- and post-stratification weights (Appendix A).

The third major task involved assumptions regarding the data. In particular, assumptions that would generate more conservative (i.e., lower) estimates of lost PUV were adopted where possible. These include the use of a stringent definition of whether respondents would vote "for" the CVM referendum question (i.e., would vote YES) and the valuation of a mitigation program that only values 90% of the damages associated with another large oil spill similar to the *BP/Deepwater Horizon* oil spill. WTP estimates were calculated with those who reported having little, if any, trust in the federal government to manage future oil spills in the Gulf of Mexico and other protest responses (such as to the bid vehicle or due

to an income constraint).[20] In addition, the estimates calculated only passive use values by explicitly accounting for respondents who used Gulf of Mexico coastal areas for saltwater-related recreation in the previous 12 months. In other words, WTP estimates were adjusted to remove active use values.

The fourth major task involved generating the estimates of lost PUV to Floridians from the *BP/Deepwater Horizon* oil spill. This task involved first testing the data for internal validity, generating estimates of WTP (the average dollar value that a representative household would be willing to pay to prevent similar environmental damages), and extrapolating these values to the population of interest (Florida households). After testing for internal validity (responses were sensitive to both the level of payment and perceived effectiveness of the program) and checking for consequentiality (that the majority of respondents thought the survey results would affect future policies on oil spills in the Gulf), two approaches were used to estimate WTP. The non-parametric Turnbull "lower bound" approach generated an estimate of $818.2 million, with a 95 percent confidence interval that ranged from $755.7 million to $880.7 million. Eliminating use values (values that respondents may have included for active, recreational use of the Gulf) raised the point estimate slightly to $854.0 and widened the confidence interval to range from $704.0 million to $1,004.0 due to the use of fewer observations in the calculation. The parametric approach generated an initial estimate of lost PUV of approximately $2.4 billion, with a relatively wide 95 percent confidence interval ranging from $1.1 billion to $8.2 billion. Eliminating use values from the parametric WTP estimate lowered the lost passive use value estimate to $718.1, million with a 95 percent confidence interval that ranged from $242.9 million to $2.1 billion; note that this confidence interval overlaps that generated by the lower bound Turnbull approach.

The Turnbull estimate is traditionally considered the more reliable estimate of lost PUV compared to multivariate analyses because the non-parametric Turnbull method of calculating WTP (1) is not sensitive to the choice of explanatory variables, (2) does not require the specification of a functional form (relationship between variables), (3) is less sensitive to the choice of a distribution, and (4) has a narrower confidence interval. As a result, in our opinion, the most defensible estimate of lost PUV to Floridians as a result of the *BP/Deepwater Horizon* oil spill is the conservatively estimated Turnbull value associated with non-users of the Gulf, which is $854.0 million.

[20] Recall that those voting "against" the program or who were not sure were asked if they would be willing to pay a lower amount; 32 percent were. It is also notable that nearly two-thirds of those were asked to vote on a program that would cost them at least $185. The parametric approach can be used to address this issue, but it further complicates the analysis (Haab, 1999), which is another reason that the non-parametric result is preferred for this type of study.

This study estimated the lost passive use value associated with the *BP/Deepwater Horizon* oil spill to Florida households in the year following the spill but did not investigate the reasons for the vote or the nature of protest responses, including the ability of respondents to pay. One of the interesting features of the CVM, however, is that it allows for the creation of a valuation function (i.e., model estimated in Table 2-10). Beyond simply assessing internal validity and calculating WTP (lost PUV at the household level), the valuation function is an econometric tool that allows respondent WTP estimates to be related to respondent characteristics (Carson et al., 2003). This tool allows for a more detailed analysis of WTP estimates and the ability for researchers to determine what respondent characteristics affect WTP. The implication is that for this study, it may be possible to correlate lost passive use values or lost non-market values (e.g., active use values) with other variables in the survey. Examples of such variables could include the number of children in the household or whether their response was based on wanting to preserve the environmental resource for future generations. Given that the State of Florida has invested significant resources in an attempt to "brand" the state for the benefit of both residents and visitors, attempting to estimate the change in consumer surplus associated with factors that reflect the effects of branding (as noted by Voegele and Sedimayr, 2007) is a task that could be pursued. Results could be correlated with, for example, regional-level expenditures on branding activities.

3: Study 2a (Lost Recreational Use Value)

John C. Whitehead, Timothy C. Haab, and Sherry L. Larkin

Executive Summary

Overview

The lost recreational use values (RUV) from the *BP/Deepwater Horizon* oil spill in the Gulf of Mexico that began April 20, 2010 were evaluated for cancelled recreational trips to affected coastal counties in Northwest Florida: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, Wakulla, Jefferson, Taylor, Dixie, and Levy (i.e., the study region). The impacts were calculated using two economic valuation techniques—the travel cost method (TCM), for single and multiple sites, and the contingent valuation method (CVM)—with primary data collected from surveys and household population estimates from the U.S. Census. The primary data were collected August – September 2011 through Knowledge Networks, Inc., with respondents residing in 13 U.S. states that constitute the primary market for coastal tourism to Northwest Florida.[21] The survey gathered information from 2,181 respondents on their recreational visits to the Gulf of Mexico and South Atlantic coastal areas, including detailed information on their most recent trip, past trips, planned future trips, and the number of trips cancelled to the study region due to the oil spill. This information was compared to data obtained from personal interviews of 2,540 visitors to the main beach areas in the study region to confirm the market area and share of visitors accounted for in the resulting estimates.

The empirical analysis involved the estimation of a number of models, including (1) single-site demand functions for recreational trips to the study region, (2) probability-based models of respondents' willingness-to-pay (WTP) higher trip costs, and (3) multiple-site choice random utility models (RUM). The primary variable in each of these models is the travel costs between a visitor's home and the destination site, measured using distance and time (per mile travel costs and the opportunity costs of time and, in some models, the reported transportation and lodging costs). A visitor-reported site quality variable is also important. Each model was estimated with different groups of the sample data and

[21] The need to conduct a survey for use in estimating both lost RUV to Florida residents and foregone recreational expenditures by non-Florida residents for Study 2b (Chapter 4) necessitated defining a non-Florida market area. In addition, a correctly specified model of the demand for recreational trips to the study region rightly contains information from respondents in the entire market area, using dummy variables to isolate values for a sub-market of interest (in this case, Florida residents outside the study region).

explanatory variables, and each produced unique estimates of lost consumer surplus to Florida households, the measure of economic value on which to assess lost RUV.

These economic theory-based estimates of lost economic activity are suitable for use in the claiming process against parties responsible for the *BP/Deepwater Horizon* oil spill but do not constitute a comprehensive estimate of losses to Floridians or the State of Florida due to the methodology employed and focus on visitors to the study region, which included just 12 coastal counties in Northwest Florida.

Overview of Economic Value Methodology

In general, it is challenging to assign a monetary value to recreation since the benefits vary between users, and the methodologies that can be used to measure these benefits are often expressed in different units. For example, some users may value the health benefits while others are simply interested in enjoying the view. Using dollars as a standard unit of recreational value has the positive attribute of relying on the concept of consumer surplus, which provides a conceptual basis that is standard among market goods.

The value that individuals have for participation in saltwater-related activities is reflected by the number of times they choose to participate. The value of this participation is captured in the demand individuals have for the recreational trips that provide the experience. The recreational demand function reflects the maximum amount that individuals are willing to pay for each trip. All other factors being equal, the lower the cost per trip, the more trips individuals are assumed to take. The cost per trip thus serves as the implicit price for the activity since a market price does not exist.

Individuals' total willingness to pay for all trips over the course of a year is comprised of their expenditures (trip costs) and net economic value (consumer surplus); net economic value is total willingness to pay reduced by expenditures. In this application, the "consumers" are individuals who are essentially buying recreational trips. Summing the consumer surplus values of all participating individuals generates the net economic value to society. In the case of evaluating the impacts of the oil spill, we estimate the change in consumer surplus that was caused by the spill.

This report estimates lost "use values"—a change in one component of what is known as Total Economic Value—from affected recreational trips. These are losses to past and potential visitors to the study region (both Florida residents and residents of a dozen nearby states) from an affected coastal Gulf environment. Two types of techniques are used to estimate and corroborate these losses: the *travel cost approach* and the *contingent valuation approach*. The former technique (the travel cost approach) is known as a *revealed*

preference approach where data from a related market are used to infer economic values of a related good. The latter (contingent valuation approach) is a non-market valuation method and is also known as a *stated preference approach*. Use of these techniques to evaluate the effects of the *BP/Deepwater Horizon* oil spill requires information from past and potential visitors. Both techniques have been approved for estimating the costs of environmental damages under the provisions of CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act), which established the legal right of natural resource trustees to collect damages from parties responsible for release of hazardous materials into publicly-owned waters.

Summary of Results

- Two secondary data sources were used to determine the market area for coastal recreation in the study region (i.e., 12 coastal counties in Northwest Florida). The first was *VISIT FLORIDA*®, which was able to provide the distribution of overnight non-Florida visitors by state. The second was the Marine Recreational Fisheries Statistics Survey (MRFSS) program that contains the home ZIP code of intercepted anglers in the study region. Using data for 2009 from both sources, we were able to define a 13-state market area (including Florida) that has accounted for approximately 89 percent of visitation to the study region. The market area includes the states of Georgia, Alabama, Tennessee, Louisiana, Texas, Missouri, Mississippi, Kentucky, Arkansas, Ohio, Indiana, Illinois, and Florida. This market area definition was confirmed by an independent sampling of beach visitors as part of this study.
- Using primary data collected from 2,181 individuals who had visited the study region within the past two years or had cancelled a saltwater-related recreational trip to the Gulf of Mexico, estimates of lost economic value due to cancelled recreational trips from the *BP/Deepwater Horizon* oil spill were measured using several different approaches, techniques, and samples. The numerous results allow us to check for consistency and robustness.
- Individual respondents were asked to provide detailed information on their last trip to the study region, including detailed cost information for everyone they paid for on the trip. Respondents were also asked detailed information about past and planned trips for themselves. To be conservative, we assumed all information on trips was reflective of the household and not the individual. As such, this report is said to estimate lost recreational use values at the household level.
- The 2,181 respondent households represent a sample of the "qualified" population, which is defined as all households in a 13-state market area that are past or potential visitors to the study region. This sample represents 14.5 percent of households in the 13-state market area. Using the 44.3 million U.S. households in the market area from the U.S. Census Bureau (2011) generates an estimate of 6.44 million qualified

households in the market area of which 16.7 percent (1.08 million) are located in Florida. Of the qualified households in the market area, 84.1 percent were determined to be past visitors to the study region and 15.9 percent were considered potential visitors; potential visitors are those whose trips to the Gulf Coast were cancelled due to the *BP/Deepwater Horizon* oil spill.

- Prior to conducting the parametric analyses (i.e., estimation of models using the TCM, CVM, and RUM methodologies), the nonparametric Kruskal-Wallis test was performed on the variable that contains the number of trips. Test results indicated that the number of trips after the spill (i.e., with the oil) is statistically lower than the number of trips reported before the spill (i.e., without the oil).
- Using the single-site framework, a series of TCM and CVM analyses are first conducted on the full and restricted samples (including the combined use of revealed and stated preference data). The full sample includes all 2,181 respondents less those missing information on variables included in the models. The restricted sample excludes information from those that had not taken or cancelled a trip to the study region since June 1, 2010. Both samples are used to derive point estimates of lost consumer surplus and compare the associated 95 percent confidence intervals. The comparisons are used to conclude that the lost valuation estimates are robust and exhibit convergent validity.
- The most appropriate single-site model from which to obtain estimates of lost recreational use value to Florida households in the qualified population generated a statistically significant $103 per household difference in consumer surplus between pre- and post-spill conditions. Lost consumer surplus aggregated over the 1.08 million Florida households is $111 million, with a 95 percent confidence interval of $22 million to $199 million. This lost recreational use value to Florida households who are past or potential visitors to the study region is associated with a loss of approximately 323,000 trips due to the *BP/Deepwater Horizon* oil spill.
- Using the multi-site framework (i.e., random utility model or RUM technique), the lost recreational use values caused by multiple, simultaneous, site closures (reflecting cancelled trips by Floridians destined for Gulf of Mexico coastal locations) were calculated. In total, 11 possible sites were modeled: 4 regions in Florida and the 7 other Gulf and South Atlantic coastal states. The value of a trip to a given site (i.e., economic loss per cancelled trip) is shown to increase with the number of alternative sites that are closed, such as due to the oil spill. To calculate the aggregate losses due to multiple-site closures, we used estimates of the net change in trips per household before and after the spill for closures of different sizes and the associated lost consumer surplus (recreational use) value for each trip. Given the volume of oil spilled and broad range of areas affected in the Gulf of Mexico, the most appropriate measure of the lost value of access to Floridians from simultaneously cancelled trips along the Gulf Coast is estimated to be $643 million and is associated with a loss of 596,000 trips.

- The most defensible empirical results, those generated from the single- and multi-site travel cost methods that generate results for qualified Florida households only, are summarized in Table 3-1-ES to facilitate the comparison.

Conclusions

The use of several stated and revealed preference economic valuation methodologies and assumptions about variables and the data sample allowed us to estimate a range of lost recreational use values (RUV) to Floridians from the *BP/Deepwater Horizon* oil spill. The use of multiple techniques, statistical tests of differences, and comparisons of confidence intervals all help to ensure the robustness and validity of the results presented.

In summary, the estimates derived using the single-site TCM that incorporates site quality and uses, both revealed and stated preference information, generated lost recreational use value to qualified Florida households of $111 million. However, the single-site TCM number is likely to be too low because it assumes that there is no change to the quality of the substitute site. This is accounted for in the RUM, which generates a higher estimate of losses. The estimates derived using the multi-site TCM (or RUM) methodology to account for the loss of substitute destinations produced an estimate of $643 million for the lost recreational use value to qualified Florida households associated with a Gulf coast closure of recreational sites.

The lost RUV estimates presented in this study are conservative estimates of the lost value to Floridians due to cancelled saltwater-related recreational trips due to the *BP/Deepwater Horizon* oil spill for three main reasons: (1) the estimates are based on qualified households, which means only households considered to be past or potential visitors to the study region (i.e., 12 coastal counties in Northwest Florida); in other words, the estimates exclude households who solely visit Southwest Florida or the Florida Keys; (2) the estimates exclude cancelled future trips; and (3) the cancelled trips were provided by individuals but extrapolated using households such that the total loss estimates may be underestimated to the extent that other household members cancelled additional trips.

Table 3-1-ES. Summary of lost recreational use values (RUV) to qualified Florida households (hh) from alternative models of cancelled recreational trips from June 1, 2010 through September 24, 2011 (date that last completed survey was received) due to the *BP/Deepwater Horizon* oil spill

	Single-site TCM Results (Model 2, Table 3-17)		RUM Results for Alternative Site Closures (Tables 3-24, 3-25, 3-26)			
Measure	Day trips only	Day and overnight trips	NW FL closure	All FL Gulf closure	Affected Gulf closure	All Gulf closure
Qualified FL households:	1.08 million	1.08 million	1.08 million	1.08 million	1.08 million	1.08 million
Recreational Trips:						
Without oil spill	3.02/hh	3.02/hh	3.29/hh	4.41/hh	4.12/hh	5.23/hh
With oil spill	2.73/hh	2.73/hh	3.26/hh	4.19/hh	3.74/hh	4.68/hh
Cancelled due to oil spill	0.29/hh	0.29/hh	0.04/hh	0.21/hh	0.38/hh	0.55/hh
Total cancelled (1,000)	323	323	42	258	363	596
Consumer Surplus:						
Without oil spill	$505/hh	$1,044/hh				
With oil spill	$455/hh	$941/hh				
Reduction due to oil spill	$50/hh	$103/hh	$460/trip	$656/trip	$740/trip	$1,078
Total reduction (millions)	*$53*	*$111*	*$19*	*$169*	*$268*	*$643*

Notes: Qualified Florida households are the estimated number of households in Florida that have visited or may visit the study region for saltwater-related recreation. The totals may not equal the sums of the individual numbers due to rounding. The reduction in consumer surplus for the RUM model is calculated as $-\ln(1-\Pr(j))/\beta_y$ where the probability is based on the marginal utility of income for Florida households (Table 3-22) and the sum of the weighted in-sample distributions across closed areas before the spill for Florida households (Table 3-23b).

Introduction to Lost Recreational Use Value Report

This report is part of a research project undertaken by the University of Florida, Food and Resource Economics Department, at the request of the Florida Legislature, Office of Economic and Demographic Research (EDR), to estimate economic losses to the State of Florida resulting from the *BP/Deepwater Horizon* oil spill in the Gulf of Mexico that began on April 20, 2010. The spill was officially designated a spill of national significance on April 29, 2010. While the primary leak was contained in July, the wellhead was not officially capped until early September. Reports from the National Incident Command indicate that 4.9 million barrels of oil were spilled into the Gulf of Mexico, which is over 19 times the amount of oil spilled by the *Exxon Valdez* in Alaska in 1989, making it the worst oil spill in U.S. history. Figure 3-1 shows the extent of the spill in terms of oiled shoreline in Louisiana, Alabama, Mississippi, and Florida, with red, orange, and yellow colors indicating heavy, moderate, and light oiling, respectively, while blue indicates no oil observed. Oil from the *BP/Deepwater Horizon* oil spill was observed in coastal areas of Northwest Florida from Pensacola to Panama City.

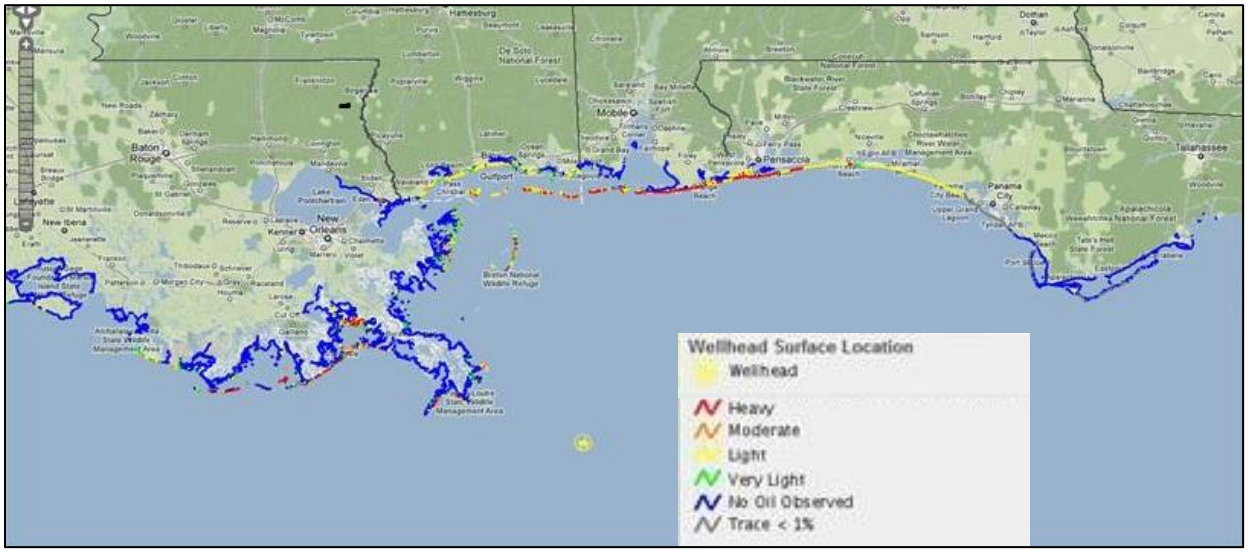

Figure 3-1. Extent of oiled beaches in Louisiana, Alabama, Mississippi, and Florida

Sources: Environmental Response Management Application (ERMA®) Gulf Response Tool; Federal Geographic Data Committee (FGDC); http://resources.geoplatform.gov/news/mapping-response-bp-oil-spill-gulf-mexico

To date, no official claims for damages have been filed on behalf of the State of Florida although a few advance-funding requests have been made. Once the claims process begins, there are several types of damages for which the state can seek compensation. Based on the legal precedence of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Oil Pollution Act (OPA), compensable losses are categorized

into three groupings based on the availability of market prices to measure the losses: direct (e.g., losses to local business), indirect (e.g., losses in ecosystem services or the economic value of foregone recreational opportunities), and passive use (e.g., losses to households who value a clean environment for future generations or the benefit of knowing that certain Gulf-dependent animal species continue to exist).

This report estimates losses in the second category, indirect losses from affected recreational trips.[22] These are losses to Florida households from an affected coastal Gulf environment from the perspective of past and potential visitors to the study region (i.e., 12 coastal counties in Northwest Florida). Two primary techniques are used to estimate and corroborate these losses: the *travel cost method* and the *contingent valuation method*. The former technique (the travel cost method) is known as a surrogate market or *revealed preference approach* where data from a related market are used to infer economic values of a related good. The latter (contingent valuation method) is a non-market valuation method and is also known as a *stated preference approach*. Use of both techniques to evaluate the effects of the *BP/Deepwater Horizon* oil spill requires information from past and potential visitors.

In the following section we describe how the market area was determined and then describe the survey process used to obtain the data needed to derive the lost economic value estimates. This is the same market area that was defined for the companion report on economic impacts. In addition, information for this analysis was derived from the same survey that gathered information for the analysis of impacts, which explains why non-Floridians were sampled. Aside from the use of the same survey instrument, the similarities in the analyses (economic impacts versus economic values) end there. Notable differences due to the different underlying methodologies are that this economic value analysis (1) defines travel costs based on travel time and distance only (versus use of reported out-of-pocket expenditures during the entire trip) and (2) includes information on all Florida households (versus eliminating those in the study region). The methodologies behind the two techniques used to generate the lost recreational use values are further described following the information on the survey and are followed by a presentation of the results.

[22] These categories were described based on the type of data required to estimate the associated losses and should not be confused with the components of Total Economic Value (TEV) that distinguish between "use values" and "non-use values." In the TEV classification, losses from affected recreational trips are referred to as reductions in direct, non-consumptive (or extractive) active use values, which can be measured indirectly using market prices.

Study Region

For this study, the study region is defined to include the 12 Northwest Florida coastal counties of Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, Wakulla, Jefferson, Taylor, Dixie, and Levy (Figure 3-2).

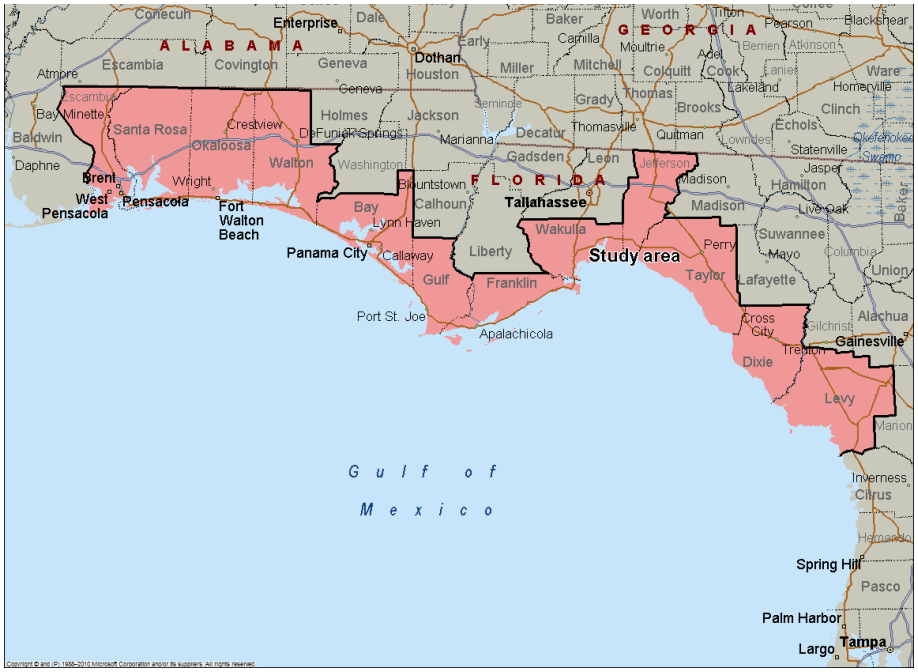

Figure 3-2. Map of the study region (i.e., 12 coastal counties in Northwest Florida)

Methods

Market Area Determination

Two sources of data were used to determine the domestic market area for recreational visitation to the study region. The first, from *VISIT FLORIDA*®, provides the geographic distribution of domestic overnight visitors by state to each of eight defined "Florida Vacation Regions," two of which include the study region defined in this report. The second, from the Marine Recreational Fisheries Statistics Survey (MRFSS) program, provides the geographic distribution of marine (saltwater) recreational fishermen who were intercepted at sites in the study region. Data from each source were considered in the determination of the market area for purposes of administering a survey because each is flawed with respect

to determining the market for saltwater-related recreation to the study region,[23] but are the only secondary information sources available.

VISIT FLORIDA® is the official tourism marketing corporation for the State of Florida, which publishes an annual Florida Visitor Study, among other documents, that provides a comprehensive overview of visitation to the state each year. The *2009 Florida Visitor Study* includes a profile of domestic visitors to Florida statewide, broken out by region within the State. The *Florida Visitor Study* information is obtained from sources including enplanement data at Florida's 14 major airports, *OAG/BACK* Aviation Data, *TNS TravelsAmerica*, and surveys by D.K. Shifflet and Associates (DIRECTABS data). The report provided information on the share of non-Florida resident visitors who stayed overnight in the Northwest or North Central regions.[24] Although this region encompasses interior counties in Northwest Florida, these numbers are sufficient for the market area determination since we know that day trippers to the study region would have to have visited from adjacent states and all of these states are included. Table 3-1 shows the data for states that accounted for at least one percent of visitors in 2009. Southern states, and states adjacent to the study region, account for the majority of non-Florida overnight general visitors to the study region.

Table 3-1. Share of non-Florida overnight visitors to Northwest Florida by states that accounted for at least one percent of visitors in 2009

State	Share	State	Share
Georgia	26%	South Carolina	2%
Alabama	17%	Pennsylvania	2%
Mississippi	9%	Arkansas	2%
Louisiana	8%	Ohio	2%
Texas	8%	Indiana	2%
Tennessee	4%	Missouri	2%
Kentucky	4%	California	1%
Illinois	4%	Virginia	1%
Total top 8:	80%	Total top 9-16:	14%

Note: In this table, "Northwest Florida" is defined to include the Northwest and North Central regions used by *VISIT FLORIDA*®, which is the most disaggregated information by states available.
Source: *VISIT FLORIDA*® (pers. comm., March 2, 2011).

[23] The *VISIT FLORIDA*® data contain information on non-coastal counties and the MRFSS data are characterized by avidity bias. The MRFSS is being replaced by the Marine Recreational Information Program (MRIP), in part to correct for avidity bias. The MRIP data was not available by April 2011 for consideration in the determination of the market area.
[24] The Northwest region includes the following coastal counties: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin. The North Central region includes the following coastal counties: Wakulla, Jefferson, Taylor, Dixie and Levy.

The MRFSS program is administered by the National Marine Fisheries Service and the resulting angler data is—as of April 2011—considered the best available information for estimating the annual activity of marine recreational fishermen. The MRFSS uses a combination of dockside interviews and follow-up telephone and mail surveys to collect recreational harvest information. Using the intercept data from 2009, the most recent year available, the geographic distribution of visitors was determined. The distribution of anglers intercepted in the study region by state of origin, for those states that account for at least one percent of visitation, is shown in Table 3-2, and is comparable to Table 3-1 for the general visitor survey. The MRFSS marine recreational fishing data also indicates that the majority of out-of-state visitors are from nearby southern states.

Table 3-2. Share of non-Florida marine recreational fishing visitors to the study region by states that accounted for at least one percent of visitors in 2009

State	Share	State	Share
Georgia	28%	Minnesota	4%
Alabama	10%	Ohio	4%
Illinois	8%	Virginia	3%
Wisconsin	8%	New Jersey	2%
Indiana	6%	Iowa	1%
Kentucky	6%	Missouri	1%
Michigan	6%	New York	1%
Tennessee	6%	North Dakota	1%
Louisiana	4%	Texas	1%
Total top 9:	82%	Total top 10-18:	18%

Note: Data includes day trippers from nearby states so is not directly comparable to Table 3-1.
Source: MRFSS.

Using the general visitor data and marine recreational fishing data on non-Florida visitors in 2009 suggests a 23-state market area. To examine the robustness of this result,[25] the decision was made to examine comparable data for the two previous years (2007 and 2008). When the 2007 and 2008 MRFSS data were obtained on March 20, 2011, we discovered that the 2009 data had been updated. An examination of the states that accounted for at least one percent share of marine recreational anglers to the study region (exclusive of Florida) revealed that the top 12 states were identical in 2007, 2008 and 2009.

[25] The geographic scope of the market area is a key determinant of the costs to implement the survey online through Knowledge Networks (KN). With a goal of receiving 2,000 completed responses from past visitors to the study area, KN suggested restricting the study area to approximately 10 states.

On March 24, 2011, the 2007 and 2008 data for general overnight visitors to Northwest Florida (as defined in Table 3-1) were obtained from *VISIT FLORIDA*®. The top 12 non-Florida states in each of the three years included 17 states, all of which were included in the recreational fishing list for the same years. Table 3-3 shows, for comparison to Tables 3-1 and 3-2, the updated visitation shares for the top 12 states in 2009 for general visitation and marine fishing, respectively. The top 12 states for each visitor type account for 88.8 percent of marine anglers and 89.1 percent of non-Florida overnight visitors. Table 3-3 contains 14 states, excluding Florida.

Table 3-3. Share of non-Florida resident visitors to the study region in 2009 for marine fishing and general visitation from the top 12 states

Marine Fishing		General Visitors (overnight only)	
State	Share	State	Share
Georgia	31.8%	Georgia	26.2%
Alabama	17.1%	Alabama	17.4%
Tennessee	10.7%	Mississippi	9.4%
Texas	5.3%	Louisiana	7.6%
Louisiana	5.0%	Texas	7.6%
Mississippi	3.9%	Tennessee	4.3%
Kentucky	3.7%	Kentucky	4.2%
Missouri	2.9%	Illinois	3.9%
Arkansas	2.8%	South Carolina	2.4%
Illinois	2.1%	Pennsylvania	2.3%
Ohio	1.9%	Arkansas	2.2%
Indiana	1.5%	Ohio	1.6%
Total top 12:	88.8%	Total top 12:	89.1%

Notes: The marine fishing shares in this table differ from Table 3-2 since these figures were based on updated data. The totals may not equal the sums of the individual numbers due to rounding.

Sources: MRFSS, *VISIT FLORIDA*®

The top 12 states in each of the three years from both data sources contained 17 states. Restricting the market area to the 12 states included in each year of MRFSS data resulted in the elimination of California, New Mexico, Michigan, Pennsylvania, and South Carolina. Despite the limitations of each independent data source, the data and market areas were remarkably similar. In general, the market area of domestic visitors according to the secondary sources used is comprised of southern states and extends north to Indiana, Illinois, and Ohio.

Survey Development and Implementation

Survey questionnaires were developed based on the investigators' experience with past recreational visitor surveys. Surveys were pre-tested with 145 respondents to assure that questions were clear and meaningful. The survey gathered information on past visitation to coastal destinations, saltwater-related recreational activities, details on their past trip to the study region, trip cancellations due to the oil spill (past and future), opinions about the quality of waterfront resources post-spill, and respondent information. A copy of the questionnaire as coded on the Internet by Knowledge Networks is provided in Appendix C.

Information on other coastal destinations is important for evaluating the impacts on recreational trips intended for study region. To limit the scope of the analysis, the alternative destinations on which detailed information was gathered were restricted to 11 broad coastal "sites" in the southeastern United States (Figure 3-3).

Figure 3-3. The 11 coastal sites for saltwater-related recreation in the southeastern United States used in the study (4 regions in Florida, including the study region, and 7 other coastal states)

To better define the study region and refine the analysis, the 12-county area in Florida was subdivided into five sub-regions: Pensacola, Ft. Walton Beach, Panama City, Port St. Joe, and the Central Gulf Coast. The regions were defined by counties as shown in Figure 3-4.

Figure 3-4. The five sub-regions within the study region

The target population of the survey was non-institutionalized adults age 18 and over, residing in Georgia, Alabama, Tennessee, Louisiana, Texas, Missouri, Mississippi, Kentucky, Arkansas, Ohio, Indiana, Illinois, and Florida, who have visited the study region in the last 24 months, or canceled at least one trip to the Gulf of Mexico since June 1, 2010 due to the oil spill. The June 1, 2010, cut-off was selected to be a conservative start date since it would exclude the Memorial Day weekend and was at least a month after the spill began.

The survey was implemented via the Internet by Knowledge Networks Inc. (KN), under contract with the University of Florida. For this study, survey respondents were drawn from a sample of households residing in the 13 states from the KN *KnowledgePanel*®, a probability-based panel designed to be representative of the United States. These respondents were supplemented by KN with email invitations sent through another firm that manages online panels. KN provided weighting factors that reflect each respondent's representativeness in the overall sample based on individual socio-demographic information. In particular, three weights were used in the study: (1) a base weight to offset known deviations from a pure equal probability sample design in the selection process, (2) a panel demographic post-stratification weight to adjust for survey error in the panel, and (3) a study-specific post-stratification weight to adjust for the study's sample design and non-response. Recall that a description of the sampling and weighting methodologies used by KN are provided in Appendix A.

The survey was conducted from August 12, 2011, through September 24, 2011. Each respondent's eligibility for the full survey was determined by a series of screening questions at the beginning of the questionnaire. Eligible participants completed the survey in a median time of 14 minutes.

To enhance survey response rates, KN emailed reminders to non-responders. The response rate was 79.3 percent for KN panelists. This relatively high response rate is expected when using KN due to their agreements with their panelists, who are only invited to participate in 4 to 6 surveys each month and, once invited, are expected to respond. Those who did not respond (i.e., 'click' to begin the survey), made the decision irrespective of the content of the survey since the email invitations are generic. The response rate for non-panelists could not be obtained per the agreement between KN and their contracting firms (see Appendix A for further detail on the non-panelists, or "opt in", respondents); however, KN generated unique weights for all respondents, including the opt-ins such that the resulting sample data are representative of the targeted population.

Survey Data Summary

Number of Qualified Respondents

Of the 15,014 individuals who began the survey, 2,181 (14.5%) were considered to be "qualified," that is, were either past or potential recreational visitors to the study region.[26] These qualified respondents constitute the full sample and are divided into two groups: (1) respondents who reported visiting the study region in the past two years (group 1: "past visitors," N = 1,835, or 84.1%), and (2) respondents who had not visited the study region in the past two years but reported cancelling at least one "planned trip" (where some arrangements had to be cancelled) to the Gulf of Mexico because of the oil spill (group 2: "cancellers only," N = 346, or 15.9%). In this study, visits refer to any trips that involved saltwater-related recreation, including day trips and trips involving one or more nights away from home.

Household Population in Market Area

The 2010 U.S. Census reports 44.3 million households in the market area (Table 3-4). Using the share of qualified households (14.5 percent), 6.44 million households were estimated

[26] This percentage is slightly higher than the 13.96 percent that is used in the Economic Impact Report (Chapter4) since it includes residents of the study region.

to be in the population of qualified households for the purpose of this study. Of those, 1.08 million (16.7 percent) were located in Florida.[27]

Table 3-4. Number and share of households in the market area for visitation to the study region by state

State	Number	Share
Alabama	1,883,791	4.25%
Arkansas	1,147,084	2.59%
Florida	7,420,802	16.74%
Georgia	3,585,584	8.09%
Illinois	4,836,972	10.91%
Indiana	2,502,154	5.64%
Kentucky	1,719,965	3.88%
Louisiana	1,728,360	3.90%
Mississippi	1,115,768	2.52%
Missouri	2,375,611	5.36%
Ohio	4,603,435	10.38%
Tennessee	2,493,552	5.62%
Texas	8,922,933	20.13%
Total	44,336,011	100.00%

Note: The totals may not equal the sums of the individual numbers due to rounding.
Source: U.S. Census Bureau (2011).

Confirmation of Market Area

The determination of the market area for the purpose of reaching the majority of potential recreational visitors to the study region was based on secondary data from ongoing general visitor surveys (i.e., *VISIT FLORIDA*®) and intercept surveys of coastal anglers (i.e., MRFSS). While these two data sources produced remarkably similar market areas that included 13 mostly southern U.S. states, both were limited in their direct reflection of the population of interest for this study such that an independent measure of actual visitors was obtained for comparison. Results were used to verify, among other things, the extent that economic impacts are under or over reported as a result of using the limited 13-state market area consisting of Georgia, Alabama, Tennessee, Louisiana, Texas, Missouri, Mississippi, Kentucky, Arkansas, Ohio, Indiana, Illinois, and Florida.

The Florida Survey Research Center managed the design and implementation of the intercept survey effort, which was completed during the summer 2011 (July – early

[27] The calculations were based on percentages generated using the underlying measures. As such, minor differences in the size of the respective populations will differ based on use of rounded percentages.

September). The sampling design was based on fly-overs of the coastal areas in June 2011. One fly-over stretched from Perdido Key (western border of the study region) to Yankeetown (southeastern border of the study region) the second fly-over went from Perdido Key but stopped near Alligator Point due to lack of any notable beaches down to Yankeetown (only marsh areas). In addition to digital video, still photographs were taken every 5 seconds.

The best set of photographs across the region on a non-holiday weekend and weekday were used to develop a sampling protocol that accounted for regional differences in the coastline, nearby amenities, and estimated number of visitors. Once the target number of intercepts and the specific sampling approach for each beach were decided, a field research team was hired and trained. In sum, a total of 2,540 intercepts were conducted in the study region. The composition of visitors by state of home residence is presented and compared to that associated with the Internet respondents, anglers intercepted by the MRFSS and *VISIT FLORIDA*® general visitor programs in Table 3-5. In summary, the intercept survey included a slightly larger share of visitors to the study region from the previously defined market area (89.8% versus the 87.6% and 88.8% from the secondary data sources). This result could reflect avidity bias in the intercept estimates, which are higher than the *VISIT FLORIDA*® results that do not target coastal areas, but the difference is negligible.

Table 3-5. Comparison of non-Florida visitor shares to the study region by states in the market area

State	Intercept (2011)	Internet (2011)	MRFSS (2009)	VISIT FLORIDA® (2009)
Alabama	16.5%	15.2%	17.1%	17.4%
Arkansas	3.8%	1.5%	2.8%	2.2%
Georgia	18.0%	17.8%	31.8%	26.2%
Illinois	2.0%	7.0%	2.1%	3.9%
Indiana	2.3%	5.8%	1.5%	1.6%
Kentucky	3.7%	6.7%	3.7%	4.2%
Louisiana	11.4%	9.2%	5.0%	7.6%
Mississippi	3.6%	3.3%	3.9%	9.4%
Missouri	4.5%	5.2%	2.9%	1.6%
Ohio	2.7%	6.4%	1.9%	1.6%
Tennessee	11.4%	10.4%	10.7%	4.3%
Texas	9.8%	11.4%	5.3%	7.6%
Total	89.8%	100.0%	88.8%	87.6%

Notes: The intercept survey shares are unweighted and exclude "don't know" and refusals. The *VISIT FLORIDA*® shares and total differ from Table 3-3 since the states are different. The totals may not equal the sums of the individual numbers due to rounding.

In summary, the data are not skewed toward overestimating the economic effects from lost recreational trips since at least 11 percent of domestic visitors (and all international visitors) are excluded and the focus is on losses to Florida residents, which are included in the study.

Methodology

This report contains estimates of the recreational user values of visits to the study region. Recreational user values represent the non-market, or intangible, benefit of an activity. These types of economic values and changes in these values in particular are legally considered compensable losses to responsible parties.

In order to determine the recreational value of saltwater-related recreational experiences in the study region, and how they may have been affected by the *BP/Deepwater Horizon* oil spill, it is useful to first define some principles of economic theory.

In general, it is challenging to assign a monetary value to recreation since the benefits vary between users, and the methodologies that can be used to measure these benefits are often expressed in different units. For example, some users may benefit from the health effects while others are simply interested in enjoying the view. Using dollars as a standard unit of recreational value has the positive attribute of relying on the concept of consumer surplus, which provides a conceptual basis that is standard among market goods.

This report begins with a description of the economic theory of measuring recreational values and how it can be used to assess the lost value to Floridians of a degraded Northwest Florida coastal region.

Measuring Recreational Value Generated by the Environment

Expenditures are a useful indicator of the importance of resource-based activities to local and state economies, especially expenditures by non-residents. An expenditure-based analysis of the *BP/Deepwater Horizon* oil spill is the topic of the following chapter entitled "Economic Impact of Cancelled Recreational Trips" (Chapter 4). Changes in expenditures represent economic impacts; expenditures do not measure the economic effect on individual participants.

In contrast to an expenditure-based analysis, net economic value (consumer surplus) is a measure of the benefit to individuals from participation in recreational activities that are based on natural resources. Net economic value is measured as participants' "willingness to

pay" above what they spend to participate (i.e., WTP). The net benefit to society is the summation of consumer surplus as measured by estimates of WTP across all individuals.[28]

Expenditures (economic impacts) and net economic value (consumer surplus) are directly related. The value that individuals have for participation in saltwater-related activities is reflected by the number of times they choose to participate. The economic value of this participation is captured in the demand individuals have for the recreational trips that provide the experience. This is the same as for any other typical market-based good or service; namely that individuals will demand more as the price falls. In the case of recreational trips, individuals are assumed to take more trips (participate more) at lower costs. Figure 3-5 shows the typically downward sloping shape of demand, which reflects the typical observation that each successive trip is valued less by the individual than the previous trip (with the first trip being valued the highest). This demand function reflects the maximum amount that an individual is willing to pay for each trip. All other factors being equal, the lower the cost per trip, the more trips the individual is assumed to take. The cost per trip thus serves as the implicit price for the activity since a market price does not exist.

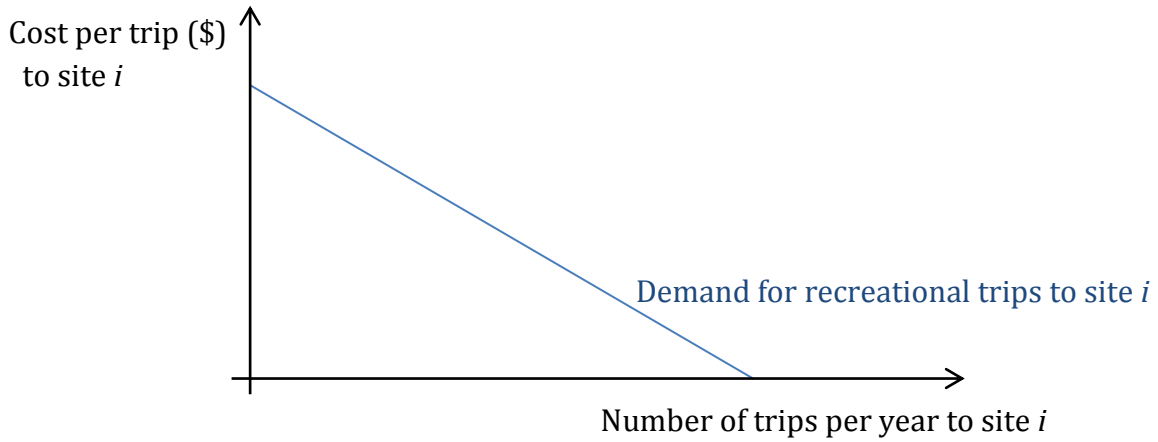

Figure 3-5. Representation of an individual's demand for recreational trips to site *i*

An individual's total willingness to pay for all trips over the course of a year is comprised of expenditures (trip costs) and net economic value (consumer surplus); net economic value is total willingness to pay less expenditures. Expenditures are out-of-pocket payments to participate in the activity; the remaining value is the economic measure of an individual's satisfaction after all costs of participation have been paid. Figure 3-6 shows how the demand function is used to measure both expenditures and net economic value. If the cost

[28] This theoretical discussion follows traditional convention and refers to choices of individuals. This study uses households as the basis of measure, but the interpretation is the same. Also, "respondents" and "households" are used interchangeably throughout the ensuing discussions to best match the context.

to take a trip to site *i* by this individual is $C*, this person will take T* trips during the year for a total expense of $C* times T*, which is the area *EXP* in Figure 3-6. The consumer surplus (CS) associated with taking T* trips that each cost $C* is the difference in the amount that the individual is willing to pay for each trip, which is declining, and the cost of each trip; this area is identified in Figure 3-6 as *CS*. In this case the "consumers" are individuals who are essentially buying recreational trips. The consumer surplus reflects that measure of value individuals receive by not having to pay as much as they would be willing to for trips.

Summing the consumer surplus values of all participating individuals generates the net economic value to society. In the case of evaluating the impacts of the oil spill, we are interested in estimating the change in consumer surplus that was caused by the spill. Figures 3-5 and 3-6 depict the demand an individual's demand for recreation trips per year to a recreational site of a given quality. If the quality of the site changes, such as following an oil spill, the demand for trips to that site will shift, changing the consumer surplus area under the demand curve. The change in the consumer surplus area measures the change in net economic value of the individual's recreation trips to that recreation site due to the oil spill.

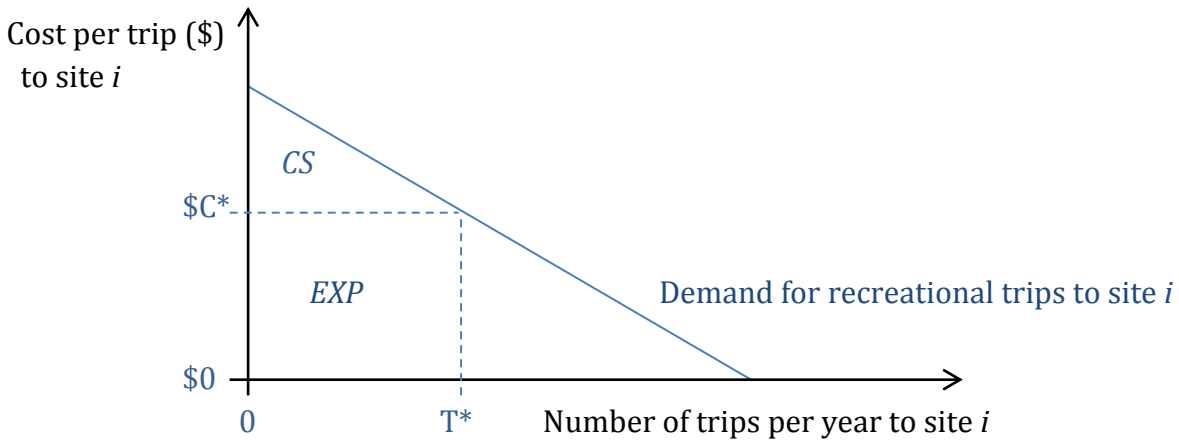

Figure 3-6. Representation of an individual's expenditures and consumer surplus for recreational trips to site *i* if the cost per trip were $C*

Note that we have purposefully excluded expenditures from the computation of societal benefits. Because individuals spend all of their income, with savings being a form of expenditure, expenses are not counted as benefits from a net economic benefit perspective. Thus, any change in expenditures is considered a transfer from one subgroup of society to another subgroup. The reduced EXP value associated with visitors who cancelled trips to the study region, and its corresponding impact on the local economies in the study region, are measured in the following chapter (Chapter 4).

For non-market goods such as saltwater-related recreational trips, several techniques are available to estimate the demand for recreation that is needed to calculate consumer surplus. The two general approaches that will be used in this report are the travel cost method (a revealed preference approach) and the contingent valuation method (a stated preference approach). There is a third basic approach (the benefit transfer method that uses values from exiting studies), but that approach cannot be used for the *BP/Deepwater Horizon* oil spill, which is the largest oil spill in U.S. history (over 19 times that of *Exxon Valdez*) and was closer to a much larger coastal tourism industry.

The Travel Cost Method (TCM)

The underlying principle of the TCM is that the costs individuals (consumers) incur to take a recreational trip can be used as a proxy for the "price" of the recreational opportunities at the site. These costs reflect only the cost of access to the site, which means that only the costs associated with the transportation to and from the site, and the value of their time during the transport, are included. The TCM assumes that consumers' willingness-to-pay these travel expenses can be estimated from the number of trips taken at different travel costs. This approach is comparable to estimating the demand for any market good or service based on the quantities demanded (sold) to consumers at different prices.

Application of the TCM requires administering a detailed survey to visitors and conducting an analysis of the data. The survey needs to obtain—at a minimum—information on the distance between an individual's home and the site, the number of trips per year, the transportation expenses, and income and employment information. This information is used to calculate travel costs and estimate the relationship between the number of visits and travel costs in order to create a demand function for the typical visitor.

There are many advantages to the TCM, including that it uses revealed preference data, however, there are several notable limitations. The limitations of the TCM include that

- The TCM can only be used to measure values associated with recreational use
- The site being valued must draw visitors from a wide geographic range to get differences in numbers of trips and travel costs
- The omission of substitute recreational sites may bias estimates of a site in a single-site TCM analysis
- If the recreational experience was part of a multipurpose trip, the TCM will over-value the site
- Defining and measuring the value of time is important but complex (how do you value the time of a child or a retiree?)

If there are substitute recreational sites, or site quality is important, the choices that recreationists make may be needed to accurately evaluate (value) alternative sites. The random utility model (RUM), or multiple site travel cost model, attempts to explain the choice of a recreational site for a trip. This choice is assumed to depend on the characteristics of the sites and to reveal preferences for those characteristics, that is, how individuals implicitly tradeoff one site characteristic for another in their choices. The mechanics of this approach were succinctly summarized by Parsons (2001):

> Since trip cost is always included as one of the characteristics, the model implicitly captures tradeoffs between money and other site characteristics. This revealed trade off with money makes the economic valuation possible. The tradeoffs are easy to see in a simple example. If individuals are observed traveling to distant recreation sites to obtain better "site quality" such as nicer amenities or better fishing, they are implicitly revealing something about the value of quality by passing by the nearer sites of lower quality. They willingly incur a higher trip cost to obtain more "site quality." By the same reasoning, if individuals choose not to travel to more distant sites, they also reveal implicit values. With a variety of sites located at different distances from individuals' homes (giving variation in trip cost) and with many characteristics, it is possible to reveal implicit values for the characteristics of the sites and even the sites themselves.

For comparison, while the traditional (or single site) travel cost approach focuses on the number of trips recreationists make to a given site each year, a random utility model focuses on the choices recreationists make over a range of alternatives. The main advantage of the RUM is its use of observable market information, like the traditional TCM, but the RUM also shares many of the disadvantages of travel cost methods (e.g., sensitivity to choice of demand function specification and calculation of travel costs). Despite the potential disadvantages of the RUM, it was used to estimate the lost economic value to nearby residents from a 1993 oil spill in Tampa Bay that closed coastal beaches and forced residents to go elsewhere for recreation; under federal statute, the State of Florida successfully sued the responsible party for these economic damages (Bell, 2002).

The Contingent Valuation Method (CVM)

The CVM measures use or non-use values associated with a potential change in the environment by eliciting preferences directly from individuals through the use of hypothetical survey questions. When using the CVM, a researcher describes a project or event involving an improvement or decline in environmental quality, or addition or

elimination of an environmental asset or ecosystem service. The scenario is then posed to a random sample of the population to estimate their willingness to pay (e.g., through local property taxes or utility fees, or donation to a local non-profit environmental organization) for an improvement in environmental quality or additional service, or their willingness to accept monetary compensation for a decline in environmental quality or loss of service. The questionnaire may take the form of a simple open-ended question (e.g., how much would you be willing to pay?) or may involve asking different people to react to different amounts (e.g., would you pay $C?). Based on survey responses, examiners calculate the average willingness to pay (WTP) for an environmental improvement or willingness to accept (WTA) compensation for a decline in environmental quality at each value (i.e., estimate a demand function). These measures reflect the change in consumer surplus on a per respondent basis.

The CVM is extremely flexible since it is a stated preference approach, which means it can be used to value anything. It is called "contingent" valuation because it asks people to provide values that are based on (contingent on) the scenario they are asked to evaluate. Since it is a stated preference approach, it can also capture non-use values. In the case of valuing a site for recreation, the CVM questions often just simply ask if visitors would have been willing to pay more for their last trip (without the use of scenario). This approach avoids many of the biases that need to be addressed with using the CVM since the objective in the case of valuing recreation is just to determine their maximum willingness to pay (i.e., estimate a demand function), which can be used to estimate consumer surplus associated with the last trip and its associated quality. This information is then used to estimate the lost economic value of cancelled trips due to a severe degradation of site quality (e.g., closures).

In summary, both the TCM approaches and the CVM approach attempt to estimate a demand function for recreation; the former uses information on past trips, while the latter asks respondents if they would have paid more for their past trip. Both approaches—revealed and stated preference—will be used in this study to compare results and assess the validity of the estimated lost recreational use value caused by the *BP/Deepwater Horizon* oil spill.

Single-Site Analysis

Using the single-site framework, a number of distinct analyses are conducted to assess the robustness of the estimates and ensure comparability of results. This analysis begins with use of the single-site travel cost method (TCM) with the most restricted sample (i.e., those respondent households who took a trip to the study region since the oil spill) and then adds

data from those who took trips prior to but cancelled trips after the spill. The distinct characteristics of the data sets are described between models. We then use the contingent valuation method (CVM) on the comparable samples to estimate the value of the most recent trip to the study region. The comparisons are used to conclude that the lost valuation estimates are robust and exhibit convergent validity; "convergent validity" is the extent to which two measures of consumer surplus, TCM and CVM, are similar to each other. Similarity lends confidence in both measures of consumer surplus. Lastly, we use the full sample, which is preferable in order to incorporate more observations and variation in travel costs. The full sample models include Florida-specific variables designed to generate improved estimates of lost consumer surpluses associated with foregone recreational trips from the oil spill. In all estimation and calculations, sample observations are weighted to ensure proper population representation.

Travel Cost Method (TCM) Results – Restricted Sample

The single-site TCM is used to estimate recreation demand functions. In the single-site model, recreational trips to a specific site over a given period of time (e.g., per year) represents the quantity demanded and the travel cost to that site is considered the *implicit own-price*. While the linear demand function shown in Figures 3-5 and 3-6 depicts an inverse relationship between the implicit own price and the quantity demand, suggesting the own-price is the only explanatory variable that affects quantity demanded; when estimating the function it is typical to include other variables in the demand model. In this study, we begin by including the following three additional variables: a measure of the travel cost to a substitute site (i.e., the *implicit cross-price*), a measure of site quality, and respondent income for the purpose of accounting for the effect of income on demand (i.e., the *income elasticity*). Assuming just two sites, the model of demand for recreational trips becomes

$$x_1 = x(p_1, p_2, q_1, y)$$

where x_1 is the number of trips to study region, p_1 is the travel cost to the study region, p_2 is the travel cost to a substitute site, q_1 is quality at the site in the study region they last visited, and y is income.

In order to derive and estimate of the economic value of a lost (foregone) trip, we need to specify an explicit model. The following semi-log specification is the most common functional form assumed for these types of models

$$\mathrm{Ln}(x_1) = \beta_0 + \beta_1 p_1 + \beta_2 p_2 + \beta_3 q_1 + \beta_4 y \, .$$

Using the estimated coefficients of this model, the consumer surplus of one trip to the study region can be calculated as follows (Bockstael and Strand, 1987; Adamowicz et al., 1989)

$$CS = \frac{1}{-\beta_1}$$

where β_1 is the coefficient on the travel cost to the study region (p_1). To calculate the value of additional trips, the per trip value can be extrapolated the *CS* estimate will be multiplied by the total number of lost (foregone) recreational trips to the study region.

The single-site TCM analysis is first conducted with the 84.1 percent of surveyed households who are considered to be "past visitors" (group 1). The average number of trips for those who took a trip to the study region over the past two years was 3.11 (N = 1,835). At least one trip to the study region was taken by 85 percent of these respondents since June 1, 2010. The average number of trips to the study region since June 1, 2010 was 2.34 (N = 1,566).

Past visitors who reported a trip to the study region since June 1, 2010 (over a month after the spill began and after the Memorial Day weekend) were then asked about the number of trips they cancelled due to the oil spill. Fifteen percent (N = 231) reported cancelling a Gulf of Mexico trip. Of these, 40 percent (N = 92) reported that the study region was the intended destination for the cancelled trip. The average number of cancelled trips is 3.02 (N = 91), with a minimum of one and a maximum of 48 cancelled trips. For the sole respondent who reported cancelling a trip but did not report the number cancelled we impute one trip, which is a conservative assumption. With this additional observation, the average number of cancelled trips is 3.00 (N = 92).

With these data we create a pseudo-panel of respondent households with a simulated, or stated preference (SP), time period without the oil spill to represent pre-spill conditions and a revealed preference (RP) time period with the oil spill to represent post-spill conditions. Without the oil spill, the sum of RP and SP trips per household is 2.52 (N = 1,566). We test for the difference in trips with and without the oil spill with a random effects linear regression model that includes a dummy variable for the oil spill scenario as the sole independent variable. The 0.18 difference in trips per household is statistically significant at the p = 0.01 level.

In order to employ the TCM we first need estimates of the travel cost (p_1 and p_2 in the previous equation). In particular, we need the cost for each respondent to travel to the site visited and then we need an estimate of the costs that would have been incurred to travel to each alternative site (i.e., the implicit own and cross price variables, respectively). Since we are interested only in the travel costs, we only need to include two measures: the

money cost of travel and the opportunity cost of travel time. Both measures in the travel cost equation are calculated using the distance travelled from the mid-point of household *i*'s home ZIP code to the approximate midpoint of the coast in the j^{th} destination

$$tc_{ij} = cd_{ij} + \gamma w_i \left(\frac{d_{ij}}{mph}\right)$$

where c is the cost per mile, d_{ij} is round trip distance; $0 < \gamma < 1$ is a fraction of the hourly wage rate, w_i, in order to account for the cost of leisure time; mph is miles per hour; $i = 1, \ldots,$ N respondent households; and $j = 1, \ldots, 11$ sites defined in Figure 3-3. Table 3-6 summarizes the key parameter assumptions used to calculate the travel costs and includes a brief description, justification and the source of the estimate.

Table 3-6. Summary information on parameters used in calculation of travel cost variable

Parameter	Description/justification	Source
c = \$0.55	Fixed and variable costs associated with driving a passenger vehicle (\$/mile)	Standard IRS mileage rate for taxpayers in 2009
γ = 0.33	Share of the value of travel time used to account for disutility of time	U.S. Water Resources Council (1983), p. 78, Executive Order 11747
mph = 50.00	Average driving distance covered per hour of travel (miles/hour)	MapQuest
w = \$31.51	Wage rate is the reported annual household income divided by 2,000 hours (\$/hour)	Average from survey (N = 1,536)

Notes: The IRS mileage rates are available at http://www.irs.gov/taxpros/article/0,,id=156624,00.html. These rates vary frequently and were last changed on July 1, 2011, to \$0.555 per mile. For comparison, the AAA rate for 2010 was \$0.573 per mile for a medium sedan driven over 15,000 miles per year; the rates are at http://www.aaaexchange.com/main/Default.asp?CategoryID=16&SubCategoryID=76&ContentID=353. The *mph* is based on a trip from Atlanta, GA to Destin, FL with two 20-minute stops (http://www.mapquest.com).

The sites included in this study are all Gulf of Mexico and South Atlantic coastal states. The coastal areas in these states offer similar amenities to the study region. This region was also included in the secondary data sources defining the market area. To facilitate the empirical analysis, the number of sites was limited. In particular, each non-Florida state was considered a separate site because within each state the coastal areas are similar. To isolate effects on the study region, coastal sites in the State of Florida were divided into four main sites: Northwest Florida (study region), Southwest Florida, the Florida Keys, and the Florida Atlantic Coast. Each of these sites is distinct overall with respect to several site characteristics including the nature of the beach area (color, consistency, slope and depth), coastal vegetation, and fishing opportunities (species and seasonality).

Figure 3-7 summarizes the various samples and their combinations that we employ in the statistical analysis. Of the 2,181 qualified households, 2,108 (96.7 percent) provided a valid ZIP code, had household income information from Knowledge Networks and answered the willingness-to-pay and follow-up certainty questions (i.e., had complete data). Of these 2,108 households, 1,784 are past visitors and 324 are cancellers. A summary of the data and analyses, where the study region is referred to as "NWFL," is provided in Figure 3-7.

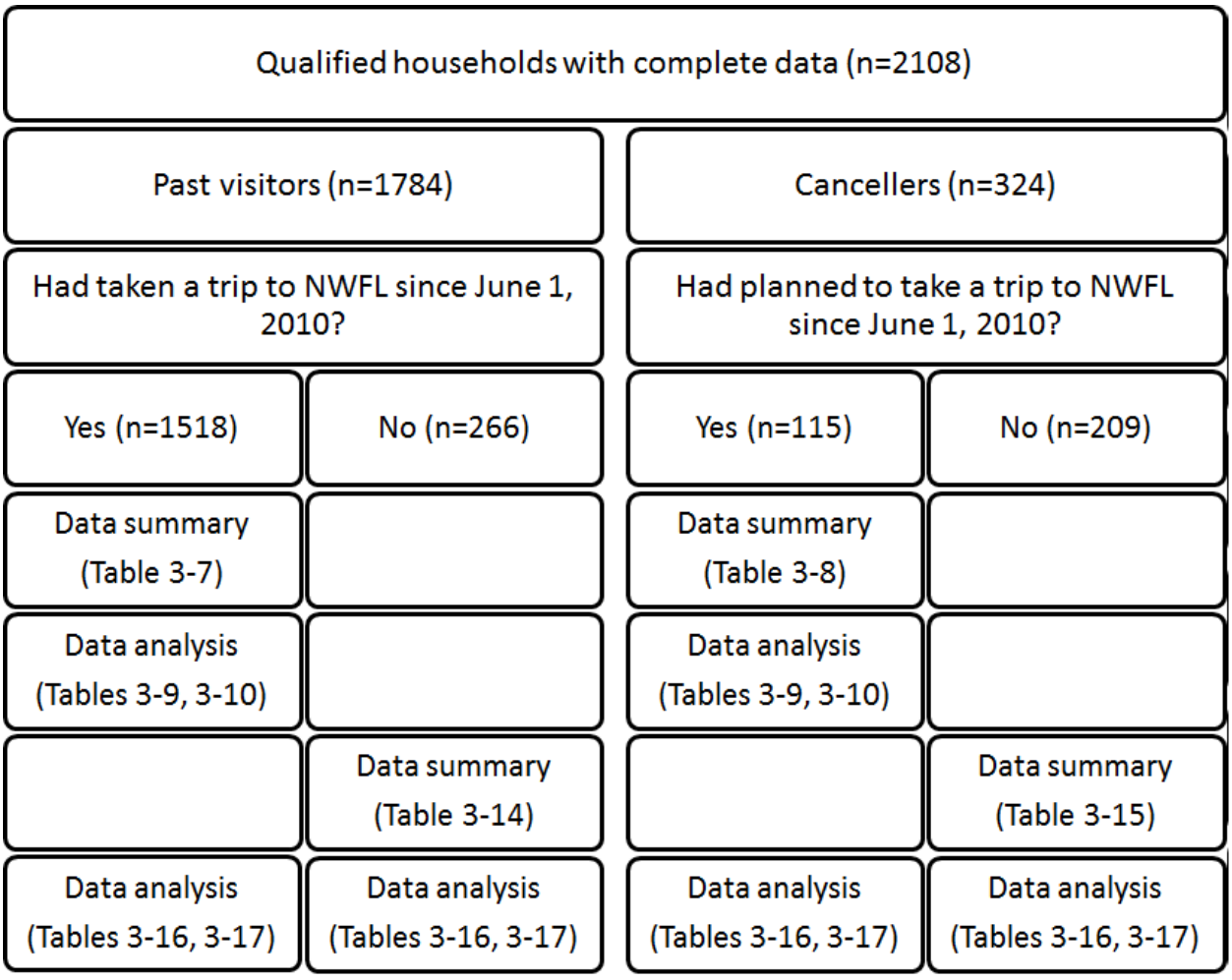

Figure 3-7. Summary of sample composition and location of data summary and single-site analyses

Since June 1, 2010, 1,518 past visitors and 115 cancellers had taken a trip or cancelled a trip to the study region due to the oil spill, respectively. Collectively, these two sub-samples constitute what we refer to as the "restricted" sample since they exclude information on those respondents without trip information (trips either taken or planned then cancelled) since the oil spill. The single-site TCM analysis begins with a summary of the data on each sub-sample and ends with a discussion of the data from the entire restricted sample, the

empirical results of recreation demand model that was estimated with the data, and the corresponding estimate (and precision of the estimate) of lost consumer surplus per trip generated from the model.

In Table 3-7 we present a summary of the TCM data for the restricted sample of past visitors, that is, those respondents that took a trip to the study region since June 1, 2010. In the stated preference (SP) scenario, households report that they would have taken an average of 2.50 trips without the oil spill (TRIPS1). With the oil spill, the average number of revealed preference (RP) trips is 2.35 (TRIPS2). We test for the difference in number of reported trips with and without the oil spill with a random effects linear regression model and no other covariates (explanatory variables). The 0.15 difference in average number of trips with and without the oil spill (2.50 – 2.35) is statistically significant at the p = 0.01 level.

Table 3-7. TCM variable descriptions for the restricted sample of "past visitors"

		Variable statistics (N = 1,518)			
Variable	Description	Mean	Std.Dev.	Min.	Max.
TRIPS1	Trips without oil spill (number)	2.50	4.72	1	49
TRIPS2	Trips with oil spill (number)	2.35	4.46	1	49
TC	Travel cost to NW FL ($)	543.75	388.91	2.18	2,252.49
SUBTC	Substitute site travel cost ($)	418.07	334.32	0.31	1,744.48
INCOME	Household income ($1,000)	63.01	41.81	2.50	175.00
EXCELLENT	1 if NW FL site quality is "excellent"	0.35	0.48	0	1

Notes: The sample of "past visitors" in this table (part of the restricted sample) reflects qualified respondents who took at least one trip to the study region since June 1, 2010 (since the spill, possibly under oiled conditions) and had complete data. NW FL represents "Northwest Florida" (i.e., the study region). For the dichotomous variable "EXCELLENT" the alternative category is 0 for "otherwise."

The calculated travel cost to the nearest sub-region in the study region (as shown in Figure 3-4) is $544. The calculated travel cost to the households' nearest alternative site (Texas through North Carolina) is $418. Average annual household income is $63,010. Of the households who visited the study region, 35 percent rated the quality of the site as excellent (EXCELLENT = 1), which was the highest category in the 5-point Likert type scale that was used (i.e., poor, fair, good, very good, excellent).

Referring back to Figure 3-7, of the group 2 "cancellers only" with ZIP code and income information (N = 324), 35 percent (N = 115) reported planning to visit and participate in saltwater-related activities in the study region but cancelled the trip(s) due to the oil spill. Of these, 82 percent (N = 94) report cancelling an average of 1.30 trips to the study region,

with a range of one to five cancelled trips. For those who reported cancelling a trip but did not report the number cancelled trips (N = 21), we impute one trip, which is a conservative assumption. The data summary for this sample is presented in Table 3-8.

Table 3-8. TCM variable descriptions and statistics for the restricted sample of "cancellers only"

		Variable statistics (N = 115)			
Variable	Description	Mean	Std. Dev.	Min.	Max.
TRIPS1	Trips without oil spill (number)	1.24	0.62	1	5
TRIPS2	Trips with oil spill (number)	0	0	0	0
TC	Travel cost to NW FL ($)	666.06	358.17	40.54	1,857.45
SUBTC	Substitute site travel cost ($)	450.22	309.19	1.39	1,160.28
INCOME	Household income ($1,000)	55.31	38.44	2.50	175.00
EXCELLENT	1 if NW FL site quality is "excellent"	0	0	0	0

Notes: The sample of "cancellers only" in this table reflects qualified respondents with complete information who cancelled what would have been their only trip(s) to the study region since the oil spill. NW FL represents "Northwest Florida" (i.e., the study region). For the dichotomous variable "EXCELLENT" the alternative category is 0 for "otherwise." All "cancellers only" are assumed to consider the site to be not of excellent quality with the oil spill; hence, they did not visit.

The average number of cancelled trips for the sample of cancellers to Northwest Florida (N = 115) is 1.24 trips. The calculated travel cost to the nearest sub-region in the study region is higher than in the sample without those who cancelled all of their trips, $666 compared to $544. The calculated travel cost to the households' nearest alternative site (Texas through North Carolina) is $450. Average annual household income is $55,310 compared to $63,010 in Table 3-7. For those households who cancelled all of their planned trips to the study region (TRIPS2 = 0), we code the site quality variable as not excellent (EXCELLENT = 0).

We next estimate the determinants of trips with the random effects Poisson demand model with information on pre- and post-spill trips from data in Tables 3-7 and 3-8.[29] The data analysis for the restricted sample that had either taken or planned and cancelled a trip to the study region (i.e., NWFL) since June 1, 2010 are presented in Table 3-9. The model includes all of the variables in Table 3-7 and an oil spill variable equal to one for the revealed preference scenario (OILSPILL = 1) and zero for the stated preference counterfactual scenario (OILSPILL = 0). The own-price (TC) coefficient is negative and

[29] See Whitehead, Haab and Huang (2011) for a discussion of the random effects Poisson model with revealed preference (RP) and stated preference (SP) data.

statistically significant. Demand is elastic with an own-price elasticity of −2.15.[30] The cross-price (SUBTC) coefficient has a positive effect on trips, indicating that the alternative site is a substitute, with a cross-price elasticity of 0.84. Income has a positive effect on trips, indicating that saltwater-related recreational trips to the study region are normal goods, with an elasticity of 0.39. Households who considered their most recently visited site to have "excellent" quality took one more trip. The effect of the oil spill on trips is statistically significant with a marginal effect of −0.22.

Table 3-9. Variable statistics and recreation demand model (trips per household, TRIPS) for the restricted sample of "past visitors" and "cancellers" (Tables 3-7 and 3-8, respectively)

	Variable statistics		Estimation results	
Variables	Mean	Std. Dev.	Coefficient	t-stat
TRIPS	2.30	4.46		
Constant	N/A	N/A	1.081	23.46
TC	552.36	387.93	−0.002	−18.74
SUBTC	421.52	333.46	0.001	8.04
INCOME	62.61	41.65	0.003	5.92
EXCELLENT	0.32	0.47	0.436	13.55
OILSPILL	0.50	0.50	−0.095	−2.33
α	N/A	N/A	0.649	20.66
Model statistics:				
Log likelihood			−5,794	
N			1,633	
Time periods			2	

Notes: TRIPS represents both TRIPS1 and TRIPS2, corresponding to the two time periods (before and after the spill, respectively). The restricted sample includes those that took or cancelled a trip to the study region due to the spill since June 1, 2010. N/A indicates the statistics is not applicable to the variable.

Consumer surplus estimates for the restricted sample that either took a trip or planned and cancelled a trip to the study region since June 1, 2010 are presented in Table 3-10 (N = 1,518 + 115 in Figure 3-7).[31] The consumer surplus (CS) per trip for each household is calculated at $587. The predicted number of trips per household without the oil spill is 2.42 compared to 2.20 with the oil spill. Total consumer surplus per household is the product of

[30] Elasticity in the Poisson model is estimated as $e_z = \beta_z^* z$, where β^* is the estimated effect of the Poisson coefficient and z is the mean of the variable.

[31] Consumer surplus per trip in the Poisson regression is equal to the negative inverse of the coefficient on the travel cost variable (i.e., one divided by the negative of the coefficient on TC). Consumer surplus estimates presented in this report vary from this formula due to rounding of the travel cost regression coefficient; all parametric results are available from the authors upon request. See Haab and McConnell (2002) for a more detailed discussion of the derivation of consumer surplus estimates with single-site models.

the estimated consumer surplus per trip and predicted number of trips per household. Total consumer surplus per qualified household is estimated to be $1,422 without the oil spill and $1,294 with the oil spill. The $128.19 difference in consumer surplus is statistically significant at the p = 0.05 level.

Table 3-10. Household consumer surplus (CS) per trip, number of trips per household and total consumer surplus estimates per household for the trip demand model in Table 3-9

Measure	Scenario (oil spill?)	Mean (per trip)	Standard Error
CS/trip ($)	Yes and no	$587	$31.51
Trips/household (num.):			
	No	2.42	0.09
	Yes	2.20	0.08
Total CS/household ($)			
	No	$1,422.23	$89.27
	Yes	$1,294.04	$95.79

Notes: Standard errors are estimated with 10,000 Krinsky and Robb simulations (Krinsky and Robb, 1986).

Contingent Valuation Method (CVM) Results – Restricted Sample

The single-site CVM is used next to estimate the value of recreation trips by asking past visitors if they "would have visited Northwest Florida for your most recent trip if your travel and lodging expenses were $[X1] higher?" The variable X1 is the product of the reported expenses and a randomly assigned percentage, Y1, from five alternatives: 25%, 50%, 75%, 100%, or 125%. The average reported expenses (cost of travel and lodging) were $1,108 (Table 3-11). The average change in trip cost is $610, with a minimum of $3.20 and a maximum of $5,000. Among this restricted sample of past visitors (N = 1,518), 90 percent considered their most recent trip to be a "typical trip" and 35 percent rated trip quality as "excellent." Average household income is $63,000.

The majority of these respondent households, 67 percent, indicated that they still would have taken the trip with higher costs (YES1 = 1). These households were then asked a follow-up question about certainty. Those who were "very sure" that they would actually be willing to pay the change in trip costs comprised 40 percent of households, 43 percent were "somewhat sure," 11 percent were "neither sure or unsure," 5 percent were "somewhat unsure", and 2 percent were "very unsure" or did not answer the follow-up question (N = 3).

Table 3-11. Variable descriptions and statistics for the CVM models

		Variable statistics (N = 1,518)			
Variable	Description	Mean	Std. Dev.	Min.	Max.
YES1	1 if willing to pay DTLC	0.67	0.47	0	1
YES2	1 if willing to pay DTLC (somewhat sure)	0.55	0.50	0	1
TLC	Travel and lodging cost to NW FL ($)	1,108.0	1,187.9	3.2	5,000
DTLC	Change in travel and lodging cost ($)	610.2	444.3	4	1,250
INCOME	Household income ($1,000)	63.0	41.8	2.5	175
EXCELLENT	1 if NW FL site quality is "excellent"	0.35	0.48	0	1
TYPICAL	1 if most recent trip is a typical trip	0.90	0.30	0	1

Notes: The respondent was presented with a dichotomous choice question (i.e., answer format was "yes" or "no"). In particular, respondents were asked whether they were willing to pay the higher travel and lodging costs that was based on what they reported (i.e., DTLC = TLC*Y1). For all dichotomous variables the alternative value is 0 for "otherwise."

To consider the effect of the surety (uncertainty) of response, an alternative coding was used.[32] Of the households who indicated that they were willing to pay the higher trip costs, 55 percent were at least somewhat sure they would pay higher trip costs (YES2 = 1). Of those who are not willing to pay the higher trip costs (YES1 = 0), 33 percent stated that they would have stayed home instead of taking the trip, 24 percent stated that they would have taken a similar trip closer to home, 13 percent stated that they would have taken a different type of trip, 9 percent would have done some other activity, 8 percent would have taken a shorter trip to the same location, and 12 percent are unsure about what they would have done.

We estimate the determinants of willingness to pay under different levels of certainty[33] with a probit model assuming a non-linear relationship between the probability of being willing to pay more and the continuous variables in the model. In particular, we take the natural logarithm of trip cost (reported travel and lodging costs, TLC), the change in trip cost (DTLC) respondents were asked to evaluate, and income (INCOME). Results of both models are shown in Table 3-12.

Qualitative results are generally consistent between the two models. In each model the likelihood that respondents would pay higher costs: (1) decreases with increases in the change in trip cost, (2) increases with increases in the baseline trip costs or household income, and (3) increases if the quality of the site on the most recent trip was considered

[32] See Loomis (2011) for a discussion of hypothetical bias and respondent uncertainty.
[33] See Cameron and James (1987) and Haab and McConnell (2002) for details on dichotomous choice CVM data and the probit model.

"excellent." Whether or not their most recent trip was typical did not affect whether they would be willing to pay more. The YES1 model represents the best statistical fit according to the model chi-squared statistic.

Table 3-12. Willingness to pay higher trip cost model results by certainty of response

	YES1 model (YES1 =1 if WTP DTLC)		YES2 model (YES2 = 1 if at least somewhat sure WTP DTLC)	
Variable	Coefficient	t-stat	Coefficient	t-stat
Constant	0.49	1.98	0.02	0.10
LN(DTLC)	−0.70	−9.85	−0.42	−6.52
LN(TLC)	0.57	8.93	0.30	5.17
LN(INCOME)	0.12	2.82	0.15	3.65
EXCELLENT	0.14	1.92	0.21	2.97
TYPICAL	−0.02	−0.21	0.01	0.06
Model statistics:				
Model χ^2	110.43		62.55	
N	1,518		1,518	

An examination of the estimated coefficients in the models reveals that as respondent certainty increases (from YES1 to YES2), the effects of the change in trip cost (DTLC) and trip cost (TLC) diminish. However, the willingness-to-pay elasticity of baseline trip cost,[34] 0.82 in the YES1 model and 0.72 in the YES2 model, are not significantly different. The income elasticity is 0.17 in the YES1 model compared with 0.36 in the YES2 model; however, the differences in income elasticities are not statistically significant given relatively wide 95 percent confidence intervals.

The median willingness-to-pay (WTP) estimates that reflect the economic value of each trip to each qualified household (i.e., per trip consumer surplus estimated at the household level) are presented in Table 3-13. We calculate the consumer surplus at the mean values of trip cost, income, and trip quality. In addition, the typical trip variable (TYPICAL) is set equal to one. The estimated consumer surplus falls as respondent certainty about payment increases. In the case of YES1, 50 percent of the sample would be willing to pay $747.78 or more and 50 percent would be willing to pay less. With YES2, 50 percent of the sample is at least somewhat sure that they would be willing to pay $488.23 or more. The consumer surplus estimates are statistically different. The 95 percent confidence interval for YES1 and YES2 ranges from $624 to $871 and $397 to $579, respectively.

[34] Willingness-to-pay elasticities equal the coefficient of the variable of interest divided by the negative of the coefficient on the change in trip cost.

Table 3-13. Median per-trip consumer surplus (CS) estimates on a per household (hh) basis by certainty of response to the CVM question

YES1 model (YES1 = 1 if WTP DTLC)		YES2 model (YES2 = 1 if at least somewhat sure WTP DTLC)	
CS/trip/hh	Std. Error	CS/trip/hh	Std. Error
$747.78	$62.91	$488.23	$46.51

Notes: Standard errors are estimated with 10,000 Krinsky and Robb simulations. Krinsky and Robb and Delta method (Cameron, 1991) confidence intervals are similar for the YES1 and YES2 model.

Comparing these estimates to the consumer surplus per trip from the recreation demand model in Table 3-10 indicates that the confidence intervals from the YES1 and YES2 models overlap with the confidence interval from the single-site TCM-based recreation model. The YES1 willingness to pay estimate overlaps from above and the YES2 estimate overlaps from below. These results lend convergent validity to both CVM measures of economic value shown in Table 3-13 and the TCM measure of economic value shown in Table 3-10.[35]

Travel Cost Method (TCM) Results – Full Sample

In the previous analyses we have excluded those who had not taken a trip to Northwest Florida since June 1, 2010 in order to enhance comparability of the TCM and CVM questions (since the CVM can only be estimated with data from "past visitors") and assess the validity of both methods applied to the stated preference cancelled trips. In this section we expand our analysis to include those who had participated in saltwater recreation over the past two years but had not visited the study region since June 1, 2010 (i.e., observations with 0 trips). We first describe these data and then re-estimate the recreational demand model including these data for a complete representation of preference revelation. In addition, in order to better estimate the lost value to qualified households in Florida only, we define two new variables for use in the model (i.e., dummy variables to identify Florida households and overnight trips).

From the "past visitors" sample there are 266 households who had visited the study region within the past two years and (a) had not visited since June 1, 2010 and (b) have non-missing ZIP code and household income data (Figure 3-7). The mean travel cost is higher,

[35] Note that the TCM consumer surplus is a Marshallian measure of value while the CVM willingness to pay is a Hicksian measure of value. Income effects are expected to be small so producing exact (Hicksian) measures from the TCM consumer surplus value is not likely to change this result. In addition, the results of this comparison do not change if the same sample size is used in the TCM analysis (N = 1,518). The coefficient on the travel cost variable is -0.0016 and the consumer surplus per trip estimate is $627 (SE = $34.31). The full regression results are available from the authors upon request.

$645.78 (Table 3-14), than for the 1,518 past visitors who had taken a trip since June 1, 2010, $543.75 (Table 3-7). Travel cost to the households' nearest alternative site (Texas through North Carolina) is also higher, $475.99 compared to $418.07. Average annual household income is very similar, rounding to $63,000 for both groups of households.

Table 3-14. TCM variable descriptions and statistics for historic "past visitors" to the study region

		Variable statistics (N = 266)			
Variable	Description	Mean	Std. Dev.	Min.	Max.
TC	Travel cost to NW FL ($)	645.78	384.41	1.84	1,803.28
SUBTC	Substitute site travel cost ($)	475.99	341.79	1.55	1,431.54
INCOME	Household income ($1,000s)	62.84	41.66	2.50	175.00

Recall that the "cancellers only" sample contained 324 households with complete ZIP code and household income data. Of these, 209 did not cancel a trip to the study region but did cancel at least one trip to other Southeastern U.S. coastal sites due to the *BP/Deepwater Horizon* oil spill (Figure 3-7). The mean travel cost, $689.58 (Table 3-15), is similar to the mean travel cost of the 115 past visitors who had cancelled a trip due to the oil spill ($666.06; Table 8). Travel cost to the households' nearest alternative site is lower, $389.00 compared to $450.22 (Tables 3-15 and 3-8, respectively). Average annual household income is lower, $52,520 compared to $55,310 for those who had cancelled a trip (Tables 3-15 and 3-8, respectively).

Table 3-15. TCM variable descriptions and statistics for "cancellers only" to other Southeastern U.S. coastal areas

		Variable statistics (N = 209)			
Variable	Description	Mean	Std. Dev.	Min.	Max.
TC	Travel cost to NW FL ($)	689.58	366.08	70.21	1,818.54
SUBTC	Substitute site travel cost ($)	389.00	339.02	1.27	1,758.69
INCOME	Household income ($1,000s)	52.52	39.67	2.50	175.00

We include these additional 475 historic past or potential visitors (i.e., N = 266 + 209)[36] for a total of 2,108 qualified households with complete data (Figure 3-7). Before estimating the parametric model, a non-parametric test (Kruskal-Wallis) was conducted on the trips variable that reflects trip behavior before and after the oil spill. The test statistic chi-square

[36] Historic past visitors are those who had visited the study region within the past two years but not since June 1, 2010 (Table 3-15). Potential visitors are those who did not take or cancel a trip to the study region since June 1, 2010 but did cancel at least one trip to other Southeastern U.S. coastal sites (Table 3-16).

of 15.48 indicates that the number of trips is statistically lower with the oil spill (d.f. = 1, $p < 0.0001$) (Kruskal and Wallis, 1952).

The full sample of 2,108 households was used to estimate the determinants of trips (TRIPS) with the random effects Poisson demand model. In addition, two new variables were defined to better estimate lost consumer surplus for qualified households in Florida. The first identified Florida households (FL = 1). The second identified overnight trips (NIGHT = 1). Both dummy variables were used to create interactions with travel costs (TC). The model was then estimated with and without these new variables (Table 3-16).

Table 3-16. Variable statistics of the full sample and estimates of recreation demand models (trips per household, TRIPS) with and without Florida-specific variables

	Variable statistics		Model 1		Model 2	
Variables	Mean	Std. Dev.	Coefficient	t-stat	Coefficient	t-stat
TRIPS	1.792	4.055				
Constant	N/A	N/A	0.720	15.49	0.320	5.84
FL	0.24	0.43	N/A	N/A	1.223	21.04
TC	577.76	388.20	−0.002	−22.16	−0.004	−24.00
TC x FL	49.46	117.72	N/A	N/A	−0.002	−12.19
TC x NIGHT	386.61	415.09	N/A	N/A	0.003	29.56
SUBTC	425.17	335.61	0.001	11.33	0.001	4.10
INCOME	61.64	41.92	0.005	7.02	0.003	5.02
EXCELLENT	0.28	0.45	0.616	14.65	0.497	12.33
OILSPILL	0.50	0.50	−0.104	−2.78	−0.104	−2.45
α	N/A	N/A	1.135	28.97	0.714	23.67
Model statistics:						
Log likelihood			−6,397		−5,998	
Observations (N)			2,108		2,108	
Time periods			2		2	

Notes: The statistics on TRIPS is representative of both time periods (i.e., with and without the oil spill). FL = 0 if the observation corresponded to a non-Florida household. NIGHT = 0 if the observation reflected a day trip to the study region. N/A indicates the statistics is not applicable to the variable.

The first model, Model 1, is comparable to the model in Table 3-9 and can be used to examine the effects of including the zero trips. We find little obvious difference other than greater income effects.

In the second model, Model 2, we include additional variables in order to isolate the effects of the oil spill on Florida households (FL = 1) and for those who spent at least one night on

their trip (NIGHT = 1). By including interaction variables, the travel cost coefficient for Florida households who do not stay overnight is measured as the sum of the coefficients on TC and TC x FL. We find that the own-price coefficient for Florida residents is statistically and significantly higher (in absolute value) than for non-residents. The cross-price and oil spill coefficients are unchanged in the Florida model, while the income coefficient is smaller. In addition, Florida households are shown to take significantly more trips to the study region than non-residents. The own-price coefficients are also statistically significant but lower (in absolute value) for those spending at least one night.

The corresponding consumer surplus estimates are presented in Table 3-17. First, note that the consumer surplus per trip using Model 1 ($460) is lower than the consumer surplus per trip from the revealed preference data with the restricted sample ($587; Table 3-10), and this difference is significant since the confidence intervals do not overlap.

Table 3-17. Estimates of consumer surplus (CS) per trip, trips per household (hh) and consumer surplus per household by model specification

		Model 1		Model 2: Florida qualified hh			
	Scenario	All qualified hh		Day trips only		Day & night trips	
Measure	(oil spill?)	Mean	Std. Err.	Mean	Std. Err.	Mean	Std. Err.
CS/trip ($)	Yes & no	$460	$20.82	$167	$4.81	$345	$18.51
Trips/hh (number):							
	No	1.65	0.05	3.02	0.17	3.02	0.17
	Yes	1.48	0.05	2.73	0.14	2.73	0.14
Total CS/hh ($):							
	No	$757	$39.79	$505	$27.93	$1,044	$62.23
	Yes	$682	$41.73	$455	$24.24	$941	$57.50

The change in consumer surplus estimated from Model 1 is $74.45 (i.e., $756.91 - $682.46) with a standard error of $26. Since the sample includes non-participants (e.g., those who had not taken a trip since June 1, 2010) it represents a larger population, all 6.44 million qualified households. Aggregating the lost consumer surplus over the 6.44 million qualified households yields a loss of economic value due to the oil spill to the 13-state market area of $479 million, with a 95 percent confidence interval of $151 million to $808 million.
With Model 2, and focusing only on qualified Florida households, consumer surplus estimates are conservatively generated for Floridians simulating day trips.[37] This closely simulates single-purpose trips for which we can be most confident that enjoyment of saltwater resources in Northwest Florida is the primary purpose of the trip. The consumer

[37] Consumer surplus per trip is estimated as the negative inverse of the sum of the TC and TC x FL coefficients (i.e., with NIGHT = 0). Trips are predicted at the means of the explanatory variables.

surplus per trip is $167. The predicted number of trips per Florida household with and without the oil spill is 2.73 and 3.02, respectively.[38] Total consumer surplus per household is the product of consumer surplus per trip and number of trips per household. Total consumer surplus is estimated at $505 without the oil spill and $455 with the oil spill on a per household basis. The $50 difference in per household consumer surplus is statistically significant at the p = 0.05 level.

We aggregate these household estimates of lost values over the 1.08 million qualified households in Florida. The aggregate estimate of reduced trips is equal to approximately 323,000, with a 95 percent confidence interval of 70,000 to 577,000 trips. Aggregating the lost consumer surplus over the Florida households yields a loss of economic value of $53 million, with a 95 percent confidence interval of $10 million to $97 million.

For comparison, consumer surplus estimates are next generated for those Floridians simulating day and overnight trips. The consumer surplus per trip is $345. Total consumer surplus per household is estimated at $1,044 without the oil spill and $941 with the oil spill. The $103 difference in per household consumer surplus is statistically significant at the p = 0.05 level. Aggregating the lost consumer surplus over the qualified Florida households yields a loss of economic value due to the oil spill of $111 million, with a 95 percent confidence interval of $22 million to $199 million. This estimate is more accurate to the extent that the sole purpose of overnight trips is saltwater-related recreation.

Multi-site Analysis

To estimate the lost welfare (economic value) due to changes in recreation patterns post-oil spill, we estimate the change in trip choice patterns demand pre- and post-spill (i.e., without and with oil, respectively) among the population of qualified households. For analytical purposes we analyze site substitution among three samples: All Qualified Households (N = 2,108), Florida Households (N = 508) and Non-Florida Households (N = 1,600). In all estimation and calculations, sample observations are weighted to ensure proper population representation.

As previously reported, there are 6.44 million "qualified" households (past and potential visitors to the study region from the 13-state market area) of which 16.7 percent are located in Florida (N = 1.08 million) and the remainder are in the other 12, non-Florida, states (N = 5.36 million).

[38] The average number of trips per household with and without the oil spill are 3.21 and 3.52, respectively, for Florida residents (N = 508) and 1.22 and 1.37, respectively, for non-Florida residents (N = 1,600).

Random Utility Model (RUM) and Valuation Methodology

On a particular choice occasion, household members choose to visit a site j (j = 1, 2 , … , 11) based on the utility the attributes of that site provide. The utility a household would receive from visiting site j is assumed to be a simple linear function

$$\text{Utility of visiting site j} = \beta_j + \beta_y(\text{income - cost of visiting j}) + \varepsilon_j$$

where β_j is a site-specific constant; β_y is the marginal utility of income, which is the coefficient on the post-trip income variable "(income - cost of visiting j);" and ε_j is a random error component.

The cost of visiting site j is defined as the round-trip travel cost defined earlier (tc_{ij}). Recall that in using the TCM framework, travel cost is calculated as the cost of travel plus the opportunity cost of the time taken to travel to the site. Table 3-18 summarizes the travel cost and income data for the sample of 2,108 qualified households with complete data.

Table 3-18. Summary of travel cost, substitute travel cost and household income by destination for the qualified households (N = 2,108)

Variable	Mean	Standard Deviation
Travel cost from home to destination:		
Northwest Florida (study region)	$575.77	$390.56
Texas	$1,133.78	$469.76
Louisiana	$732.17	$340.75
Mississippi	$685.23	$332.99
Alabama	$647.24	$335.80
Southwest Florida	$891.66	$513.68
Florida Keys	$1,147.42	$565.44
Florida Atlantic	$922.33	$529.72
Georgia	$743.34	$437.19
South Carolina	$812.61	$419.31
North Carolina	$1,031.58	$433.04
Household income ($1,000)	$62.24	$42.11

On any particular choice occasion, members of a household face a choice among the 11 sites. Given these alternative destinations, the household will choose to visit site j on a particular choice occasion if the utility of visiting site j is greater than the utility of visiting any other site. The probability that a household visits site j (for all sites other than j) can be written as

Probability of visiting site j = Pr(Utility of visiting site j > Utility of visiting site i)

Given the assumption of a Type-I extreme value error term distribution for each site, the probability of visiting site j is written as

$$\Pr(j) = \frac{e^{\beta j + \beta y(\text{income} - \text{cost of visiting j})}}{\sum_{i \neq j} e^{\beta i + \beta y(\text{income} - \text{cost of visiting i})}}$$

This is known as the conditional logistic distribution and the estimation of the parameters is referred to as a conditional logit. In contrast to single-site demand models, the conditional logit random utility model (RUM) accounts for substitution patterns among alternatives. In the current study, households could have taken more than one trip to any of the 11 study sites during the study period. Each of these trips is treated as independent.[39]

Haab and McConnell (2002) show that based on the standard formulation of the conditional logit RUM presented above, the lost economic value due to closure of site j is

$$\text{Value of Lost Trip due to Closure of Site j} = -\frac{\ln(1 - \Pr(j))}{\beta_y}$$

To calculate the value of a cancelled trip, we need estimates of the probability of visiting a site (which can be calculated from the estimated parameters of the model) and an estimate of the marginal utility of income (i.e., the coefficient on the post-trip income variable).

Reported and Counterfactual Trips

Ideally we would have information on trips taken prior to the oil spill to establish the appropriate baseline for comparison. In lieu of such information we use self-reported data on cancelled, replaced, and added trips to construct the counterfactual of the demand for trips taken prior to the oil spill. Tables 19a and 19b summarize the methods for defining the pre- and post-spill trips to each site.

[39] This model assumes all trips are independent; that is, potential correlations at the respondent level are not considered. Relaxing this assumption is complicated here due to the number of choice sets.

Table 3-19a. Post- and pre- (counterfactual) oil spill trip definitions, methods and related survey questions

Trip destination (i)	Type of trips	
	Reported trips since June 1, 2010 (yi = number of post-spill trips)	Constructed counterfactual trips (xi = number of estimated pre-spill trips)
1. Northwest Florida (i.e., study region)	Trips to Northwest Florida after the oil spill (y1) are defined as the number of trips taken since June 1, 2010 [QB1D].	Trips to Northwest Florida before the oil spill are constructed from responses on trips since June 1, 2010 and trips cancelled due to the oil spill. If the household visited Northwest Florida since June 1, 2010, x1 = QB1D. If the household had not visited Northwest Florida since June 1, 2010 but indicated at least one cancelled trip [QA6 = {1,2,3,4,5 or 6}], x1 is defined as the number of cancelled trips [QA7_ONE_i].
Alternative Sites:		
2. Southwest Florida 3. Florida Keys 4. Florida Atlantic 5. Texas 6. Louisiana 7. Mississippi 8. Alabama 9. Georgia 10. South Carolina 11. North Carolina	Trips to alternative sites after the oil spill (y2-y11) are defined as trips to other areas in the Southeast since June 1, 2010 [QB9 followed by QB10A_a-j].	Trips to alternative sites before the oil spill are constructed from responses on trips since June 1, 2010 [QB9] and trips substituted, added or cancelled due to the oil spill. If any trips to the Southeast were replacement trips for trips affected by the oil spill or trips added after the oil spill [QB11 = 1 and QB12_a-j_How = 2 or QB12_i_How = 3], the replacement or added trips [QB12_i_Num] are subtracted from the trips taken since the oil spill [QB_10a_i] to reconstruct trips prior to the spill. Any cancelled trips to alternative sites and not replaced or added (QB_13 = 1 and QB14A_i = 1) are added back to trips taken.

Notes: The pre-spill number of trips (counterfactuals) are used to estimate parameters of the RUM from which per trip welfare losses are estimated, and then post-spill numbers (as reported) are used to aggregate per-trip losses for all cancelled trips that were not replaced or substituted. The order of alternative sites is listed here in the order that was presented to respondents in the survey.

Table 3-19a contains an identification and description of how specific survey variables were used to calculate both the reported and counterfactual number of trips, making a distinction between sites in the study region and those from the three other defined coastal regions of Florida and the seven other Southeastern U.S. states that arguably offer comparable recreational opportunities to sites in the study region.

The counterfactual pre-spill trips (i.e., estimated number of trips that would have been taken had the oil spill not occurred) in the far right column of Table 3-19a are defined as the total number of trips taken post-spill plus any trips reported cancelled to the site, minus any trips that were added to a site as a replacement for a cancelled trip. For example, if a household reports having cancelled two trips to the study region (i.e., 12 coastal counties in Northwest Florida) post-spill and replacing one of those trips with a trip to a destination on the Atlantic coast of Florida, the pre-spill trip construction adds two trips back to the study region and subtracts one trip from the Atlantic coast.

Table 3-19b provides an identification of the specific questions that provided the information needed to construct the reported and counterfactual trips. For reference, the questionnaire is included in Appendix C. This is not an exhaustive list of survey variables used in this report; it only contains variables used to define the trips that are necessary for the analysis.

Table 3-19b. Survey questions used for trip definitions

Number	Question
QA6	What coastal area(s) would you have visited in Northwest Florida had you not changed your plans?
QA7_ONE_a	About how many of these trips did you start planning and then cancel or change your destination because of the oil spill last summer?
QB1D	How many total trips did you take to the Northwest Florida region that included saltwater related activities since June 1, 2010?
QB9	Excluding any past trip(s) to Northwest Florida, how many trips with saltwater-related activities did you take to other areas in the Southeast since June 1, 2010?
QB10A_i	How many trip(s) did you take to each state or area?
QB11	Were any of your trips to the Southeast United States since June 1, 2010, including your trip(s) to Northwest Florida you previously reported, affected by the oil that was spilled into the Gulf of Mexico last summer?

Number	Question
QB12_i_How	Please indicate how many of these trips were affected by the oil spill and how they were affected.
QB12_i_Num	Please indicate how many of these trips were affected by the oil spill, and how they were affected.
QB_13	Did you cancel any coastal trips to the U.S. Gulf of Mexico due to the oil spill that started in April 2010 and continued through last summer?
QB14A_i	Where did you intend to go for the trips you cancelled?
QB14B_i	How many trips did you cancel to each area?

Notes: In the survey, the "Northwest Florida" study region was shown to respondents using the map in Figure 3-4. The index i represents the potential alternative sites. The questionnaire is in Appendix C.

Table 3-20 reports the number of added or replaced and cancelled trips to each of the 11 sites in the time period between June 1, 2010 and when the respondent took the survey (i.e., August 12 – September 24, 2011), approximately 15 – 16 months. Despite the significant media coverage the spill received, less than 10 percent of respondents (210 out of 2,108) indicated that they had changed their recreation plans for past trips to the study region.

Table 3-20. Summary of the number and nature of how saltwater-related trips to the study region were affected by the *BP/Deepwater Horizon* oil spill

	How trips affected (N = 2,108)	
Intended destination	Added or replaced trips	Cancelled trips
Northwest Florida (study region)	41	169
Texas	28	100
Louisiana	25	128
Mississippi	15	80
Alabama	17	84
Southwest Florida	19	73
Florida Keys	13	57
Florida Atlantic	17	0
Georgia	12	0
South Carolina	17	0
North Carolina	10	0

Based on the definitions for trips in Tables 3-19a and 3-19b, Table 3-21 summarizes the number of trips taken pre- and post-oil spill (without and with oil, respectively) to all 11 sites for the sample of 2,108 qualified households with complete data and the average percentage change in trips due to the oil spill as calculated from the counterfactual pre-spill trips. Because the sample of respondents was chosen based on potential visits to the study region in Northwest Florida, the number of trips to the study region is greater than the number of trips to other destinations.

Table 3-21. Average number of pre- and post-spill saltwater-related recreational trips per household by destination (N = 2,108)

Destination	Pre-spill (counterfactual)	Post spill (reported)	Difference
Northwest Florida (study region)	1.76	1.68	−4.3%
Texas	0.33	0.25	−24.4%
Louisiana	0.26	0.14	−46.9%
Mississippi	0.24	0.12	−49.0%
Alabama	0.22	0.14	−35.9%
Southwest Florida	0.37	0.29	−20.9%
Florida Keys	0.20	0.12	−41.1%
Florida Atlantic	0.29	0.30	3.8%
Georgia	0.13	0.14	6.5%
South Carolina	0.11	0.12	7.5%
North Carolina	0.06	0.07	7.1%

Notes: The pre-spill counterfactuals measure the number of trips estimated to have occurred had the oil spill not happened (an estimate of trips without oil). The post-spill trips measure the number of trips that were reportedly taken after the spill.

It is important to keep in mind throughout these results that the population of interest is defined as the 6.44 million "qualified" households who represent past and potential visitors to the study region from the 13-state market area (i.e., approximately 89 percent of domestic visitors). All results are aggregated to that population or disaggregated into Florida and non-Florida households.

As expected, the oil spill caused a decrease in the average number of trips taken to Gulf Coast destinations and an increase in the average number of trips taken to Atlantic Coast sites by past or potential visitors to the study region (i.e., 12 coastal counties in Northwest Florida).

RUM Results: Site Choice and Valuation of Lost Trips

To estimate the change in value due to changes in recreation behavior in the year following the oil spill, we estimate the conditional logit random utility model (RUM) for all 11 sites for three samples: All Northwest Florida Visiting Households (i.e., all households in the market area for saltwater-related recreation in Northwest Florida), Florida Households Only, and Non-Florida Visiting Households.[40] Table 3-22 reports the pre-oil spill RUM estimates based on counterfactual trip demands as described in Tables 3-19a and 3-19b. This provides estimates of household trip behavior in the absence of the oil spill. Ten site-specific intercepts are reported; for estimation necessity, the intercept for the study region is omitted so all estimated intercepts are relative to the omitted "Northwest Florida" intercept.

The pre-oil spill (without oil spill) random utility parameter estimates conform to expectations. The marginal utility of income has a positive and statistically significant ($p < 0.01$) coefficient in all three samples. The site specific intercepts are all negative, indicating lower probabilities of visitation relative to Northwest Florida holding travel cost and income constant. This is to be expected since the sample of households in the full sample is chosen based on prior or planned visitation to Northwest Florida.

Tables 3-23a, 3-23b, and 3-23c present the trip counts and trip distributions for the three samples. The probability of a site being chosen (Pr(j)) can be obtained from the In-Sample Weighted Trip Distribution reported in each table. For example, the probability of a household from the full sample choosing to visit Northwest Florida on a particular choice occasion before the spill is 0.4426 (Table 3-23a, first row, fourth column). Using the estimated marginal utility of income from the full sample random utility model in Table 3-22 ($\beta_y = 0.0013$), the value of a lost trip to Northwest Florida to a household drawn from the full-sample is $464.61.[41]

[40] This analysis uses the full sample with complete data and then subdivides the sample into Florida and non-Florida households since estimates of the former are of most interest in this study. To facilitate the discussion of the 11 sites, the study region is referred to as "Northwest Florida" for these analyses.

[41] This value is calculated using the formula provided earlier. In this case, $464.61 equals $-\ln(1-0.4426)/0.0013$. The number is not exact due to rounding, especially of the β_y parameter which is less than 0.0013.

Table 3-22. Pre-oil spill random utility model parameter estimates

	All Qualified Households (full sample)			Florida Households Only			Non-Florida Households Only		
	Estimate	Std. Error	t-value	Estimate	Std. Error	t-value	Estimate	Std. Error	t-value
Site-specific intercepts:									
Texas	−1.54	0.07	−20.68	−1.56	0.08	-20.09	-1.58	0.08	-19.80
Louisiana	−1.91	0.08	−25.38	−2.25	0.09	-25.01	-1.96	0.08	-23.27
Mississippi	−2.19	0.08	−26.22	−2.35	0.09	-25.49	-2.26	0.10	-23.79
Alabama	−1.98	0.07	−26.49	−2.14	0.08	-26.00	-1.96	0.08	-23.80
Southwest Florida	−1.46	0.07	−21.13	−1.50	0.07	-20.74	-1.53	0.09	-16.26
Florida Keys	−1.53	0.08	−18.41	−1.60	0.09	-18.10	-1.46	0.12	-12.46
Florida Atlantic	−1.67	0.08	−21.97	−1.52	0.07	-20.68	-1.82	0.11	-17.01
Georgia	−2.40	0.09	−25.32	−2.28	0.09	-24.78	-2.34	0.11	-21.69
South Carolina	−2.26	0.09	−24.62	−2.09	0.09	-23.94	-2.21	0.10	-21.69
North Carolina	−2.50	0.12	−21.67	−2.35	0.11	-21.11	-2.53	0.13	-19.40
Marginal utility of income:									
(Inc.-Travel Cost)	0.0013	0.0001	17.32	0.0013	0.0001	17.57	0.0012	0.0001	12.37
Model statistics:									
Log Likelihood		−6,187.53			−1,618.90			−4,558.33	
Observations (N)		2,108			508			1,600	

Notes: The number of observations (N) refers to the number of respondents, not the number of observations used in the RUM. Recall that the RUM uses trips (all trips taken and all substitute sites rejected for each) and so the number of observations analyzed is much larger.

Table 3-23a. Estimated weighted trip counts and distribution of trips before and after the *BP/Deepwater Horizon* oil spill for all qualified households (N = 2,108)

	In-sample trip count			In-sample trip distribution (% of total trips = Pr(j))	
	Before	After	Percent Change	Before	After
Northwest Florida	3,832	3,669	−4.3%	44.26%	49.91%
Texas	715	540	−24.4%	8.25%	7.35%
Louisiana	563	299	−46.9%	6.51%	4.07%
Mississippi	531	271	−49.0%	6.14%	3.69%
Alabama	479	307	−35.9%	5.53%	4.18%
Southwest Florida	799	632	−20.9%	9.23%	8.60%
Florida Keys	428	252	−41.1%	4.95%	3.43%
Florida Atlantic	634	658	3.8%	7.32%	8.95%
Georgia	294	313	6.5%	3.40%	4.26%
South Carolina	241	259	7.5%	2.78%	3.52%
North Carolina	141	151	7.1%	1.63%	2.05%
Total	8,658	7,351			

Notes: The numbers of trips were calculated using Knowledge Networks stratification weights. The totals may not equal the sums of the individual numbers due to rounding.

Table 3-23b. Estimated weighted trip counts and distribution of trips before and after the *BP/Deepwater Horizon* oil spill for qualified Florida households (N = 508)

	In-sample trip count			In-sample trip distribution (% of total trips = Pr(j))	
	Before	After	Percent Change	Before	After
Northwest Florida	1,674	1,654	−1.2%	51.41%	55.13%
Texas	84	55	−34.5%	2.58%	1.83%
Louisiana	120	47	−60.9%	3.69%	1.57%
Mississippi	127	75	−40.9%	3.90%	2.50%
Alabama	88	69	−21.6%	2.70%	2.30%
Southwest Florida	411	373	−9.2%	12.62%	12.43%
Florida Keys	153	103	−32.7%	4.70%	3.43%
Florida Atlantic	417	429	2.9%	12.81%	14.30%
Georgia	70	78	11.4%	2.15%	2.60%
South Carolina	65	67	3.1%	2.00%	2.23%
North Carolina	47	50	6.4%	1.44%	1.67%
Total	3,256	3,000			

Notes: The numbers of trips were calculated using Knowledge Networks stratification weights. The totals may not equal the sums of the individual numbers due to rounding.

Table 3-23c. Estimated weighted trip counts and distribution of trips before and after the *BP/Deepwater Horizon* oil spill for qualified non-Florida households (N = 1,600)

	In-sample trip count			In-sample trip distribution (% of total trips = Pr(j))	
	Before	After	Percent Change	Before	After
Northwest Florida	2,154	2,015	−6.5%	39.91%	46.31%
Texas	631	485	−23.1%	11.69%	11.15%
Louisiana	443	252	−43.1%	8.21%	5.79%
Mississippi	404	196	−51.5%	7.49%	4.50%
Alabama	391	238	−39.1%	7.24%	5.47%
Southwest Florida	388	259	−33.3%	7.19%	5.95%
Florida Keys	275	149	−45.9%	5.10%	3.42%
Florida Atlantic	217	229	5.5%	4.02%	5.26%
Georgia	224	235	4.9%	4.15%	5.40%
South Carolina	176	192	9.1%	3.26%	4.41%
North Carolina	94	101	7.4%	1.74%	2.32%
Total	5,398	4,351			

Notes: The numbers of trips were calculated using Knowledge Networks stratification weights. The totals may not equal the sums of the individual numbers due to rounding.

To find the economic losses associated with multiple, simultaneous, site closures we use the same method and simply sum the probabilities from the trip distribution for the affected sites. For example, to calculate the foregone value per trip due to closure of the three Florida Gulf Coast sites (Northwest Florida, Southwest Florida, and the Florida Keys), we first calculate the probability of visitation to one of the three sites before the spill (0.5844). Using this probability, the value of a lost trip due to the simultaneous closure of all three sites is $697.96. The loss per cancelled trip rises when more alternative sites are closed due to the elimination of viable substitutes for the trip. As close substitutes are eliminated from the choice set, the value due to site closure increases. For example, if Northwest Florida sites are closed, Southwest Florida is a viable close substitute. But if all Florida Gulf Coast sites are closed, the set of viable substitutes is reduced considerably.

Table 3-24 reports the loss per cancelled trip for four closure scenarios for each of the three subsamples. The four scenarios represent widening areas of consideration for closure: Northwest Florida, All Florida Gulf sites, All Affected Gulf sites (Northwest Florida, Alabama, Mississippi, Louisiana and Texas), and All Gulf Sites. As expected, the loss per cancelled trip rises as the scope of closure increases and the set of substitute sites decreases.

To calculate the aggregate losses due to site closures, we need estimates of the total number of cancelled (or added) trips to each site. Tables 3-23a, 3-23b, and-3-23c contain the information necessary to calculate the lost trips for each site at the household level.

Table 3-25 reports the estimated number of trips before and after the oil spill at the household level for the four closure scenarios and the net change in trips per household.

Table 3-26 presents the aggregated lost trip values based on pre- and post- oil spill trip patterns for four closure scenarios and three population samples.

Table 3-24. Estimated value of lost access per trip ($) by qualified households due to site closures caused by the *BP/Deepwater Horizon* oil spill

Closure Scenario	Sites Closed	Value of Lost Access per Trip		
		All Qualified Households	Florida Households	Non-Florida Households
Northwest Florida	NW FL	–$464.61	–$459.67	–$408.12
All Florida Gulf Coast	NW FL, SW FL, FL Keys	–$697.96	–$655.74	–$591.48
Affected Gulf	NW FL, AL, MS, LA, TX	–$975.54	–$740.41	–$1,096.11
All Gulf Coast	NW FL, SW FL, FL Keys, AL, MS, LA, TX	–$1,501.12	–$1,078.35	–$1,624.23

Table 3–25. Estimated trips per household before and after the *BP/Deepwater Horizon* oil spill by qualified households

Closure Scenario	All Qualified Households			Florida Households			Non–Florida Households		
	Before	After	Change	Before	After	Change	Before	After	Change
Northwest Florida	1.76	1.68	–0.07	3.29	3.26	–0.04	1.29	1.21	–0.08
All Florida Gulf Coast	2.32	2.09	–0.23	4.41	4.19	–0.21	1.69	1.45	–0.24
Affected Gulf	2.81	2.33	–0.47	4.12	3.74	–0.38	1.84	1.46	–0.38
All Gulf Coast	3.37	2.74	–0.63	5.23	4.68	–0.55	2.81	2.15	–0.65

Table 3-26. Aggregate lost value (Mn $) to qualified households in the market area due to alternative site closures caused by the *BP/Deepwater Horizon* oil spill

Closure Scenario	All Qualified Households (6.44 Mn)	Florida Households (1.08 Mn)	Non-Florida Households (5.36 Mn)
Northwest Florida	−$223.36	−$19.31	−$182.46
All Florida Gulf Coast	−$1,043.22	−$169.31	−$749.50
Affected Gulf	−$2,976.89	−$268.49	−$2,254.98
All Gulf Coast	−$6,102.74	−$642.81	−$5,698.52

Note: The household populations used for extrapolation were based on the reported number of households in the 13-state market area from the 2010 U.S. Census (i.e., 44.34 million) and the share of those located in Florida (i.e., 16.7%).

Given the volume of oil spilled and broad range of areas affected in the Gulf of Mexico, the most appropriate measure of the lost value of access to Floridians from affected trips along the Gulf Coast is estimated to be $643 million. As an example, Figure 3-8 shows the federal fishing grounds that were closed during the spill. This is a map of just one week during which all recreational and commercial fishing were closed by the National Marine Fisheries Service (NMFS). Note that these areas reach as far south as the Dry Tortugas, which affect fishing trips that originate from the Florida Keys.

Conclusions

The estimates derived using the single-site TCM that incorporates site quality and uses both revealed and stated preference information generated results (lost RUV of Florida residents) ranging from $46 million to $680 million. The relatively-wide range is a function of the distinct types of models estimated (the confidence intervals ranged from $8 million to $968 million). The estimates derived using the multi-site TCM (RUM) methodology to account for respondents choices among alternative destinations produced an estimate of $643 million for the lost recreational use value to Floridians associated with a Gulf coast closure of recreational sites. That said, in none of the scenarios examined did the lost recreational use value to this subset of Florida recreationists (those who have or planned to visit the Northwest region) exceed $1 billion.

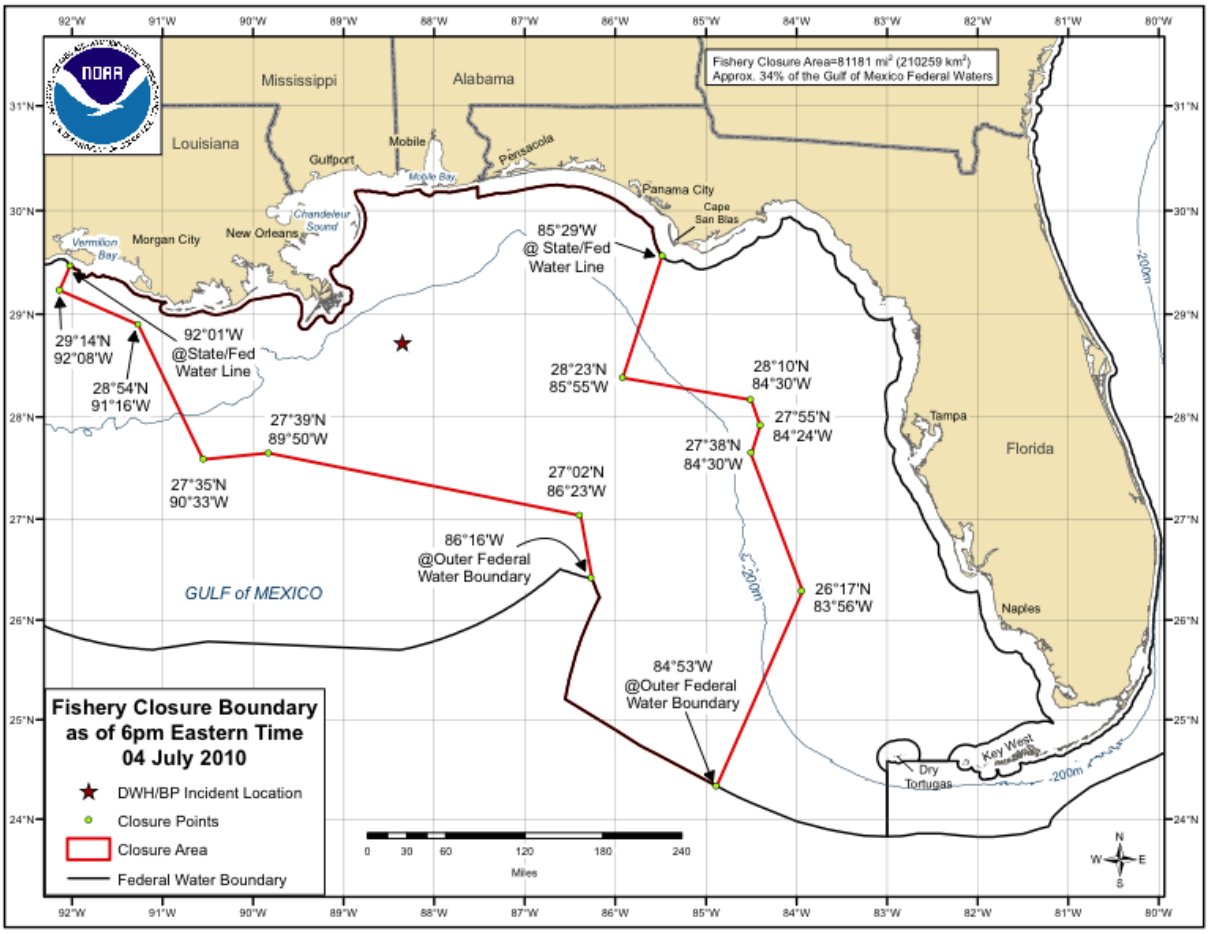

Figure 3-8. Map of closure of federal fishing grounds by the National Marine Fisheries Service on July 4, 2010

4: Study 2b (Economic Impact of Cancelled Recreational Trips)

Alan W. Hodges, Thomas J. Stevens, Sherry L. Larkin, and Rodney L. Clouser

Executive Summary

Overview

The regional economic impacts from the *BP/Deepwater Horizon* oil spill in the Gulf of Mexico that began April 20, 2010 were evaluated for cancelled recreational trips to Northwest Florida by a subset of domestic visitors. The study region was defined to include the following 12 Northwest Florida coastal counties: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, Wakulla, Jefferson, Taylor, Dixie, and Levy. The impacts were calculated using the *IMPLAN* economic modeling system, information from the U.S. Census, and data obtained from surveys. The primary data were collected August – September 2011 through Knowledge Networks, Inc., with respondents residing in 13 U.S. states. The states defined to constitute the primary market area for coastal tourism to the study region were selected using two distinct secondary data sources (*VISIT FLORIDA*® and the Marine Recreational Fisheries Statistics Survey, or MRFSS). The survey was used to gather information from 2,181 respondents (2,083 residing outside of the study region) on their recreational visits to the Gulf of Mexico and South Atlantic coastal areas, including detailed information on their most recent trip to the study region, past trips, planned future trips, and the number of trips cancelled to the study region due to the oil spill.[42] This information was compared to data obtained from personal interviews of 2,540 visitors to the main beach areas in the study region to confirm the market area and share of visitors accounted for in the resulting estimates. The data from the Knowledge Networks probability-based survey were then used to calculate the average itemized trip expenditures in the study region. The total weighted average trip expense by non-residents of the study region was then multiplied by an extrapolated estimate of the number of cancelled trips from June 1, 2010 through September 2012 by households in the defined domestic market area. The estimated foregone expenditures in the study region due to the cancelled trips over this approximate 28-month time frame were then used in the *IMPLAN* software to estimate the "ripple effects" of this foregone spending on the regional economy. These expenditure-based estimates of foregone economic activity are suitable for use in the claiming process against parties responsible for the *BP/Deepwater Horizon* oil spill but do not constitute a

[42] This is the same survey that was used to obtain data for the analysis in Chapter 3; as such, the Study Region and Methods sections contain some of the same information.

comprehensive estimate of losses to Floridians or the State of Florida due to the restricted geographic and temporal scope of the study and methodology employed.

Overview of Economic Impact Methodology

Economic impact analyses measure the change in overall economic activity (growth or contraction) in a specified region due to a particular event or activity. For an event like the *BP/Deepwater Horizon* oil spill, an *economic impact analysis* provides estimates of the extent of the foregone economic activity caused by the cancellation of recreational trips to coastal areas. In addition, an economic impact analysis translates the foregone economic activity into decreased employment and tax revenues. This type of study provides an economic indicator that is based on foregone expenditures from the cancelled trips, which is in contrast with studies that attempt to estimate the lost economic value caused by the degradation of coastal areas. An *economic value analysis* of the *BP/Deepwater Horizon* oil spill, on the other hand, measures the lost consumer surplus, which is a different type of economic indicator that is generated using a different type of methodology (i.e., non-market valuation). A companion study summarizes the results of an economic value analysis of the *BP/Deepwater Horizon* oil spill, which measures the lost economic value to individuals (Florida residents) as opposed to the regional economy.

This study used the *Impact Analysis for Planning* (*IMPLAN*) input-output economic impact analysis software and associated databases to measure the foregone economic contributions to Northwest Florida caused by the *BP/Deepwater Horizon* oil spill. Input-output models use national and regional economic data to measure the "ripple effect" on a regional economy that is caused by a change in spending by non-residents. The total economic impact from a change in spending by non-residents of the study region (*direct effect*) includes the secondary economic effects of economic activity lost from reduced purchases of intermediate products through the industry supply chain (*indirect effects*) and activity lost from reduced employee household spending (*induced effects*). Economic multipliers are used to capture the distinct secondary effects on the regional economy by accounting for the "leakage," or the degree to which demand for goods and services in the region is met by businesses that import from other regions.

The *IMPLAN* analysis used three basic types of information: (1) itemized expenditures of visitors' most recent trip involving saltwater-related recreation to the study region; (2) information on cancelled trips to the study region that were not replaced both before and after the time of the survey; and (3) an estimate of the number of households whose saltwater-related recreational trips to the study region were affected by the oil spill, that is, the proportion of respondents in the market area that were potentially affected. In this study, "saltwater-related recreation" was defined to include going to a beach, saltwater

fishing, marine-related activities (e.g., swimming, diving, snorkeling, or surfing in saltwater areas), or general boating on saltwater (e.g., canoeing, kayaking, sailing, or motor boating without fishing).

Summary of Results

- According to data from *VISIT FLORIDA*® and the Marine Recreational Fisheries Statistics Survey (MRFSS) a 12-state market area for tourism to Northwest Florida (excluding Florida) accounted for approximately 89 percent of non-Florida domestic visitors from 2007 – 2009. For comparison, the share of visitors to beach areas in the study region from the 12-state non-Florida market area defined for the Internet survey was 90 percent during summer 2011.
- Approximately 14 percent of survey respondents indicated that they had participated in saltwater-related recreation within the last five years and had visited the study region (i.e., 12 coastal counties in Northwest Florida) within the last two years, or cancelled a saltwater-related recreational trip to the Gulf of Mexico due to the oil spill; this is the share of the population in the market area that is considered "qualified" in this study. This percentage was applied to the number of households in the market area (43.9 million, including Florida but excluding residents of the study region, Table 4-10) to calculate that 6.14 million households were potentially affected by the oil spill (Table 4-15).
- Among the 2,181 qualified survey respondents, 98 were residents of the study region and were deleted from the analysis. Of the remaining 2,083 qualified respondents, 10.1 percent reported cancelling trips to the study region because of the oil spill since June 1, 2010 (past trips), and 3.6 percent cancelled trips planned over the next year (future trips) (Table 4-16).
- All figures used in the estimation of the total economic impact (output) were derived using statistical weights calculated for each respondent by Knowledge Networks to improve the representativeness of the sample. The sample weighting procedure used three weights: a base weight, a panel demographic post-stratification weight, and a study-specific post stratification weight (Appendix A).
- Using the weighted average of 0.240 past trips and 0.066 future trips cancelled per respondent (household), an estimated nearly 1.88 million trips to the study region were cancelled due to the oil spill, including 1.47 million past trips and 0.40 future trips (Table 4-16). In addition, approximately 2.28 million trips were cancelled to other coastal regions of Florida by the group of households studied; however, the economic impacts of these cancellations were not evaluated in this study.
- Survey respondents who had visited the study region in the past two years were asked to report expenditures on their most recent trip to the study region in 13 categories (transportation, lodging, dining, shopping, etc.), and to indicate the share of their

expenses in each category that were paid in the region. The weighted average total trip expenditure for typical trips was $1,237 per household (from households outside the study region), of which $693 was spent within the study region (Table 4-20).

- Using the average trip expenditure, average number of trips cancelled, and number of households affected, the total reduced visitor expenditures in Northwest Florida due to the oil spill were estimated at $1.3 billion, including just over $1.0 billion for cancelled past trips and $279 million for cancelled future trips (Tables 4-21 and 4-22).
- The *total output impact* of cancelled saltwater-related recreational trips to the study region by households in the 13-state market area (including Florida households with the exception of residents in the study region), including regional multiplier effects, was just over $2.04 billion lost for the approximate 28-month study period, including nearly $1.6 billion lost for past cancelled trips and $436 million lost for future cancelled trips (Table 4-23).
- The *total value-added* impact over the 28-month study period was estimated at $1.37 billion. The largest value-added impacts (reductions) occurred in the sectors for Real Estate and Rentals ($407 million), Government ($266 million), Accommodation and Food Services ($208 million), and Retail Trade ($122 million). The total impact to labor income (earnings) in the form of employee wages, salaries and proprietor income was a reduction of $685 million (Table 4-24).
- The *total employment impact* to the region was a loss of 20,486 job-years (Table 4-24).

Conclusions

The results from this study indicate significant impacts on the overall economic activity in a 12-county study region of coastal Northwest Florida resulting from reduced visitor trips and spending in the study region due to the *BP/Deepwater Horizon* oil spill using the *IMPLAN* methodology. Of surveyed households in the 13-state market area (including Florida but exclusive of residents in the study region) that were considered qualified (i.e., were either past or potential visitors to the study region), 10.1 percent and 3.6 percent cancelled past and future trips because of the oil spill, respectively. An estimated total of 1.88 million visitor trips to the study region in Northwest Florida were cancelled because of the oil spill between June 1, 2010 and September 24, 2012 (up to approximately 28 months, including trips that were planned up to one year from the date that the last respondent completed the survey). Respondents also reported cancelling an additional 2.28 million trips to other coastal areas of Florida, although the impacts of these cancellations were not further evaluated in this report.

Using the reported average expenditure in the study region for the most recent trip to the study region of $693 per household, which was calculated using sampling weights generated by Knowledge Networks, total visitor spending in the region was estimated to

have fallen by $1.30 billion due to cancelled trips over the period studied (up to 28 months). Regional economic impacts of this reduction in visitor spending, including regional multiplier effects estimated with the *IMPLAN* economic modeling system, amounted to a reduction of $2.04 billion in output, an employment loss of 20,486 job-years, and nearly $1.4 billion in decreased value added. For comparison, the total value added impacts for cancelled past trips, which covered an approximately 12-month period, represented 2.8 percent of the gross regional product of the study region in 2010.

The economic impact estimates for the *BP/Deepwater Horizon* oil spill presented in this report are considered reasonable and defensible impacts on the regional economy modeled due to a number of key aspects of survey design and implementation. However, given the geographic and temporal scope of this study and the methodology used, these estimates are not comprehensive. The notable strengths of the analysis in generating credible and conservative estimates include the following:

1. The participation of a large and experienced research team during all phases of study design, questionnaire development, and the preparation and review of draft reports.
2. The use of Knowledge Networks to obtain a large probability-based sample and unique weights for each respondent based on both pre- and post-stratifications.
3. The relative speed of implementation following the spill to minimize recall bias on trip information.
4. The adoption of a research protocol that emphasized the use of conservative assumptions where possible, including (a) the exclusion of approximately 11 percent of domestic visitors who reside a farther distance from the study region; (b) the exclusion of international visitors; (c) the disqualification of households not reporting participation in saltwater-related activities during the past five years; (d) counting only cancelled trips one year in the future, which ignores the possibility that visitors could have permanently changed their preferred beach destination; (e) the exclusion of reduced expenditures on trips that were shortened but not cancelled; (f) the exclusion of all air transportation expenses and transportation expenses by day-trippers; (g) the use of a restrictive format for respondents to report regional expenditure shares (e.g., a 100% category was not included but is likely reasonable for visitors traveling a farther distance); (h) replacing missing values with zeroes in the data, including for information on itemized expenditures and cancelled trips; (i) excluding the projected reductions in tax collections (see below); and (j) using the lower estimated trip expenses and number of cancelled trips from the Internet survey versus the intercept survey.

Future work will specifically address assumption 4(i). In particular, the impact on taxes will be further discussed and refined through ongoing collaboration with staff in the Office of Economic and Demographic Research (EDR).

Introduction to Economic Impact of Cancelled Trips

This report is part of a research project undertaken by the University of Florida, Food and Resource Economics Department, at the request of the Florida Legislature, Office of Economic and Demographic Research (EDR), to estimate economic losses to the State of Florida resulting from the *BP/Deepwater Horizon* oil spill in the Gulf of Mexico that began on April 20, 2010. The spill was officially designated a spill of national significance on April 29, 2010. While the primary leak was contained in July, the wellhead was not officially capped until early September. Reports from the National Incident Command indicate that 4.9 million barrels of oil were spilled into the Gulf of Mexico, which is over 19 times the amount of oil spilled by the *Exxon Valdez* in Alaska in 1989, making it the worst oil spill in U.S. history. Figure 4-1 shows the extent of the spill in terms of oiled shoreline in Louisiana, Alabama, Mississippi, and Florida, with red, orange, and yellow colors indicating heavy, moderate and light oiling, respectively, while blue indicates no oil observed. Oil from the *BP/Deepwater Horizon* oil spill was observed in coastal areas of Northwest Florida from Pensacola to Panama City.

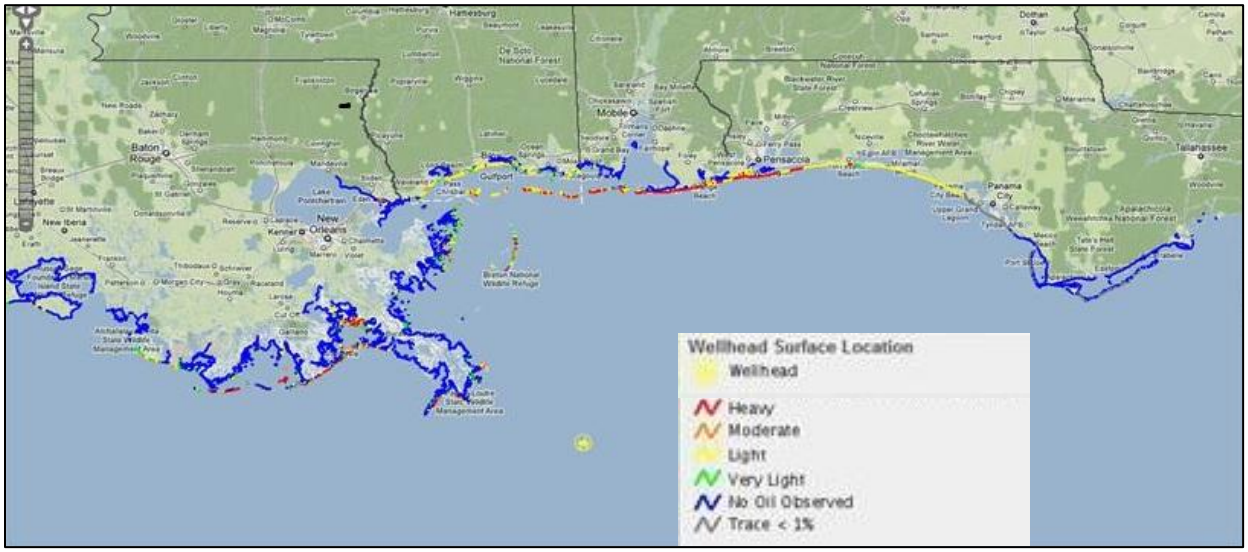

Figure 4-1. Extent of oiled beaches in Louisiana, Alabama, Mississippi, and Florida

Sources: Environmental Response Management Application (ERMA®) Gulf Response Tool; Federal Geographic Data Committee (FGDC); http://resources.geoplatform.gov/news/mapping-response-bp-oil-spill-gulf-mexico

Local governments in Northwest Florida have received $12.86 million in compensation for damages as of October 2011 (Florida Legislature, 2011).

In 2010, compensation to individuals filing claims against BP in the five Gulf States exceeded $870 million, with $172 million (19.6%) to individuals in Florida (Table 4-1).

Table 4-1. Personal transfer receipts for the BP Oil spill in 2010 in Gulf State Metro Areas

State / Metropolitan Area	Amount ($1,000)
Florida:	
Crestview – Fort Walton Beach – Destin, FL	$60,893
Pensacola – Ferry Pass – Brent, FL	$52,773
Panama City – Lynn Haven – Panama City Beach, FL	$43,442
Tampa – St. Petersburg–Clearwater, FL	$6,218
Tallahassee, FL	$3,127
Naples – Marco Island, FL	$1,088
Miami – Fort Lauderdale – Pompano Beach, FL	$1,013
Jacksonville, FL	$668
North Port – Bradenton-Sarasota, FL	$631
Cape Coral – Fort Myers, FL	$621
Punta Gorda, FL	$305
Port St. Lucie, FL	$153
Deltona – Daytona Beach – Ormond Beach, FL	$144
Orlando – Kissimmee – Sanford, FL	$144
Palm Bay – Melbourne – Titusville, FL	$113
Lakeland – Winter Haven, FL	$63
Gainesville, FL	$45
Sebastian – Vero Beach, FL	$40
Ocala, FL	$22
Florida sub-total	$171,503
Alabama:	
Mobile, AL	$29,221
Montgomery, AL	$157
Birmingham – Hoover, AL	$146
Dothan, AL	$87
Huntsville, AL	$65
Tuscaloosa, AL	$24
Gadsden, AL	$8
Decatur, AL	$7
Florence – Muscle Shoals, AL	$5
Anniston – Oxford, AL	$1
Auburn – Opelika, AL	$1
Alabama sub-total	$29,722
Mississippi**:**	
Gulfport-Biloxi, MS	$36,474
Pascagoula, MS	$12,423
Hattiesburg, MS	$190
Jackson, MS	$116
Memphis, TN – MS – AR	$5
Mississippi sub-total	$49,208

State / Metropolitan Area		Amount ($1,000)
Louisiana:		
New Orleans – Metairie – Kenner, LA		$125,273
Houma – Bayou Cane – Thibodaux, LA		$42,817
Lake Charles, LA		$3,523
Lafayette, LA		$3,480
Baton Rouge, LA		$1,514
Alexandria, LA		$240
Monroe, LA		$56
	Louisiana sub-total	$176,903
Texas:		
Houston – Sugar Land – Baytown, TX		$10,025
Beaumont – Port Arthur, TX		$4,153
Dallas – Fort Worth – Arlington, TX		$434
Victoria, TX		$404
San Antonio – New Braunfels, TX		$252
Brownsville – Harlingen, TX		$230
Corpus Christi, TX		$206
Austin – Round Rock – San Marcos, TX		$81
College Station – Bryan, TX		$11
Longview, TX		$4
Lubbock, TX		$2
	Texas sub-total	$15,802
Total All Gulf State Metro Areas		$443,138

Source: U.S. Department of Commerce, Bureau of Economic Analysis, August 9, 2011; http://www.bea.gov/regional/pdf/BPOil.pdf

To date, no official claims for damages have been filed on behalf of the State of Florida although a few advance-funding requests have been made. Once the claims process begins, there are several types of damages for which the state can seek compensation. Based on the legal precedent of the *Exxon Valdez* oil spill, compensable losses to the state or individuals are categorized into three groupings based on the availability of market prices to measure the losses: direct (e.g., losses to local business), indirect (e.g., losses in ecosystem services or the value of foregone recreational opportunities), and passive use (e.g., losses to individuals who value a clean environment for future generations or the value of knowing that certain Gulf-dependent species continue to exist).

This report estimates the economic *impacts* from decreased tourism spending in Northwest Florida due to the oil spill. These are direct compensable losses and are measured using economic *impact* analysis. This report begins with a description of the study region and the methods, including the definition of the market area. Next, the primary data collection activities are discussed and the survey data are summarized and analyzed for use in an

economic impact analysis. Before the total economic impacts are presented, the methodology utilized to conduct a regional economic impact analysis is described. This discussion includes information on the *Impact Analysis for Planning (IMPLAN)* software, which is a widely-accepted program for estimating the regional economic impacts resulting from events that occur in a local U.S. economy (Schaffer, 1999; Miller and Blair, 2009).

Study Region

For this study, the study region is defined to include the 12 Northwest Florida coastal counties of Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, Wakulla, Jefferson, Taylor, Dixie, and Levy (Figure 4-2).

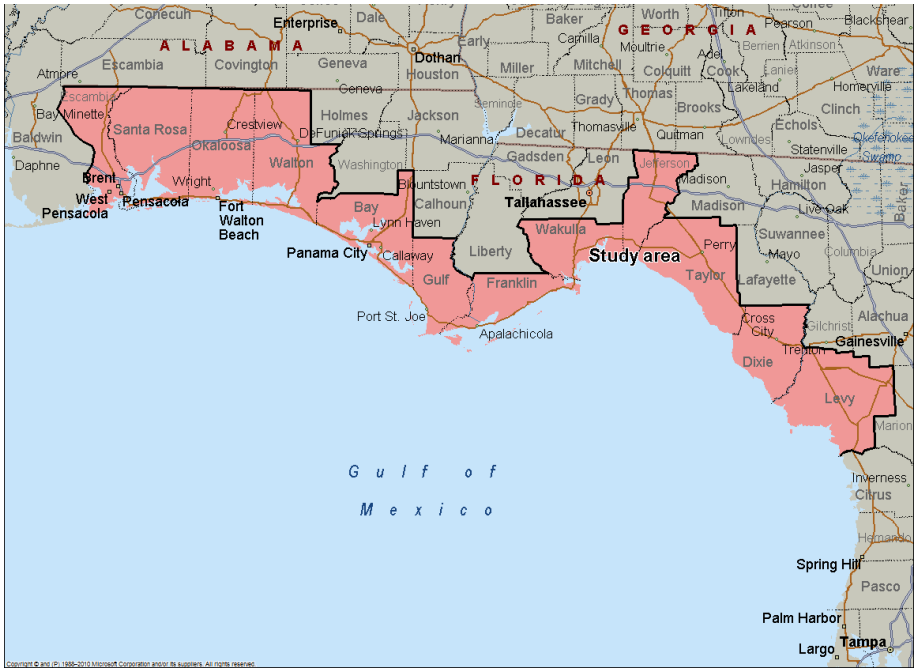

Figure 4-2. Map of the study region (i.e., 12 coastal counties in Northwest Florida)

The study region had a total population of just over one million persons and 392,631 households in 2010 according to the 2010 U.S. Census (Table 4-2). The median annual household income was $39,494. Table 4-2 also summarizes the results of an *IMPLAN* analysis on the study region for 2010 that can be used to compare the results of analyzing the effect of the *BP/Deepwater Horizon* oil spill. According to the *IMPLAN* analysis, total employment in the study region consisted of 525,460 job-years (the equivalent of employment for a full year for both full- and part-time positions in the economy). The gross regional product (i.e., total value added) in 2010 was $38.36 billion (Bn). Employee compensation was the largest component of the total value added ($21.44 Bn), and households were the largest component of final demand ($29.49 Bn), followed by the

federal government ($17.62 Bn). Regional trade included $14.59 billion in exports and $29.90 billion in imports.

Table 4-2. Demographic and economic characteristics of the study region in 2010

Characteristic	Value
Total Population (persons)	1,006,450
Total Population (households)	392,631
Median Annual Household Income	$39,494
Total Employment	525,460
Total Personal Income (Bn $)	$35.07
Gross Regional Product (Total Value Added, Bn $):	
Employee compensation	$21.44
Proprietor income	$1.63
Other property type income	$12.77
Indirect business taxes	$2.52
Total	$38.36
Final Demand (Bn $):	
Households	$29.49
State/Local government	$4.01
Federal government	$17.62
Capital	$4.08
Exports	$14.59
Imports	–$29.90
Institutional sales	–$1.52
Total	$38.36

Note: The totals may not equal the sums of the individual numbers due to rounding.
Sources: *IMPLAN* (MIG, Inc., 2011) and population estimates from the 2010 Decennial Census (U.S. Census Bureau, 2011).

The leading economic sector in the region is Government (including state/local, federal, and military), representing 30.4 percent of gross regional product, followed by Real Estate/Rental (16.1%), Health and Social Services (6.9%), Retail Trade (5.9%), Professional/Technical Services (4.9%), and Accommodation and Food Services (3.9%), as shown in Table 4-3.

Table 4-3. Industry employment, output, and gross regional product in the study region by industry group in 2010

Industry Group (2 digit NAICS)	Employment (job-years)	Output (Mn $)	Gross Regional Product	
			Value (Mn $)	Share (%)
11 Agriculture, Forestry, Fishing	5,995	$523	$232	0.6%
21 Mining	1,984	$250	$82	0.2%
22 Utilities	2,364	$1,079	$886	2.3%
23 Construction	34,530	$4,079	$1,563	4.1%
31-33 Manufacturing	16,434	$6,051	$1,619	4.2%
42 Wholesale Trade	10,747	$1,551	$1,171	3.1%
44-45 Retail trade	58,171	$3,514	$2,273	5.9%
48-49 Transport. & warehousing	12,694	$1,199	$632	1.6%
51 Information	7,539	$2,184	$1,167	3.0%
52 Finance & insurance	27,499	$4,864	$2,119	5.5%
53 Real estate & rental	27,020	$7,505	$6,184	16.1%
54 Prof., scientific & tech. services	29,720	$2,849	$1,863	4.9%
55 Management of companies	1,470	$196	$99	0.3%
56 Administrative & waste services	31,838	$2,031	$1,150	3.0%
61 Educational services	6,183	$296	$131	0.3%
62 Health & social services	51,316	$4,394	$2,641	6.9%
71 Arts, entertainment & recreation	9,400	$651	$362	0.9%
72 Accommodation & food services	46,206	$2,761	$1,487	3.9%
81 Other services	31,773	$2,115	$1,024	2.7%
92 Government & non-NAICS	112,578	$12,475	$11,676	30.4%
Total	525,460	$60,569	$38,360	100.0%

Notes: Gross Regional Product is equivalent to Gross Domestic Product, and represents the "total value added" by all industries. Mn $ represents millions of U.S. dollars. The totals may not equal the sums of the individual numbers due to rounding.
Source: *IMPLAN* data for Florida (MIG, Inc., 2011).

Methods

Market Area Determination

Two sources of data were used to determine the domestic market area for recreational visitation to the study region. The first, from *VISIT FLORIDA*®, provides the geographic distribution of domestic overnight visitors by state to each of eight defined "Florida Vacation Regions," two of which include the study region defined in this report. The second,

from the Marine Recreational Fisheries Statistics Survey (MRFSS) program, provides the geographic distribution of marine (saltwater) recreational fishermen who were intercepted at sites in the study region. Data from each source were considered in the determination of the market area for purposes of administering a survey because each is imperfect with respect to determining the market for saltwater-related recreation to the study region,[43] but are the only secondary information sources available.

VISIT FLORIDA® is the official tourism marketing corporation for the State of Florida and publishes an annual study, among other documents, that provides a comprehensive overview of visitation to the state each year. The *Florida Visitor Study* information is obtained from sources including enplanement data at Florida's 14 major airports, *OAG/BACK* Aviation Data, *TNS TravelsAmerica*, and surveys by D.K. Shifflet and Associates (DIRECTABS data). The report provided information on the share of non-Florida resident visitors who stayed overnight in the Northwest or North Central regions (Visit Florida, 2010).[44] Although this region encompasses interior counties in Northwest Florida, these numbers are sufficient for the market area determination since we know that day trippers to the study region would have to have visited from adjacent states and all of these states are included. Table 4-4 shows the data for states that accounted for at least one percent of visitors in 2009. Southern states, and states adjacent to the study region, account for the majority of non-Florida overnight general visitors to the study region.

Table 4-4. Share of non-Florida overnight visitors to Northwest Florida by states that accounted for at least one percent of visitors in 2009

State	Share	State	Share
Georgia	26%	South Carolina	2%
Alabama	17%	Pennsylvania	2%
Mississippi	9%	Arkansas	2%
Louisiana	8%	Ohio	2%
Texas	8%	Indiana	2%
Tennessee	4%	Missouri	2%
Kentucky	4%	California	1%
Illinois	4%	Virginia	1%
Total top 8:	80%	Total top 9-16:	14%

Source: *VISIT FLORIDA*® (pers. comm., March 2, 2011).

[43] The *VISIT FLORIDA*® data contain information on non-coastal counties and the MRFSS data are characterized by avidity bias. The MRFSS is being replaced by the Marine Recreational Information Program (MRIP), in part to correct for avidity bias, but was not available for consideration for this study.
[44] The "Northwest" region includes the following counties: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin. "North Central" includes the following counties: Wakulla, Jefferson, Taylor, Dixie and Levy.

The MRFSS program is administered by the National Marine Fisheries Service and the resulting angler data is—as of April 2011—considered the best available information for estimating the annual activity of marine recreational fishermen. The MRFSS uses a combination of dockside interviews and follow-up telephone and mail surveys to collect recreational harvest information. Using the intercept data from 2009, the most recent year available, the geographic distribution of visitors was determined. The distribution of anglers intercepted in the study region by state of origin, for those states that account for at least one percent of visitation, is shown in Table 4-5, and is comparable to Table 4-4 for the general visitor survey. The MRFSS marine recreational fishing data also indicates that the majority of out-of-state visitors are from nearby southern states.

Table 4-5. Share of non-Florida marine recreational fishing visitors to the study region by states that accounted for at least one percent of visitors in 2009

State	Share	State	Share
Georgia	28%	Minnesota	4%
Alabama	10%	Ohio	4%
Illinois	8%	Virginia	3%
Wisconsin	8%	New Jersey	2%
Indiana	6%	Iowa	1%
Kentucky	6%	Missouri	1%
Michigan	6%	New York	1%
Tennessee	6%	North Dakota	1%
Louisiana	4%	Texas	1%
Total top 9:	82%	Total top 10-18:	18%

Note: Data includes day trippers from nearby states so is not directly comparable to Table 3-1.
Source: MRFSS.

Using the general visitor data and marine recreational fishing data on non-Florida visitors in 2009 suggests a 23-state market area. To examine the robustness of this result,[45] the decision was made to examine comparable data for the two previous years (2007 and 2008). When the 2007 and 2008 MRFSS data were obtained on March 20, 2011, we discovered that the 2009 data had been updated. An examination of the states that accounted for at least one percent share of marine recreational anglers to the study region (exclusive of Florida) revealed that the top 12 states were identical in 2007, 2008 and 2009.

[45] The geographic scope of the market area is a key determinant of the costs to implement the survey online through Knowledge Networks (KN). With a goal of receiving 2,000 completed responses from past visitors to the study area, KN suggested restricting the study area to approximately 10 states.

On March 24, 2011, the 2007 and 2008 data for general overnight visitors to Northwest Florida (as defined in Table 4-4) were obtained from *VISIT FLORIDA*®. The top 12 non-Florida states in each of the three years included 17 states, all of which were included in the recreational fishing list for the same years. Table 4-6 shows, for comparison to Tables 4-4 and 4-5, the updated visitation shares for the top 12 states in 2009 for general visitation and marine fishing, respectively. The top 12 states for each visitor type account for 88.8 percent of marine anglers and 89.1 percent of non-Florida overnight visitors. Table 4-6 contains 14 states, excluding Florida.

Table 4-6. Share of non-Florida resident visitors to the study region in 2009 for marine fishing and general visitation from the top 12 states

Marine Fishing		General Visitors (overnight only)	
State	Share	State	Share
Georgia	31.8%	Georgia	26.2%
Alabama	17.1%	Alabama	17.4%
Tennessee	10.7%	Mississippi	9.4%
Texas	5.3%	Louisiana	7.6%
Louisiana	5.0%	Texas	7.6%
Mississippi	3.9%	Tennessee	4.3%
Kentucky	3.7%	Kentucky	4.2%
Missouri	2.9%	Illinois	3.9%
Arkansas	2.8%	South Carolina	2.4%
Illinois	2.1%	Pennsylvania	2.3%
Ohio	1.9%	Arkansas	2.2%
Indiana	1.5%	Ohio	1.6%
Total top 12:	88.8%	Total top 12:	89.1%

Notes: The marine fishing shares in this table differ from Table 3-2 since these figures were based on updated data. The totals may not equal the sums of the individual numbers due to rounding.

Sources: MRFSS, *VISIT FLORIDA*®

The top 12 states in each of the three years from both data sources contained 17 states. Restricting the market area to the 12 states included in each year of MRFSS data resulted in the elimination of California, New Mexico, Michigan, Pennsylvania, and South Carolina. Despite the limitations of each independent data source, the data and market areas were remarkably similar. In general, the market area of domestic visitors according to the secondary sources used is comprised of southern states and extends north to Indiana, Illinois, and Ohio.

Note that the market area of visitors to the study region does not include all domestic visitors (namely visitors from the remaining 37 states, excluding Florida) according to the secondary sources used in this study, which means the resulting loss estimates from households in the market area will underestimate the total recreational use losses to U.S. residents from the closure of recreational sites in the study region as a result of the *BP/Deepwater Horizon* oil spill.

Survey Development and Implementation

Survey questionnaires were developed based on the investigators' experience with past recreational visitor surveys. Surveys were pre-tested with 145 respondents to assure that questions were clear and meaningful. The survey was used to gather information on past visitation to coastal destinations, saltwater-related recreational activities, details on their past trip to the study region, trip cancellations due to the oil spill (past and future), and opinions about the quality of waterfront resources post-spill and respondent information. A copy of the survey questionnaire as coded on the Internet is provided in Appendix C.

The target population of the survey was non-institutionalized adults age 18 and over, residing in Georgia, Alabama, Tennessee, Louisiana, Texas, Missouri, Mississippi, Kentucky, Arkansas, Ohio, Indiana, Illinois, and Florida, who indicated at the time they took the survey that they visited the study region (i.e., 12 coastal counties in Northwest Florida) in the last 24 months, or canceled at least one trip that would have included saltwater-related recreation to the Gulf of Mexico since June 1, 2010 due to oil spill.

The survey was implemented via the Internet by Knowledge Networks Inc. (KN), under contract with the University of Florida. Survey respondents were drawn from a sample of households residing in the 13 states from the KN *KnowledgePanel*®, a probability-based panel designed to be representative of the United States. These respondents were supplemented with email invitations sent through another firm that manages email lists. KN provided weighting factors that reflect each respondent's representativeness in the overall sample based on individual socio-demographic information. In particular, three weights were used in the study: (1) a base weight to offset known deviations from a pure equal probability sample design in the selection process, (2) a panel demographic post-stratification weight to adjust for survey error in the panel, and (3) a study-specific post-stratification weight to adjust for the study's sample design and non-response. A description of the sampling and weighting methodologies used by KN are provided in Appendix A.

The survey was conducted from August 12 through September 24, 2011. Each respondent's eligibility for the full survey was determined by a series of screening questions at the

beginning of the questionnaire. Eligible participants completed the survey in a median time of 14 minutes. To enhance survey response rates, KN emailed reminders to non-responders. The response rate was 79.3 percent for KN panelists. This relatively high response rate is expected when using KN due to their agreements with their panelists, who are only invited to participate in 4 to 6 surveys each month and, once invited, are expected to respond. Those who did not respond (i.e., 'click' to begin the survey), made the decision irrespective of the content of the survey since the email invitations are generic. The response rate for non-panelists could not be obtained.

Survey Data Summary

There were 98 respondents who were residents of one of the 12 counties in the study region who were removed from the dataset in order to evaluate trip characteristics and spending only for visitors to the study region. This left a total of 1,746 respondents who reported visiting the study region in the past two years (group 1: "past visitors"); 337 who had not visited the study region in the past two years but reported cancelling at least one "planned trip" (where some arrangements had to be cancelled) to the Gulf of Mexico because of the oil spill (group 2: "cancellers only"); and 12,833 that either did not engage in saltwater-related recreational activities in the past five years or had not visited the region in the past two years, or cancelled a trip due to the oil spill (group 3: "non-participants, non-cancellers"), as summarized in Table 4-7. Overall, there are 13.96 percent (11.71% past visitors, group 1, plus 2.26% cancellers only, group 2) of respondents who are considered potential recreational visitors to the study region.

Table 4-7. Number of respondents to the recreational visitor survey implemented by Knowledge Networks (KN)

Survey Group	KN Panel	Off-Panel	Total Respondents	Percent
1: Past visitors	924	822	1,746	11.71%
2: Cancellers only	184	153	337	2.26%
3: Non-participants, non-cancellers	8,355	4,478	12,833	86.04%
Total respondents	9,463	5,453	14,916	100.00%
Past visitors and cancellers (qualified) only:				
Number of respondents	1,108	975	2,083	
Percent of total respondents	11.71%	17.88%	13.96%	

Notes: The "total respondents" does not indicate the number of complete and usable responses, but rather those who answered at least the first qualifying question. Also, respondents who were residents of the study region were removed from the sample and are not reflected in these numbers. The total percent share is does not equal the sum of the individual shares due to rounding.

The sample included 9,463 respondents from the KN panel and 5,453 respondents from an "off-panel" source contracted by KN. Respondents who did not participate in saltwater-related recreation or visit the study region were dismissed from the survey during the completion of the first three questions. Respondents in group 1 were asked additional questions about their past trips to the region, and spending on their last trip to the study region. Respondents in both groups 1 and 2 were questioned about planned trips to the region, both in the past (since June 1, 2010) and the immediate future (next 12 months), that they cancelled due to the *BP/Deepwater Horizon* oil spill.

Respondents were asked to provide information on spending for them and on behalf of the group they were travelling with for their most recent trip to the study region that involved saltwater-related recreation. Thus, the expense data were assumed to represent information on a household versus individual basis. Expenditures were reported in 13 categories, including four subcategories for transportation expenses and five subcategories for lodging expenses as shown in Table 4-8.

Table 4-8. Expense categories reported in the survey for the last trip

Expense
Transportation (aircraft, own vehicle, rental vehicle, other)
Lodging (hotel/motel, rented timeshare/condo/house/B&B, campground, family/friends)
Boat rental, fuel and oil
Ramp, mooring, and parking fees
Fishing charter, party boat, and diving fees
Sport equipment rentals (fishing/diving gear, beach chairs, etc.)
Sport equipment purchases
Miscellaneous retail purchases (sunscreen, towels, hats, souvenirs, etc.)
Food and beverage from stores
Food and beverage from restaurants
Clothing and accessories
Other entertainment (movies, museums, events, parks, etc.)
Other (open ended)

Respondents were also asked to indicate the month and year of their most recent trip to the study region and whether this trip was "typical" of trips to the study region. Respondents who reported that their most recent trip was not typical were excluded from the analysis of expenditures (11.1%). Also, two unreasonably large outlier values for lodging and transportation expenses were removed from the data. Reported expenditures were indexed to 2011 dollars using the Gross Domestic Product Implicit Price deflator for July 1 of 2009 – 11 (Bureau of Economic Analysis, BEA, 2011).

Foregone Expenditures

The sequence of steps used for calculating foregone visitor spending in the study region due to cancelled recreational trips following the *BP/Deepwater Horizon* oil spill is summarized in Figure 4-3.

Spending on most recent typical trip to study region by 13 expense categories adjusted to 2011 dollars

X

KN respondent weighting factor to adjust for representativeness in the sample and conversion of missing values to zero

X

Share of trip spending in study region by expense category

X

Average number of cancelled trips (past and future) per respondent surveyed

X

Number of qualified households in the market area for saltwater-related tourism in the study region

=

Calculated total foregone spending by category

Figure 4-3. Calculation of foregone visitor spending in the study region due to cancelled trips for use in determining the economic impact of the *BP/Deepwater Horizon* oil spill

For expenditure data reported by group 1 survey respondents, all missing (non-reported) values were assumed to be zero. Expenditures were weighted using the KN weighting factors. The share of trip transportation and lodging expenses that occurred within the study region was estimated as a proportion of the number of nights stayed in the region in relation to the total number of nights away from home, as reported by survey respondents. No transportation or lodging expenses were included for day-trip visitors. The shares of all other expenditures in the area were estimated at the midpoint of the range reported, as shown in Table 4-9.

Table 4-9. Share of expenditures in the study region by range reported

Expenditure range options in survey	Midpoint value
0%	0.0%
1%-49%	25.0%
50%-75%	62.5%
76%-100%	87.5%

The share of air transportation expenditures within the study region was assumed to be zero. The total expenditure per trip was then calculated as the sum of the expenditures in each category for each respondent. The average total expenditure in the region per household-trip was multiplied by the average number of cancelled trips per household. The average number of trips cancelled to the region, both in the past (since June 1, 2010) and in the future (over next 12 months), was computed from the survey data, again with zeros imputed for missing values, including respondents who never finished the survey. Multiplying the average regional expenditure per trip by the number of cancelled trips provides an estimate of foregone expenditures in the study region at the household level. This value is then multiplied by the estimated number of households in the 13-state market area (excluding residents of the study region) that was defined for the survey. This approach produces a conservative estimate of losses since approximately 11 percent of domestic visitors and all foreign visitors are excluded, and missing values are assumed to be zero.

Household Population in Market Area

The 13 states included in the survey sample (Table 4-10) constitute approximately 89 percent of the domestic market for visitors to the study region (i.e., 12 coastal counties in Northwest Florida) as explained previously. These states had 43.94 million households in 2010, excluding 392,631 households in the study region (U.S. Census Bureau, 2011).

Table 4-10. Number of households in the market area for visitors to the study region

State	Number of Households
Alabama	1,883,791
Arkansas	1,147,084
Florida (excluding households in the study region)	7,028,171
Georgia	3,585,584
Illinois	4,836,972
Indiana	2,502,154
Kentucky	1,719,965
Louisiana	1,728,360
Mississippi	1,115,768
Missouri	2,375,611
Ohio	4,603,435
Tennessee	2,493,552
Texas	8,922,933
Total	43,943,380

Note: A household is a person or group of people who occupy a housing unit as their usual place of residence. The number of households equals the number of occupied housing units in the U.S. Census.

Survey Variables Used for Analysis

The selected set of survey variables used for the analysis of trip expenditures and trip cancellations is listed in Table 4-11.

Table 4-11. Survey variables used for analysis of visitor spending and cancelled trips to the study region (i.e., "NW FL")

Variable	Description
Group	1=Past visitors, 2=Cancellers only
Weight	*Knowledge Networks* respondent weighting factor
Qa1	Participated in beach/marine activities in past 5 years: 1=yes, 0=no
Qa2	Visited Gulf/South Atlantic coast in past 2 years: 1=yes, 0=no
Qa2y	Visited NW FL coast in past 2 years: 1=yes, 0=no
Qa2n	Cancelled planned trip to Gulf coast since 06/01/10: 1=yes, 0=no
Qa3	Cancelled trip to Gulf coast due to oil since 06/01/10: 1=yes, 0=no
Qa5	Cancelled trip to NW FL from Qa3: 1=yes, 0=no
Qa7_One_A	Number trips cancelled due to oil spill, single destination (Group 2)
Number of trips cancelled due to oil spill, multiple destination trip:	
Qa7_Mlt_A_a_trips	Pensacola (Group 2)
Qa7_Mlt_A_b_trips	Ft. Walton/Destin (Group 2)
Qa7_Mlt_A_c_trips	Panama City (Group 2)
Qa7_Mlt_A_d_trips	Port St. Joe (Group 2)
Qa7_Mlt_A_e_trips	Central Gulf Coast (Group 2)
Qb3	Number nights away from home on most recent trip to NW FL
Qb4_Multi_A	Number nights for most recent trip to Pensacola area
Qb4_Multi_B	Number nights for most recent trip to Ft. Walton/Destin area
Qb4_Multi_C	Number nights for most recent trip to Panama City area
Qb4_Multi_D	Number nights for most recent trip to Port St. Joe area
Qb4_Multi_E	Number nights for most recent trip to Central Gulf coast area
Qb14b_E	Number past trips cancelled to NW FL
Qb14b_F	Number past trips cancelled to Southwest Florida
Qb14b_G	Number past trips cancelled to the Florida Keys
Information on past trip to NW FL:	
Qc2	Transportation mode (coded 1-6)
Qc3a	Amount spent for transportation ($)
Qc3b	Amount spent on lodging ($)
Qc3c	Primary type of lodging used (coded 1-8)
Qc3d_A_Amt	Amount spent for boat rental, fuel and oil ($)
Qc3d_B_Amt	Amount spent for ramp, mooring, and parking ($)
Qc3d_C_Amt	Amount spent for fishing charter, party boat, and diving fees ($)
Qc3d_D_Amt	Amount spent for sport equipment rentals ($)
Qc3d_E_Amt	Amount spent for sport equipment purchases ($)
Qc3d_F_Amt	Amount spent for miscellaneous retail purchases ($)
Qc3d_G_Amt	Amount spent for food and beverage from stores ($)

Variable	Description
Qc3d_H_Amt	Amount spent for food and beverage from restaurants ($)
Qc3d_I_Amt	Amount spent for clothing and accessories ($)
Qc3d_J_Amt	Amount spent for other entertainment ($)
Qc3d_K_Amt	Amount spent for other (describe) ($)
Share of spending in NW FL on last trip for... (1=0%, 2=1-49%, 3=50-75%, 4=76-100%):	
Qc3d_A_Nf	Boat rental, fuel and oil
Qc3d_B_Nf	Ramp, mooring, and parking
Qc3d_C_Nf	Fishing charter, party boat, and diving fees
Qc3d_D_Nf	Sport equipment rentals
Qc3d_E_Nf	Sport equipment purchases
Qc3d_F_Nf	Miscellaneous retail purchases
Qc3d_G_Nf	Food and beverage from stores
Qc3d_H_Nf	Food and beverage from restaurants
Qc3d_I_Nf	Clothing and accessories
Qc3d_J_Nf	Other entertainment
Qc3d_K_Nf	Other
Number of planned trips cancelled because of oil spill over next year to…	
Qd3_E	Northwest Florida (NW FL)
Qd3_F	Southwest Florida
Qd3_G	Florida Keys
Qd3_H	Florida Atlantic Coast

Note: The Group variable is "DOV_Group" in the data file. "No" responses were coded as 2 in the original data file. Unless noted, all variables apply to Group 1.

Confirmation of Market Area

The determination of the market area for the purpose of reaching the majority of potential recreational visitors to the study region was based on secondary data from ongoing general visitor surveys (i.e., *VISIT FLORIDA*®) and intercept surveys of coastal anglers (i.e., MRFSS). While these two data sources produced remarkably similar market areas that included 13 mostly southern U.S. states, an independent measure of actual visitors was obtained for comparison. Results were used to verify, among other things, the extent that economic impacts are under or over reported as a result of using the limited 13-state market area consisting of Georgia, Alabama, Tennessee, Louisiana, Texas, Missouri, Mississippi, Kentucky, Arkansas, Ohio, Indiana, Illinois, and Florida (from information in Table 4-6).

The Florida Survey Research Center managed the design and implementation of the intercept survey effort, which was completed during summer 2011 (July-early September). The sampling design was based on fly-overs of the coastal areas in June 2011. One fly-over stretched from Perdido Key (western border of the study region) to Yankeetown (southeastern border of the study region) and the second fly-over went from Perdido Key

but stopped near Alligator Point due to lack of any notable beaches down to Yankeetown (only marsh areas). In addition to digital video, still photographs were taken every five seconds.

The best set of photographs across the region on a non-holiday weekend and weekday were used to develop a sampling protocol that accounted for regional differences in the coastline, nearby amenities, and estimated number of visitors. Once the target number of intercepts and the specific sampling approach for each beach was decided, a field research team was hired and trained. In sum, a total of 2,540 intercepts were conducted in the study region. The composition of visitors by state of home residence is presented and compared to that associated with the Internet respondents, anglers intercepted by the MRFSS, and *VISIT FLORIDA*® general visitor programs in Table 4-12.

Table 4-12. Comparison of non-Florida visitor shares to the study region by state in the defined market area

State	Intercept (2011)	Internet (2011)	MRFSS (2009)	*VISIT FLORIDA*® (2009)
Alabama	16.5%	15.2%	17.1%	17.4%
Arkansas	3.8%	1.5%	2.8%	2.2%
Georgia	18.0%	17.8%	31.8%	26.2%
Illinois	2.0%	7.0%	2.1%	3.9%
Indiana	2.3%	5.8%	1.5%	1.6%
Kentucky	3.7%	6.7%	3.7%	4.2%
Louisiana	11.4%	9.2%	5.0%	7.6%
Mississippi	3.6%	3.3%	3.9%	9.4%
Missouri	4.5%	5.2%	2.9%	1.6%
Ohio	2.7%	6.4%	1.9%	1.6%
Tennessee	11.4%	10.4%	10.7%	4.3%
Texas	9.8%	11.4%	5.3%	7.6%
Total	89.8%	100.0%	88.8%	87.6%

Notes: The Internet survey shares are unweighted and exclude "don't know" and refusals. The totals may not equal the sums of the individual numbers due to rounding.

The intercept survey included a slightly larger share of visitors to the study region as compared to observed visitation from the MRFSS program or *VISIT FLORIDA*®. In sum, he study will underestimate economic impacts due the exclusion of at least 11 percent of domestic visitors (and all international visitors). Details on the intercept survey design, effort and the results are summarized in Appendix D.

Regional Economic Impact Analysis

The total economic impacts of decreased visitor spending in the study region due to the *BP/Deepwater Horizon* oil spill were estimated using a regional economic model constructed with the *Impact Analysis for Planning (IMPLAN)* Software (Version 3) and associated 2010 Florida county datasets licensed from Minnesota IMPLAN Group, Inc. *IMPLAN* is an input-output/social accounting matrix (I-O/SAM) modeling system. Input-output (I-O) analysis is a standard technique for estimating the broad economic impacts resulting from changes in specific economic activities in a regional economy (Schaffer, 1999; Miller and Blair, 2009). These economic models account for the transactions between industries, governments, employees, and households. *IMPLAN* models provide detailed estimates of impacts on the regional economy from changes in *final demand*, which is the value of goods and services produced and sold to final users (institutions) during the calendar year. In analyzing the regional economic impacts of the *BP/Deepwater Horizon* oil spill, a decrease in final demand represents the amount of reduced industry purchases of goods and services from their input industries in the local economy, and changes in employee spending.

IMPLAN is a static equilibrium model, implying that the estimated changes in output, earnings or employment have no real time dimensions. I-O modeling produces a matrix of regional economic multipliers that estimate the additional spending resulting from the initial change in final demand, or the lost additional spending due to foregone recreational trips in the case of the *BP/Deepwater Horizon* oil spill. In other words, as trips are cancelled, some business sectors purchase fewer inputs, that also affects suppliers of inputs in the local economy. Not all of the spending change is re-spent (or not spent) in the local economy due to "leakage" effects in which a portion of this spending takes place (or is lost) outside the region in the form of payments for inputs foregone from other areas, taxes paid to local or state and federal sources, and so on.

Regional multipliers represent the estimated total impact on the regional economy in dollars of output, dollars of earnings, or numbers of jobs that result from a change in final demand by the affected industries. The *output, value added, and income multipliers* represent the total dollar change in all industries due to a one dollar change in final demand (in this case, visitor expenditures) for the affected industries. *Employment multipliers* represent the total change in the number of jobs from all industries due to a one million dollar change in final demand (job-years). The multipliers are derived from the I-O model via the Leontief Inverse of the regional industry-by-industry total requirements table (Miller and Blair, 2009).

The multipliers are used to determine and estimate the "ripple effect" of the *BP/Deepwater Horizon* oil spill as follows:

- Direct effects: The immediate decline in spending on purchases for final use (e.g., purchases and rental of equipment and supplies to participate in saltwater-related recreation and expenses for travel). In determining the impact from the oil spill, this estimates the foregone expenditures associated with cancelled trips that were not replaced to the study region; this is the change in final demand discussed above.
- Indirect effects: The reduced spending by industries that resulted from the reduced direct expenditures from the oil spill (e.g., reduced sales by sectors within the region that supply the goods and services related to saltwater-related recreation); this is the result of applying the indirect effects multipliers to the direct effects.
- Induced effects: The reduced expenditures by households of employees and business proprietors in directly and indirectly impacted businesses for housing, utilities, groceries, and so forth. In the case of the oil spill, we estimate expenditures that were not incurred, thus, the lost income to employees results in decreased demand for goods and services and, in turn, decreases production and sales of inputs; this is the result of applying the induced effects multipliers to the direct and indirect effects.

Parameters in the *IMPLAN* software and regional economic databases are derived from state and federal government statistics. Regional data are available for all U.S. states and counties for 440 industry sectors classified by North American Industry Classification System (NAICS). Information is provided on industry output, employment, labor and property income, personal and business taxes, household and institutional commodity demand, inter-regional commodity trade, transfer payments (e.g., welfare and retirement pensions), personal savings, and capital investments. In addition to estimating the total economic impact of an event in a specific region, it is sometimes useful to decompose the direct, indirect, and induced changes in output, earnings, or employment across the sectors, thereby separating the direct industry effects from inter-industry effects and those of households; *IMPLAN* supports such disaggregation.

In this study, the regional model was comprised of 12 coastal counties in Northwest Florida: Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Franklin, Wakulla, Jefferson, Taylor, Dixie, and Levy (i.e., the study region). The model was constructed with trade flows estimated using econometric regional purchase coefficients (RPCs) and all social accounts treated as endogenous to the model, including households, governments, capital, and enterprises.

Estimated total expenditures for cancelled trips, both past and future, were entered separately into the *IMPLAN* model. Each category of expenses was assigned to the appropriate industry sector based on the NAICS as shown in Table 4-13.

Table 4-13. Survey expenditure categories and corresponding *IMPLAN* industry sectors

Expense type and subtype	*IMPLAN* industry sector
Transportation:	
Commercial or private aircraft	332-Transport by air (not included in analysis)
Own vehicle	326-Retail stores: gasoline stations (fuel)
Rental vehicle	326-Retail stores: gasoline stations (fuel)
Rental vehicle	362-Automotive equipment rental, leasing
Lodging:	
Hotel/motel	411-Hotels and motels
Rented timeshare/condo/house/B&B	360-Real estate
Campground	412-Other accommodations
Family/friends	412-Other accommodations
Boat rental, fuel and oil	334-Transport by water (marinas)
Boat rental, fuel and oil	326-Retail stores: gasoline stations (fuel and oil)
Ramp, mooring and parking fees	334-Transport by water (marinas)
Fishing charter, party boat, and diving fees	334-Transport by water (marinas)
Fishing charter, party boat, and diving fees	410-Other amusement, recreation industries
Sport equipment rentals	410-Other amusement, recreation industries
Sport equipment purchases	328-Retail stores: sporting, hobby, books
Miscellaneous retail purchases	329-Retail stores: general merchandise
Food and beverage from stores	324-Retail stores: food and beverage
Food and beverage from restaurants	413-Food services, drinking places
Clothing and accessories	327-Retail stores: clothing, accessories
Other entertainment	403-Spectator sports companies
Other entertainment	406-Museums, historical sites, zoos, etc.
Other entertainment	409-Amusement parks, arcades, gambling
Other (open-ended)	329-Retail stores: general merchandise

Notes: Expenses for rental vehicles, boat rentals, fishing charter/party/diving fees, and other entertainment were split equally into two or more *IMPLAN* sectors to better match the type of expenditure involved. Equal shares were assumed for simplicity since no additional information was available for the allocations. See text for further detail.

Expenses for air transportation were assumed to be made outside the region and so were not included in the impact analysis. Some expense categories were split equally into two or three separate industry sectors to represent reasonable visitor spending patterns. For example, expenses for rental vehicles were split between *IMPLAN* sectors for retail stores at gasoline stations and automotive equipment rental/leasing; expenses for boat rental, fuel, and oil were split into the transport by water sector (i.e., marinas) and retail stores (gasoline stations); expenses for fishing charters/party/diving were split into the marina

and other amusement/recreation industries; and expenses for other entertainment were split into spectator sports, museums etc. and amusement parks. Also, expenses for rented accommodations were assigned to the *IMPLAN* sector "Real estate."

Retail margins were applied to purchases in the "Retail stores" sectors using factors in the *IMPLAN* software to discount values for non-local manufacturing, transportation, and wholesaling. Retail margins typically result in only 20 to 30 percent of gross sales being applied to the multipliers for estimating regional impacts. Estimated expenditures for all cancelled trips were deflated to 2011 dollars using the GDP Implicit Price Deflator, and entered into the model as 2011 events. The IMPLAN software applied industry-specific deflator factors to express values in model year terms (2010) then re-inflated values to express in 2011 year dollars.

IMPLAN multipliers for the Northwest Florida study region are shown in Table 4-14. The multipliers for output, value added, labor income, other property type income, and indirect business taxes are denominated in dollars per dollar of direct output (expense), while the employment multipliers are denominated in full-time and part-time jobs per million dollars output (i.e., job-years).[46] These multiplier values are typical for a multi-county region with a moderate level of economic development.

Results

Respondent Qualification and Trip Cancellations

The number of households in the 13-state market area (excluding residents of the study region) who were considered as qualified visitors to the study region was estimated at 6.14 million (Table 4-15). This was based on the total number of households in the market area (43.94 million non-residents of the study region; Table 4-10) multiplied by 0.1396 (specifically, 2,083/14,916), representing the 13.96 percent of survey respondents who reportedly had engaged in saltwater-related recreation within the past five years, and had made a trip to the study region within the past two years or intended to take at least one recreational trip involving saltwater-related activities to the Gulf of Mexico before cancelling due to the oil spill.

[46] The "indirect business tax" multipliers are included in Table 4-14 and the impacts are in Tables 4-23 and 24 for completeness, but an analysis of tax impacts is complicated given the nuances of local tax codes. As such, the tax implications are not discussed in this report.

Table 4-14. 2010 *IMPLAN* multipliers for the study region

IMPLAN Sectors	Output (dollars per $output)	Value added (dollars per $output)				Employment (jobs per Mn $ output)
		Total	Labor income	Other property income	Indirect business taxes	
324-RS: food and beverage	2.444	1.716	1.091	0.391	0.234	33.34
326-RS: gasoline stations	2.444	1.686	1.000	0.438	0.248	29.03
327-RS: clothes, accessories	2.444	1.531	0.949	0.337	0.245	32.90
328-RS: sporting, hobby, books	2.431	1.618	0.989	0.403	0.226	35.14
329-RS: general merchandise	2.443	1.755	1.090	0.427	0.239	32.82
334-Transport by water	2.064	1.099	0.616	0.404	0.079	12.55
360-Real estate	2.343	1.819	0.693	0.968	0.158	19.91
362-Auto. equip. rental, leasing	2.373	1.501	0.730	0.570	0.201	18.76
403-Spectator sports companies	2.414	1.246	0.863	0.141	0.242	44.82
406-Museums, hist. sites, zoos, etc.	2.382	1.481	0.785	0.593	0.103	23.48
409-Amus. parks, arcades, gamb.	2.329	1.513	0.716	0.595	0.202	21.41
410-Other amuse., rec. industries	2.311	1.489	0.790	0.556	0.143	28.98
411-Hotels and motels	2.362	1.469	0.808	0.503	0.158	23.15
412-Other accommodations	2.401	1.394	0.851	0.424	0.119	26.86
413-Food services, drinking places	2.207	1.353	0.815	0.405	0.133	29.33

Note: RS represents “Retail Stores.”
Source: *IMPLAN* software and Florida county data (MIG, Inc., 2011).

Table 4-15. Calculation of qualified households in the market area

• Number of households in the 13-state market area for coastal tourism to the study region, excluding residents of the study region (U.S. Census Bureau, Table 4-10)	43,943,380
• Percent of survey respondents engaging in saltwater-related recreation during last 5 years, and visiting the study region within the last 2 years or intending to visit the Gulf of Mexico for saltwater-related recreation but cancelled due to the oil spill (Table 4-7)	13.96%
• Calculated number of households in market area (excluding residents of the study region) engaging in saltwater recreation and visiting the study region	6,136,636

Cancelled trips to the study region were reported over two time periods: (1) those that would have taken place in the past (June 1, 2010 until the date of the survey) and are referred to as "past trips," and (2) those that would have taken place in the next 12 months and are referred to as "future trips." In both cases, respondents were instructed to count only those trips that were actually planned and involved some effort to cancel versus trips that were considered. The number of trips cancelled to Florida due to the oil spill is summarized in Table 4-16.

Qualified survey respondents reported cancelling a total of 1,289 trips to Florida, including 830 trips planned since June 2010 (past trips) and 459 trips planned over the next 12 months (future trips). Among all Florida coastal regions, the study region had the largest number of cancelled trips reported: 441 past trips, and 153 future trips; cancelled trips to the study region were reported by 10.1 percent and 3.6 percent of visitors, respectively. The mean number of trips cancelled per household was calculated with zeroes imputed for missing values, and adjusted using the *Knowledge Networks* weighting factors (see Methods section and Appendix A).

The mean number of trips per household cancelled to the study region ("Northwest Florida") was 0.240 past trips and 0.066 future trips. The total number of trips cancelled to the study region by the market area population was estimated by multiplying the mean trips cancelled per household by the number of qualified households (6.14 million). An estimated total of 4.15 million trips to Florida were cancelled, including 2.78 million past trips and 1.37 million future trips. The estimated total number of past and future trips cancelled to the study region were 1.47 million and 0.40 million, respectively, for a total of 1.88 million (Table 4-16).

Table 4-16. Number of cancelled past and future trips due to the *BP/Deepwater Horizon* oil spill reported by survey respondents from June 1, 2010 through approximately September 2012

Type of cancelled trip	Survey variable(s)	Number (%) reporting cancelled trips	Number of trips cancelled	Mean trips cancelled per household	Estimated total trips (mil.) cancelled
Past trips by destination:					
Northwest Florida (study region)	Qb14b_E, Qa7_one_A, Qa7_Mlt_A_(a-e)_trips	211 (10.1%)	441	0.240	1,474,884
Southwest Florida	Qb14b_F	69 (3.3%)	197	0.097	592,452
Florida Keys	Qb14b_G	55 (2.6%)	192	0.116	709,086
Total Past Trips			830		2,776,432
Future trips by destination:					
Northwest Florida	Qd3_E	76 (3.6%)	153	0.066	402,638
Southwest Florida	Qd3_F	51 (2.4%)	100	0.048	295,460
Florida Keys	Qd3_G	44 (2.1%)	116	0.059	359,095
Florida Atlantic coast	Qd3_H	24 (1.2%)	90	0.051	312,164
Total Future Trips			459		1,369,357
Total trips by destination:					
Florida			1,289		4,145,790
Northwest Florida			594		1,877,512

Notes: Past trips refer to trips cancelled from June 1, 2010 until the day of the survey (from August 12 – September 24, 2011). Future trips refer to the next 12 months. Mean trips cancelled per household were calculated using the *Knowledge Networks* respondent weighting factors. Zeros were imputed for missing values. Estimated total trips cancelled were calculated from the mean trips per household reported by groups 1 and 2 and the number of qualified households in market area (i.e., 6.14 million). The totals may not equal the sums of the individual numbers due to rounding.

Trip Expenditures

Average expenditures by past visitors to the study region (excluding residents of the study region) on their most recent trip are summarized in Table 4-17. The average trip expenditures per household totaled $1,707. Total trip spending averaged $33.40 per person-day based on the number of nights reported away from home and the number of persons in the party, with children counted as one-half person. The largest expense items were lodging, representing 29.2 percent of total expenses, followed by transportation (23.9%), and restaurants (11.3%).

Over 98 percent of respondents reported expense information for transportation and lodging; over 80 percent reported expenses for food and beverage stores and restaurants; and over 50 percent reported expenses for sport equipment rentals or purchases, entertainment, and saltwater recreation fees such as charter boats, diving, mooring fees, or boat rentals. The share of respondents not reporting has the potential to overestimate the average total trip expenditures if some of these respondents did not incur the expense. Although the lowest reported incidences of non-response were associated with the lowest average expenditures (for boat-related activities in particular), it is most appropriate and conservative to assume that all missing values are zero. Those results are presented following a discussion of the standard deviations, transportation and lodging alternatives, and the share of expenditures within the study region.

While the relative standard deviations (i.e., the ratio of the standard deviation statistic to the mean) were less than 20 percent for all reported expense categories, except miscellaneous "other," this item represented less than five percent of total expenses. This variation within the data is considered reasonable for the heterogeneity in trip length and party size reported.

The modes of transportation and lodging used by survey respondent on their most recent trip to the study region are summarized in Table 4-18. Owned passenger vehicles were the most common form of transportation, used by 80 percent of respondents. All types of ground transportation, owned or rented passenger vehicles and recreational vehicles (RV) represented over 91 percent of respondents, while air travel was reported for 7 percent, and miscellaneous other by 0.6 percent. The most common type of lodging was hotels, used by 41 percent of respondents, followed by condominiums or apartments (23.8%), and staying with family or friends (15.5%).

Table 4-17. Reported average expenses for most recent typical trip to the study region (group 1) by non-residents of the study region

Expense Category	Survey variable	Mean value reported	Percent of total	Number respondents reporting	Percent respondents	Relative Standard Deviation
Transportation	Qc3a	$407.53	23.9%	1,522	98.9%	4.2%
Lodging	Qc3b	$498.92	29.2%	1,523	99.0%	3.7%
Boat rental, fuel and oil	Qc3d_A_Amt	$82.03	4.8%	868	56.4%	12.7%
Ramp, mooring, and parking	Qc3d_B_Amt	$17.85	1.0%	789	51.3%	18.5%
Charter/party/diving fees	Qc3d_C_Amt	$41.28	2.4%	780	50.7%	11.8%
Sport equipment rental	Qc3d_D_Amt	$30.46	1.8%	792	51.5%	10.1%
Sport equipment purchases	Qc3d_E_Amt	$27.18	1.6%	783	50.9%	10.8%
Misc. retail purchases	Qc3d_F_Amt	$68.42	4.0%	1,119	72.7%	6.4%
Food and beverage – stores	Qc3d_G_Amt	$119.14	7.0%	1,232	80.1%	4.4%
Food and beverage – restau.	Qc3d_H_Amt	$193.09	11.3%	1,251	81.3%	3.3%
Clothing and accessories	Qc3d_I_Amt	$77.09	4.5%	945	61.4%	11.4%
Other entertainment	Qc3d_J_Amt	$69.98	4.1%	921	59.8%	9.2%
Other	Qc3d_K_Amt	$74.00	4.3%	417	27.1%	29.1%
Total		$1,706.96	100.0%			

Notes: Results represent original data reported; zeros were not imputed for missing values. Data are for respondents reporting that their most recent trip to the area was "typical." Values are expressed in 2011 dollars using GDP implicit price deflator. The relative standard deviation is the standard deviation expressed as a percentage of the mean value. The totals may not equal the sums of the individual numbers due to rounding.

Table 4-18. The types of transportation and lodging used for most recent trip to region reported by survey respondents

Type	Number of respondents	Percent of respondents
Transportation:		
Own passenger vehicle	1,395	79.9%
Rented passenger vehicle	137	7.8%
Own RV	40	2.3%
Rented RV	18	1.0%
Commercial/private aircraft	122	7.0%
Other	24	1.4%
Refused/don't know	10	0.6%
Total	1,746	100.0%
Lodging:		
Hotel or motel	722	41.4%
Timeshare	77	4.4%
Condo, apartment, or house	416	23.8%
Bed & breakfast (B&B)	24	1.4%
Campground	61	3.5%
Family or friends	270	15.5%
Home (day trip)	95	5.4%
Other	56	3.2%
Refused/don't know	25	1.4%
Total	1,746	100.0%

The shares of expenses made within the study region by category are shown in Table 4-19. The shares of expenses were reported by category: "none" (0%), "some" (1 – 49%), "most" (50 – 75%), "nearly all" (76 – 100%). Note that the extremes are grouped differently. Defining a zero category but grouping the maximum provides a conservative estimate of overall trip expense. The food and beverage stores, restaurants, and miscellaneous retail expense categories were those for which a relatively high percentage of respondents made most or nearly all purchases in the region. At the other extreme, the majority of expenditures for boating-related activities were not spent in the region. For the fishing charter, party boat, or diving fees (listed as "charter/party/diving fees"), the low percentage of expenditures in the region likely reflects the relatively low incidence of participation in such activities in the sample population.

Table 4-19. Distribution of share of most recent trip expenditures in the study region by survey respondents by expense category

Expense Category	Share of expenditures in study region			
	None (0%)	Some (1 – 49%)	Most (50 – 75%)	Nearly all (76 – 100%)
Boat rental, fuel and oil	73.9%	12.1%	4.3%	9.8%
Ramp, mooring and parking	83.0%	9.2%	2.1%	5.8%
Charter/party/diving fees	85.5%	6.4%	1.6%	6.6%
Sport equipment rental	82.9%	7.6%	1.8%	7.6%
Sport equipment purchases	81.7%	8.6%	2.7%	7.0%
Misc. retail purchases	35.9%	33.9%	7.4%	22.9%
Food and beverage - stores	19.2%	36.7%	14.7%	29.4%
Food and beverage – restau.	17.6%	29.9%	21.0%	31.4%
Clothing and accessories	61.5%	20.3%	4.5%	13.7%
Other entertainment	63.7%	18.0%	3.9%	14.4%
Other	82.1%	6.6%	3.0%	8.3%

Estimated average expenditures per household on the most recent trip to the study region are shown in Table 4-20. The expenditures are itemized by category, including by mode of transportation and lodging, with zeroes imputed for missing values. All average values are derived using the *Knowledge Networks* weighting factors to include each respondent according to individual representativeness in the population. On this basis, the average total trip expense was $1,237. Using the information in Tables 4-9 and 4-19, the average total expense within the study region was $693. The largest expense item in the study region was timeshare, condominium, or bed & breakfast rentals, representing 22.4 percent of the total, followed by owned vehicle expense (21.8%), and hotel (13.5%). Expenses for air travel were assumed to not be made within the study region, and so were excluded from further analysis.

Table 4-20. Weighted expenditures per household on most recent trip to the study region (NW FL) and spending in the NW FL region, by expense category

Expense Category	Mean Trip Expenses		
	Total	Amount spent in NW FL	Share spent in NW FL
Transportation: Owned vehicle	$262.34	$150.76	21.8%
Rented vehicle	$70.26	$43.82	6.3%
Aircraft	$36.74	$0.00	0.0%
Lodging: Hotel or motel	$177.02	$93.83	13.5%
Timeshare, condo, apt., etc.	$225.31	$155.31	22.4%
Camping	$12.68	$6.97	1.0%
Family/friends	$10.03	$6.34	0.9%
Other	$2.07	$0.83	0.1%
Boat rental, fuel and oil	$38.74	$20.52	3.0%
Ramp, mooring, and parking fees	$8.51	$3.23	0.5%
Charter/party/diving fees	$16.67	$8.93	1.3%
Sport equipment rental	$12.60	$6.04	0.9%
Sport equipment purchases	$13.22	$6.50	0.9%
Miscellaneous retail purchases	$43.72	$20.29	2.9%
Food and beverage – stores	$82.45	$45.34	6.5%
Food and beverage – restaurants	$137.12	$75.35	10.9%
Clothing and accessories	$38.06	$16.22	2.3%
Other entertainment	$33.15	$17.82	2.6%
Other	$16.42	$14.87	2.1%
Total	$1,237.10	$692.97	100.0%

Notes: Zeros were imputed for missing values; expenditures were weighted. Data are for respondents who reported their most recent trip to the area was "typical." Values are expressed in 2011 dollars. The totals may not equal the sums of the individual numbers due to rounding.

The estimated total reduction in visitor spending in the study region due to trips cancelled for the entire household population in the market area is shown in Table 4-21. The values were calculated from the mean per household expenditures in the study region (Table 4-20, middle data column) together with the total number of trips cancelled to the region in the past and future (Table 4-16, right column, rows 1 and 5). The total reduction in visitor spending is estimated at $1.30 billion, including $1.02 billion for past planned trips cancelled since June 2010, and $279 million for future planned trips cancelled over the next 12 months, at the time of the survey.

Table 4-21. Estimated total reduction in visitor spending (Mn $) in the study region for cancelled past trips (since June 1, 2010) and future trips (next 12 months) by qualified visitors in the market area due to the *BP/Deepwater Horizon* oil spill by expense category

	Reduced expenditures from cancelled trips (Mn $)		
Expense Category	Past trips	Future trips	Total trips
Owned vehicle	−$222.36	−$60.70	−$283.06
Rented vehicle	−$64.63	−$17.64	−$82.27
Hotel or motel	−$138.38	−$37.78	−$176.16
Timeshare, condo, apt., etc.	−$229.07	−$62.53	−$291.60
Camping	−$10.28	−$2.81	−$13.08
Lodging with family/friends	−$9.36	−$2.55	−$11.91
Other lodging	−$1.23	−$0.34	−$1.57
Boat rental, fuel and oil	−$30.26	−$8.26	−$38.52
Ramp, mooring, and parking fees	−$4.77	−$1.30	−$6.07
Charter/party/diving fees	−$13.18	−$3.60	−$16.77
Sport equipment rental	−$8.91	−$2.43	−$11.35
Sport equipment purchases	−$9.59	−$2.62	−$12.20
Miscellaneous retail purchases	−$29.93	−$8.17	−$38.09
Food and beverage – stores	−$66.87	−$18.26	−$85.13
Food and beverage – restaurants	−$111.13	−$30.34	−$141.47
Clothing and accessories	−$23.92	−$6.53	−$30.45
Other entertainment	−$26.28	−$7.17	−$33.45
Other	−$21.93	−$5.99	−$27.91
Total	−$1,022.05	−$279.02	−$1,301.07

Notes: Values are expressed in millions 2011 dollars (Mn $). The totals may not equal the sums of the individual numbers due to rounding.

Regional Economic Impacts

The expenditure information for cancelled trips to the study region was entered in the *IMPLAN* regional model as shown in Table 4-22. The negative values indicate reductions in spending in the study region. These amounts were obtained from the estimated total spending reductions shown in Table 4-21, mapped onto the corresponding *IMPLAN* sectors shown in Table 4-13. Expenditures for all cancelled trips were specified as events in 2011 to match the year of indexed (inflation-adjusted) values. Retail margins were applied to expenses for retail sector purchases, and all expense amounts were taken as 100 percent local within the study region.

Table 4-22. Summary of reduced expenditures (Mn $) to the study region by *IMPLAN* sector for cancelled past trips (since June 1, 2010) and future trips (next 12 months) by qualified visitors in the market area due to the *BP/Deepwater Horizon* oil spill

	Reduced expenditures from cancelled trips (Mn $)		
IMPLAN Sector	Past trips	Future trips	Total trips
324-RS: food and beverage	–$66.87	–$18.26	–$85.13
326-RS: gasoline stations	–$269.80	–$73.65	–$343.45
327-RS: clothes, accessories	–$23.92	–$6.53	–$30.45
328-RS: sporting, hobby, books	–$9.59	–$2.62	–$12.20
329-RS: general merchandise	–$51.85	–$14.16	–$66.01
334-Transport by water	–$26.49	–$7.23	–$33.72
360-Real estate	–$229.07	–$62.53	–$291.60
362-Auto. equip. rental, leasing	–$32.31	–$8.82	–$41.14
403-Spectator sports companies	–$8.76	–$2.39	–$11.15
406-Museums, hist. sites, zoos, etc.	–$8.76	–$2.39	–$11.15
409-Amus. parks, arcades, gamb.	–$8.76	–$2.39	–$11.15
410-Other amuse., rec. industries	–$15.50	–$4.23	–$19.73
411-Hotels and motels	–$138.38	–$37.78	–$176.16
412-Other accommodations	–$20.86	–$5.69	–$26.56
413-Food services, drinking places	–$111.13	–$30.34	–$141.47
Total	–$1,022.05	–$279.02	–$1,301.07

Notes: Amounts for Retail stores, RS (sectors 324-329), were reduced to reflect margins for manufacturing, transportation and wholesale distribution. Values are expressed in millions 2011 dollars (Mn $). The totals may not equal the sums of the individual numbers due to rounding.

The estimated total regional economic impacts of reduced visitor spending due to cancelled trips to the study region (i.e., 12 coastal counties in Northwest Florida) because of the oil spill are summarized in Table 4-23. All economic impacts estimates in the table are negative values, representing reductions to the regional economy of Northwest Florida.

The *total output impact* (loss) was estimated at $2.036 billion, including $1.600 billion for past trips cancelled and $436 million for future trips cancelled. The total output impact for all trips cancelled includes the direct effect (loss) of $875 million plus the indirect multiplier effect for supply chain activity of $190 million and the induced multiplier effect for employee and government re-spending of $972 million.

Table 4-23. Summary of total economic impacts of reduced visitor spending for cancelled past and future trips to Northwest Florida due to the *BP/Deepwater Horizon* oil spill by qualified visitors in the market area

Cancelled trips	Multiplier effect	Output (Mn$)	Value added (Mn $)				Employment (job-years)
			Total	Labor income	Other property income	Indirect business taxes	
Past:							
	Direct	−$687.4	−$458.4	−$160.2	−$227.0	−$71.2	−7,568
	Indirect	−$149.6	−$90.9	−$45.0	−$38.1	−$7.8	−1,335
	Induced	−$763.0	−$528.2	−$333.6	−$162.2	−$32.5	−7,181
	Total	−$1,600.0	−$1,077.5	−$538.7	−$427.3	−$111.5	−16,084
Future:							
	Direct	−$187.7	−$125.9	−$43.5	−$62.9	−$19.6	−2,083
	Indirect	−$40.0	−$24.3	−$12.0	−$10.2	−$2.1	−356
	Induced	−$208.6	−$144.5	−$91.3	−$44.3	−$8.9	−1,963
	Total	−$436.3	−$294.7	−$146.7	−$117.4	−$30.6	−4,402
Total:							
	Direct	−$875.1	−$584.3	−$203.7	−$289.9	−$90.8	−9,651
	Indirect	−$189.6	−$115.2	−$56.9	−$48.3	−$9.9	−1,691
	Induced	−$971.6	−$672.7	−$424.8	−$206.5	−$41.3	−9,144
	Total	−$2,036.3	−$1,372.1	−$685.4	−$544.7	−$142.0	−20,486

Notes: Impacts include regional multiplier effects. Values are expressed in millions 2011 dollars. Total value added is the sum of labor income, other property income and indirect business taxes. Impact values are independent and not additive.

The *total value added impact* amounted to losses of $1.372 billion. The total impact to labor income (earnings) in the form of employee wages, salaries, and proprietor income was a loss of $685 million. Impacts on other property income (such as rents, royalties, interest receipts, and dividends) amounted to loss of $545 million.

The *total employment impact* was estimated to be a loss of 20,486 job-years, representing all full- and part-time jobs over the study period.

Regional economic impacts to major industry sectors in Northwest Florida, classified by the North American Industry Classification System (NAICS), are shown in Table 4-24. The largest *value added impacts* occurred in the sectors for Real Estate and Rentals ($407 million reduction), Government ($266 million reduction),[47] Accommodation and Food Services ($208 million reduction), and Retail Trade ($122 million reduction).

In terms of *employment impacts*, the largest reductions were estimated for Accommodation and Food Services (5,277 lost job-years), Retail Trade (3,029 lost job-years), Government (2,802 lost job-years), and Real Estate/Rentals (2,752 lost job-years).

[47] The government impacts do not reflect the increased demand on State Government to provide the services necessary to address the event (e.g., expense for disaster planning, preparation, emergency response, or cleanup).

Table 4-24. Total economic impacts, by industry sector, of reduced visitor spending for all cancelled trips from June 2010-September 2012 to Northwest Florida due to the *BP/Deepwater Horizon* oil spill by qualified visitors in the market area

Industry Sector (2-digit NAICS)	Output (Mn $)	Value added (Mn $)				Employment (job-years)
		Total	Labor income	Other property income	Indirect business taxes	
11 Agriculture, forestry, fisheries	−$3.9	−$1.9	−$1.0	−$0.8	−$0.1	−48
21 Mining	−$1.9	−$0.5	−$0.3	−$0.1	−$0.1	−15
22 Utilities	−$31.4	−$26.4	−$6.6	−$14.5	−$5.3	−66
23 Construction	−$74.4	−$28.7	−$22.2	−$6.0	−$0.5	−617
31-33 Manufacturing	−$36.0	−$9.2	−$6.0	−$2.9	−$0.3	−111
42 Wholesale trade	−$29.6	−$23.2	−$11.5	−$6.2	−$5.5	−209
44-45 Retail trade	−$179.7	−$122.3	−$78.0	−$12.9	−$31.4	−3,029
48-49 Transport. & warehousing	−$56.6	−$25.2	−$14.2	−$9.1	−$1.9	−348
51 Information	−$37.1	−$18.7	−$6.9	−$10.3	−$1.5	−145
52 Finance & insurance	−$90.0	−$41.1	−$20.8	−$18.3	−$2.0	−527
53 Real estate & rental	−$484.5	−$407.4	−$46.1	−$310.8	−$50.5	−2,752
54 Prof., scientific & tech. services	−$66.2	−$43.5	−$35.6	−$6.6	−$1.3	−675
55 Management of companies	−$5.9	−$2.9	−$2.3	−$0.4	−$0.2	−43
56 Admin. & waste services	−$43.7	−$24.2	−$17.9	−$5.5	−$0.8	−763
61 Educational services	−$7.4	−$3.2	−$3.7	$0.7	−$0.2	−149
62 Health & social services	−$102.9	−$60.7	−$56.3	−$2.8	−$1.6	−1,147
71 Arts, entert. & recreation	−$71.3	−$37.5	−$17.0	−$13.3	−$7.2	−1,138
72 Accomm. & food services	−$386.8	−$208.0	−$112.5	−$63.2	−$32.2	−5,277
81 Other services	−$39.4	−$21.3	−$19.6	−$0.3	−$1.3	−627
92 Government & non-NAICS	−$287.7	−$266.1	−$206.9	−$61.1	$1.9	−2,802
Total	−$2,036.3	−$1,372.1	−$685.4	−$544.7	−$142.0	−20,486

Notes: Values are expressed in 2011 dollars. Impacts include regional multiplier effects.. The totals may not equal the sums of the individual numbers due to rounding.

Conclusions

Results from this economic impact study can be used to develop a comprehensive estimate of the losses to the Northwest Florida regional economy and the State of Florida following the *BP/Deepwater Horizon* oil spill. These economic impact estimates are considered reasonable and defensible for the study region due to a number of key aspects of the survey design and implementation. These aspects included the use of a relatively large and representative sample via Knowledge Networks Inc., the relative speed of implementation following the event to reduce recall bias on cancelled trips, and the collection of detailed trip information from a range of respondent types, including both past visitors and those planning to visit for the first time. Also, a number of assumptions resulted in the generation of conservative estimates of economic impacts of the *BP/Deepwater Horizon* oil spill to the study region. These estimated impacts should, therefore, be considered as one component of the total amount of economic information available on the losses resulting from the spill. The conservative assumptions embedded in the estimated $2.04 billion total economic output impact and estimated 20,486 job-years lost include:

- The market area for saltwater-related tourism to the study region (i.e., 12 coastal counties in Northwest Florida) included only 13 states. Travelers from other states and international origins were excluded. Since visitors from more distant origins are likely to stay for longer periods of time and incur higher trip-related costs, excluding these visitors underestimates the total number of households affected and the average trip expenditures.
- Only respondents who visited the study region within the past two years for saltwater-related recreation or cancelled a planned trip to the Gulf of Mexico for such recreation were considered as qualified market participants. Respondents who have not participated in saltwater-related recreation in the past five years (e.g., young adults) and those who may have cancelled their first planned trip(s) were disqualified. Past or potential visitors not actively "participating" in saltwater-related recreation (e.g., those who might only enjoy viewing the coastal area) were also disqualified.
- Reduced expenditures associated with past trips that were shortened but not necessarily cancelled due to the oil spill were not considered.
- Possible cancelled trips to the region due to the oil spill were considered only 12 months into the future.
- Calculation of the average number of cancelled trips was based on the potentially affected household population, which means that all missing values from respondents not answering or quitting the survey were assumed to be zero.
- The weighted average trip expenditures in the study region are underestimated since (1) missing values in any of the 13 categories were assumed to be zero and (2) the ranges of in-region expenditure shares were conservatively defined (Table 4-9). In

addition, foregone expenditures for air transportation in the study region were not considered despite the potential use of in-region airports.

- Changes in visitor behavior documented in the on-site intercept survey of 2,540 beach visitors during the summer of 2011 (Appendix D) that would have generated much higher economic impact estimates were not considered in the final analysis. The intercept survey was implemented by the Florida Survey Research Center and targeted visitors based on a probability sampling approach of observed visitation earlier in the season. This survey produced a number relatively large differences in key parameters compared to the Internet survey. For example, 77.6 percent of intercepted visitors reported staying in paid accommodations while only 4.2 percent stayed with family or friends, which is presumably at no or lower costs. By comparison, Internet respondents had a lower incidence of paid accommodations (32.3%) and a higher incidence of staying with family or friends (15.3%). Also, intercepted visitors reported an average party size of 3.63 individuals compared to 2.87 from the Internet survey, a difference not fully accounted for by additional children who might be expected to spend less. Intercepted visitors reported an average total number of past cancelled trips to the study region of 2.17 compared to 0.95 for those in the Internet survey.
- Finally, the estimated impacts exclude specific tax impacts given that reduced tax collections are dependent on specific tax rates and nuances of the Florida tax code. These tax estimates are in development in collaboration with EDR staff.

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Appendix A: Knowledge Networks Methodology[49]

Overview

Knowledge Networks (KN) has recruited the first online research panel that is representative of the entire U.S. population. Panel members are randomly recruited through probability-based sampling, and households are provided with access to the Internet and hardware if needed.

Knowledge Networks selects households by using address-based sampling methods; formerly, KN relied on random-digit dialing (RDD) Once households are recruited for the panel, they are contacted by e-mail for survey taking or panelists visit their online member page for survey taking (instead of being contacted by phone or postal mail). This allows surveys to be fielded very quickly and economically. In addition, this approach reduces the burden placed on respondents, since e-mail notification is less intrusive than telephone calls, and most respondents find answering Web questionnaires more interesting and engaging than being questioned by a telephone interviewer. Furthermore, respondents have the freedom to choose what time of day to participate in research.

Documentation regarding *KnowledgePanel*® sampling, data collection procedures, weighting, and IRB-bearing issues are available at the below online resources.

- http://www.knowledgenetworks.com/ganp/reviewer-info.html
- http://www.knowledgenetworks.com/knpanel/index.html
- http://www.knowledgenetworks.com/ganp/irbsupport/

Panel Recruitment Methodology

When Knowledge Networks began recruiting in 1999, the company established the first online research panel (now called *KnowledgePanel*®) based on probability sampling covering both the online and offline populations in the U.S. Panel members are recruited through national random samples, originally by telephone and now almost entirely by postal mail. Households are provided with access to the Internet and hardware if needed. Unlike Internet convenience panels, also known as "opt-in" panels, that includes only individuals with Internet access who volunteer themselves for research, *KnowledgePanel*® recruitment uses dual sampling frames that includes both listed and unlisted telephone numbers, telephone and non-telephone households, and cell-phone-only households, as

[49]This appendix was provided to the investigators as part of the final field report from Knowledge Networks (KN). All references to "we" refer to KN staff and not the investigators on this project.

well as households with and without Internet access. Only persons sampled through these probability-based techniques are eligible to participate on *KnowledgePanel*®. Unless invited to do so as part of these national samples, no one on their own can volunteer to be on the panel.

RDD and ABS Sample Frames

KnowledgePanel® members today could have been recruited by either the former random digit dialing (RDD) sampling or the current address-based sampling (ABS) methodologies. In this section, the RDD-based methodology is described; the ABS methodology is described in a separate section below. To offset attrition, multiple recruitment samples are fielded evenly throughout the calendar year.

KnowledgePanel® recruitment methodology has used the quality standards established by selected RDD surveys conducted for the Federal government (such as the CDC-sponsored National Immunization Survey).

KN employed list-assisted RDD sampling techniques based on a sample frame of the U.S. residential landline telephone universe. For purposes of efficiency, KN excludes only those banks of telephone numbers (a bank consists of 100 numbers) that had fewer than two directory listings. Additionally, an oversampling was conducted within a stratum of telephone exchanges that had high concentrations of African American and Hispanic households based on Census data. Note that recruitment sampling is done without replacement, thus numbers already fielded do not get fielded again.

A telephone number for which a valid postal address can be matched occurred in about 67-70% of each sample. These address-matched cases were all mailed an advance letter informing them that they had been selected to participate in *KnowledgePanel*®. For purposes of efficiency, the unmatched numbers were most recently under-sampled at a rate of 0.75 relative to the matched numbers. Both the minority oversampling mentioned above and this under-sampling of non-address households are adjusted appropriately in the panel's weighting procedures.

Following the mailings, telephone recruitment by trained recruiters begins for all sampled telephone numbers. Telephone numbers for cases sent to recruiters were dialed for up to 90 days, with at least 14 dial attempts for cases in which no one answers the phone, and for numbers known to be associated with households. Extensive refusal conversion was also performed. The recruitment interview, about 10 minutes in length, begins with informing the household member that the household had been selected to join *KnowledgePanel*®. If the household does not have a computer and access to the Internet, the household member

is told that in return for completing a short survey weekly, the household will be provided with free monthly Internet access and a laptop computer (in the past, the household was provided with a WebTV device). All members of the household are enumerated, and some initial demographic and background information on prior computer and Internet use was collected.

Households that informed recruiters that they had a home computer and Internet access were asked to take KN surveys using their own equipment and Internet connection. Incentive points per survey, redeemable for cash, are given to these "PC" (personal computer) respondents for completing their surveys. Panel members provided with a laptop computer and free Internet access do not participate in this per-survey points-incentive program. However, all panel members do receive special incentive points for select surveys to improve response rates and/or for all longer surveys as a modest compensation for the extra burden of their time and participation.

For those panel members receiving a laptop computer, each unit is custom-configured prior to shipment with individual email accounts so that it is ready for immediate use by the household. Most households are able to install the hardware without additional assistance, although KN maintains a toll-free telephone line for technical support. The KN Call Center contacts household members who do not respond to e-mail and attempts to restore both contact and participation. PC panel members provide their own e-mail addresses, and we send their weekly survey invitations to that e-mail account.

All new panel members receive an initial survey for the dual purpose of welcoming them as new panel members and introducing them to how online survey questionnaires work. New panel members also complete a separate profile survey that collects essential demographic information such as gender, age, race, income, and education to create a personal member profile. This information can be used to determine eligibility for specific studies and is factored in for weighting purposes. Operationally, once the profile information is stored, it does not need to be re-collected as a part of each and every survey. This information is also updated annually for all panel members. Once new members have completed their profile surveys, they are designated as "active," and considered ready to be sampled for client studies.

Once a household is recruited and each household member's e-mail address is either obtained or provided, panel members are sent survey invitations linked through a personalized e-mail message (instead of by phone or postal mail). This contact method permits surveys to be fielded quickly and economically, and also facilitates longitudinal research. In addition, this approach reduces the burden placed on respondents, since e-

mail notification is less intrusive than telephone calls and allows research subjects to participate in research when it is convenient for them.

Address-Based Sampling (ABS) Methodology

When KN first started panel recruitment in 1999, the conventional opinion among survey experts was that probability-based sampling could be carried out cost effectively through the use of a national RDD samples. The RDD landline frame at the time allowed access to 96% of U.S. households. This is no longer the case. In 2009, KN introduced use of the ABS sample frame to panel recruitment to reflect the real changes in society and telephony over recent years. Those changes that have reduced the long-term scientific viability of landline RDD sampling methodology are as follows: declining respondent cooperation in telephone surveys as reflected in "do not call" lists, call screening, caller-ID devices, and answering machines; dilution of the RDD sample frame as measured by the working telephone number rate; and finally, the emergence of cell phone-only households (CPOHH) because such households are excluded from the RDD frame because they have no landline telephone.

According to the Centers for Disease Control and Prevention (January-June 2010), approximately 28.6% of all U.S. households cannot be contacted through RDD sampling—26.6% as a result of CPOHH status and 2% because they have no telephone service whatsoever. Among some age segments, the RDD non-coverage would be substantial: 40% of young adults, ages 18–24, reside in CPOHHs, 51% of those ages 25–29, and 40% of those ages 30–34.[50]

After conducting an extensive pilot project in 2008, KN made the decision to move toward address-based sample (ABS) frame in response to the growing number of cell-phone- only households that are outside the RDD frame. Before conducting the ABS pilot, we also experimented with supplementing its RDD samples with cell-phone samples. However, this approach was not cost effective—and raised a number of other operational, data quality, and liability issues (for example, calling cell phones while respondents were driving).

The key advantage of the ABS sample frame is that it allows sampling of almost all U.S. households. An estimated 97% of households are "covered" in sampling nomenclature. Regardless of household telephone status, those households can be reached and contacted through postal mail. Second, the KNABS pilot project revealed several additional advantages beyond expected improvement in recruiting adults from CPOHHs:

[50] Blumberg S.J., and J.V. 2010. "Wireless substitution: Early release of estimates from the National Health Interview Survey, January–June 2010." National Center for Health Statistics. Available at http://www.cdc.gov/nchs/nhis.htm.

- Improved sample representativeness for minority racial and ethnic groups
- Improved inclusion of lower educated and low income households
- Exclusive inclusion of the fraction of CPOHHs that have neither a landline telephone nor Internet access (approximately four to six percent of US households).

ABS involves probability-based sampling of addresses from the U.S. Postal Service's Delivery Sequence File. Randomly sampled addresses are invited to join *KnowledgePanel*® through a series of mailings and, in some cases, telephone follow-up calls to non-responders when a telephone number can be matched to the sampled address. Operationally, invited households have the option to join the panel by one of several ways:

- Completing and returning a paper form in a postage-paid envelope,
- Calling a toll-free hotline maintained by Knowledge Networks, or
- Going to a dedicated KN web site and completing an online recruitment form.

After initially accepting the invitation to join the panel, respondents are then "profiled" online by answering key demographic questions about themselves. This profile is maintained through the same procedures that were previously established for RDD-recruited panel members. Respondents not having an Internet connection are provided a laptop computer and free Internet service. Respondents sampled from the ABS frame, like those sampled from the RDD frame, are offered the same privacy terms and confidentiality protections that we have developed over the years and that have been reviewed by dozens of Institutional Review Boards.

Large-scale ABS sampling for *KnowledgePanel*® recruitment began in April 2009. As a result, sample coverage on *KnowledgePanel*® of CPOHHs, young adults, and non-whites has been increasing steadily since that time.

Because *KnowledgePanel*® members have been recruited from two different sample frames, RDD and ABS, KN implemented several technical processes to merge samples sourced from these frames. KN's approach preserves the representative structure of the overall panel for the selection of individual client study samples. An advantage of mixing ABS frame panel members in any *KnowledgePanel*® sample is a reduction in the variance of the weights. ABS-sourced samples tend to align more closely to the overall demographic distributions in the population, and thus the associated adjustment weights are somewhat more uniform and less varied. This variance reduction efficaciously attenuates the sample's design effect and confirms a real advantage for study samples drawn from *KnowledgePanel*® with its dual frame construction.

Survey Administration

For client surveys, samples are drawn at random from among active panel members. Depending on the study, eligibility criteria will be applied or in-field screening of the sample will be carried out. Sample sizes can range widely depending on the objectives and design of the study.

Once assigned to a survey, members receive a notification e-mail letting them know there is a new survey available for them to take. This email notification contains a link that sends them to the survey questionnaire. No login name or password is required. The field period depends on the client's needs and can range anywhere from a few hours to several weeks.

After three days, automatic email reminders are sent to all non-responding panel members in the sample. If email reminders do not generate a sufficient response, an automated telephone reminder call can be initiated. The usual protocol is to wait at least three to four days after the e-mail reminder before calling. To assist panel members with their survey taking, each individual has a personalized "home page" that lists all the surveys that were assigned to that member and have yet to be completed.

Knowledge Networks also operates an ongoing modest incentive program to encourage participation and create member loyalty. Members can enter special raffles or can be entered into special sweepstakes with both cash rewards and other prizes to be won.

The typical survey commitment for panel members is one survey per week or four per month with duration of 10 to 15 minutes per survey. Some client surveys exceed this time, and in the case of longer surveys, an additional incentive can be provided.

Survey Sampling from *KnowledgePanel*®

Once Panel Members are recruited and profiled, they become eligible for selection for specific client surveys. In most cases, the specific survey sample represents a simple random sample from the panel, for example, a general population survey. Customized stratified random sampling based on profile data can also be conducted as required by the study design.

The general sampling rule is to assign no more than one survey per week to members. Allowing for rare exceptions during some weeks, this limits a member's total assignments per month to four or six surveys. In certain cases, a survey sample calls for pre-screening, that is, members are drawn from a subsample of the panel (such as females, Republicans, grocery shoppers, etc.). In such cases, care is taken to ensure that all subsequent survey

samples drawn that week are selected in such a way as to result in a sample that remains representative of the panel distributions.

For the Study 1 survey (estimation of lost PUV), non-institutionalized adults age 18 and over residing in the State of Florida were sampled. For the Study 2 survey (estimation of lost RUV and economic impacts of foregone recreational trips), non-institutionalized adults age 18 and over residing in the States of Georgia, Alabama, Tennessee, Louisiana, Texas, Missouri, Mississippi, Kentucky, Arkansas, Ohio, Indiana, Illinois, and Florida were sampled. Additional screening was administered at the beginning of the Study 2 survey to obtain responses from the target population of recreational visitors.

Sample Weighting

The design for *KnowledgePanel*® recruitment begins as an equal probability sample with several enhancements incorporated to improve efficiency. Since any alteration in the selection process is a deviation from a pure equal probability sample design, statistical weighting adjustments are made to the data to offset known selection deviations. These adjustments are incorporated in the sample's *base weight*.

There are also several sources of survey error that are an inherent part of any survey process, such as non-coverage and non-response due to panel recruitment methods and to inevitable panel attrition. We address these sources of sampling and non-sampling error by using a *panel demographic post-stratification weight* as an additional adjustment.

The above weighting is done before the study sample is drawn. Once a study sample is finalized (all data collected and a final data set made), a set of *study-specific post-stratification weights* are constructed so that the study data can be adjusted for the study's sample design and for survey non-response. A description of these types of weights follows.

The Base Weight

In a *KnowledgePanel*® sample there are seven known sources of deviation from an equal probability of selection design. These are corrected in the Base Weight and are described below.

1. Under-sampling of telephone numbers unmatched to a valid mailing address**.**

   An address match is attempted on all the Random Digit Dial (RDD)-generated telephone numbers in the sample after the sample has been purged of business and institutional numbers and screened for non-working numbers. The success rate for address matching is in the 60 to 70% range. Households having telephone numbers with valid

addresses are sent an advance letter, notifying them that they will be contacted by phone to join *KnowledgePanel*®. The remaining, unmatched numbers are under-sampled as a recruitment efficiency strategy. Advance letters improve recruitment success rates. Under-sampling was suspended between July 2005 and April 2007. It was resumed in May 2007, using a sampling rate of 0.75. RDD recruitment ended in July 2009.

2. RDD selection proportional to the number of telephone landlines reaching household.

   As part of the field data collection operation, information is collected on the number of separate telephone landlines in each selected household. The probability of selecting a multiple-line household is down-weighted by the inverse of the number of landlines. RDD recruitment ended in July 2009.

3. Some minor oversampling of Chicago and Los Angeles in early pilot surveys.

   Two pilot surveys carried out in Chicago and Los Angeles when the panel was initially being built increased the relative size of the sample from these two cities. With natural attrition and growth in size, that impact is disappearing over time. It remains part of our base adjustment weighting because of a small number of extant panel members from that initial panel cohort.

4. Early oversampling the four largest states and central region states.

   At the time when the panel was first being built, survey demand in the four largest states (California, New York, Florida, and Texas) necessitated oversampling during January–October 2000. Similarly, the central region states were oversampled for a brief period of time. These now diminishing effects still remain in the panel membership and thus weighting adjustments are required for these geographic areas.

5. Under-sampling of households not covered by the MSN® TV service network.

   Certain small areas of the U.S. are not serviced by MSN®, thus the MSN®TV units distributed to non-Internet households prior to January 2009 could not be used for those recruited non-Internet households. Overall, the result is a small residual under-sample in those geographic areas which requires a minor weighting adjustment for those locations. Since January 2010, laptop computers with dial-up access are being distributed to non-Internet households thus eliminating this under-coverage component.

6. RDD oversampling of African American and Hispanic telephone exchanges.

   As of October 2001, oversampling of telephone exchanges with a higher density of minority households (specifically, African American and Hispanic) was implemented to increase panel membership for those groups. These exchanges were oversampled at approximately twice the rate of other exchanges. This oversampling is corrected in the base weight. RDD recruitment ended in July 2009.

7. Address-based sample phone match adjustment.

   Toward the end of 2008, Knowledge Networks began recruiting panel members by using an address-based sample (ABS) frame in addition to RDD recruitment. Once recruitment through the mail, including follow-up mailings to ABS non-respondents was completed, telephone recruitment was added. Non-responding ABS households where a landline telephone number could be matched to an address were subsequently called and telephone recruitment was initiated. This effort resulted in a slight overall disproportionate number of landline households being recruited in a given ABS sample. A base weight adjustment is applied to return the ABS recruitment panel members to the sample's correct national proportion of phone-match and no phone-match households.

8. ABS oversample stratification adjustment.

   In late 2009 the ABS sample began incorporating a geographic stratification design. Census blocks with high density minority communities were oversampled (Stratum 1) and the balance of the census blocks (Stratum 2) were relatively under-sampled. The definition of high density and minority community and the relative proportion between strata differed among specific ABS samples. In 2010, the two strata were redefined to target high density Hispanic areas in Stratum 1 and all else in Stratum 2. In 2011, pre-identified ancillary information and not census block data were used to construct and target four strata as follows: Hispanic ages 18-24, Non-Hispanic ages 18-24, Hispanic ages 25+ and Non-Hispanic ages 25+. An appropriate base weight adjustment is applied to each relevant sample to correct for these stratified designs. Also in 2011, a separate sample targeting only persons ages 18-24 was fielded across the year also using predictive ancillary information. Combined with the four-stratum sample, the base weight adjustment compensates for cases from this unique young adult over-sample.

The Spanish Language Base Weight (Study 1 only)

From 2008 through 2010, as an augmentation to *KnowledgePanel*®, Spanish language-specific panel members were recruited through a geographically targeted dual frame sample that was screened for Spanish-language dominant households. Generally, these are

households in which members speak Spanish and completed the recruitment interview in Spanish. Eleven geographic regions covering approximately 95% of the national Latino population was screened. Each region had both high and low density Hispanic population areas. High density areas were screened by using RDD methods, whereas low density areas were screened by using Hispanic surname listed samples. Two adjustments are incorporated in the Spanish language base weight.

1. Selection proportional to the number of telephone landlines reaching the household.

   As part of the field data collection operation, information was collected on the number of separate telephone landlines in each eligible (Spanish-speaking) household. A multiple- line household's selection probability is down-weighted by the inverse of its number of landlines.

2. Geographic frame balancing for RDD and listed surname samples.

   The recruitment sample frame has a given proportional distribution across 11 regions, each consisting of both a high and low Hispanic population density area (ranging from 0.3% density to 13.9%; average = 4.6%). This adjustment factor returns the recruited households by area to their correct relative proportion across the 22 geographic density areas.

In 2011, the above telephone recruitment method was replaced with a pure probability-based RDD sample targeting telephone exchanges that covered Hispanic population areas of 45% or greater density based on census block data. The Spanish-language base weight compensates for this RDD sample approach when combined with other Hispanic panel.

The Panel Demographic Post-stratification Weight

To reduce the effects of any non-response and non-coverage bias in the overall panel membership before the study sample is drawn, a post-stratification adjustment is applied based on demographic distributions from the most recent (April 2011) data from the Current Population Survey (CPS). Spanish language usage, however, is based on the 2007 Pew Hispanic Center Survey (most recently available published data at this time). Language usage adjustments allow for the correct proportional fitting of Spanish-speaking members relative to other English-speaking Hispanic and non-Hispanic panel members within Census regions. The benchmark distributions for Internet access among the U.S. population of adults are obtained from the most recent special CPS supplemental survey measuring Internet access (October 2009).

The overall panel post-stratification variables include:

- Gender (Male/Female)
- Age (18–29, 30–44, 45–59, and 60+)
- Race/Hispanic ethnicity (White/Non-Hispanic, Black/Non-Hispanic, Other/Non-Hispanic, 2+ Races/Non-Hispanic, Hispanic)
- Education (Less than High School, High School, Some College, Bachelor and beyond)
- Census Region (Northeast, Midwest, South, West)
- Household income (under $10k, $10K to <$25k, $25K to <$50k, $50K to <$75k, $75K to <$100k, $100K+)
- Home ownership status (Own, Rent/Other)
- Metropolitan Area (Yes, No)
- Internet Access (Yes, No)
- Primary Language by Census Region (Non-Hispanic, Hispanic English Proficient, Hispanic Bilingual, Hispanic Spanish Proficient)

The Panel Demographic Post-stratification weight is applied prior to a probability proportional to size (PPS) selection of a study sample from *KnowledgePanel*®. This weight is designed for sample selection purposes.

Study-Specific Post-Stratification Weights

Once the sample has been selected and fielded, and all the study data are collected and made final, a post-stratification process is used to adjust for any survey non-response as well as any non-coverage or under- and over-sampling resulting from the study-specific sample design.

For Study 1 (lost PUV), demographic and geographic distributions for the non-institutionalized, civilian population ages 18+ in Florida from the most recent CPS are used as benchmarks in this adjustment. All KN panelists were first weighted to the CPS benchmarks. KN and off-panel respondents were then combined and weighted to the CPS benchmarks by adding KN early adopter variables. The Spanish language proficiency distributions are from the most currently available Pew Hispanic Center Survey (2007). The following benchmark distributions are utilized for this post-stratification adjustment:

- Gender (Male/Female)
- Age (18–29, 30–44, 45–59, and 60+)
- Race/Hispanic ethnicity (White/Non-Hispanic, Black/Non-Hispanic, Other/Non-Hispanic, 2+ Races/Non-Hispanic, Hispanic)
- Education (Less than High School, High School, Some College, Bachelors and higher)
- Metropolitan Area (Yes, No)

- Internet Access (Yes, No)
- Primary Language (Non-Hispanic, Hispanic English Proficient, Hispanic Bilingual, Hispanic Spanish Proficient)
- KN Early Adopter Variables

For Study 2 (foregone RUV and economic impact of foregone recreational trips), demographic and geographic distributions for the non-institutionalized, civilian population ages 18+ in the sampled 13 states from the most recent CPS are used as benchmarks in this adjustment. All KN respondents were first weighted to these benchmarks. Weights were trimmed and scaled to all eligible KN respondents. KN and off-panel eligible respondents were then combined and weighted to the benchmarks of all eligible KN respondents by adding KN early adopter variables. The following benchmark distributions are utilized for this post-stratification adjustment:

- Gender (Male/Female)
- Age (18–29, 30–44, 45–59, and 60+)
- Race/Hispanic ethnicity (White/Non-Hispanic, Black/Non-Hispanic, Other/Non-Hispanic, 2+ Races/Non-Hispanic, Hispanic)
- Education (Less than High School, High School, Some College, Bachelors and higher)
- State (AL, AR, FL, GA, IL, IN, KY, LA, MO, MS, OH, TN, TX)
- Metropolitan Area (Yes, No)
- Internet Access (Yes, No)
- KN Early Adopter Variables

For each survey, comparable distributions are calculated by using all completed cases from the field data. Since study sample sizes are typically too small to accommodate a complete cross-tabulation of all the survey variables with the benchmark variables, a raking procedure is used for the post-stratification weighting adjustment. Using the base weight as the starting weight, this procedure adjusts the sample data back to the selected benchmark proportions. Through an iterative convergence process, the weighted sample data are optimally fitted to the marginal distributions.

After this final post-stratification adjustment, the distribution of the calculated weights are examined to identify and, if necessary, trim outliers at the extreme upper and lower tails of the weight distribution. The post-stratified and trimmed weights are then scaled to the sum of the total sample size of all eligible respondents.

Supplemental Data Provided by Knowledge Networks

Variable name	Characteristics	Description
XPRIMELAN	Primary language proficiency (Survey 1 only)	1 = English proficient 2 = Bilingual (English and Spanish) 3 = Spanish proficient 4 = Hispanics who have missing data; re-ask 5 = Non-Hispanics, not asked
XSPANISH	Survey language (Survey 1 only)	1 = English 2 = Spanish
DOV_GROUP	Qualified resp. by type (Survey 2 only)	1 = Past visitors 2 = Cancellers
CASEID		Case identification number
WEIGHT		Final post-stratification weights for KN and Off-panel (Opt-in) eligible completes
DOV_PANEL		Panel type (1 = KN, 2 = Opt-in)
TM_START		Date and time interview started
TM_FINISH		Date and time interview finished
DURATION		Duration of interview in minutes
PPAGE	Age	Actual age in years
PPAGECAT	Age, 7 categories	1 = 18-24; 2 = 25-34; 3 = 35-44; 4 = 45-54; 5 = 55-64; 6 = 65-74; 7 = 75+
PPAGECT4	Age, 4 categories	1 = 18-29; 2 = 30-44; 3 = 45-59; 4 = 60+
PPEDUC	Education (14 categories)	1 = No formal education 2 = 1st, 2nd, 3rd, or 4th grade 3 = 5th or 6th grade 4 = 7th or 8th grade 5 = 9th grade 6 = 10th grade 7 = 11th grade 8 = 12th grade NO DIPLOMA 9 = HIGH SCHOOL GRADUATE - high school DIPLOMA or the equivalent GED) 10 = Some college, no degree 11 = Associate degree 12 = Bachelor's degree 13 = Master's degree 14 = Professional or Doctorate degree
PPEDUCAT	Education (4 categories)	1 = Less than high school 2 = High school 3 = Some college 4 = Bachelor's degree or higher

Variable name	Characteristics	Description
PPETHM	Race/Ethnicity	1 = White, Non-Hispanic 2 = Black, Non-Hispanic 3 = Other, Non-Hispanic 4 = Hispanic 5 = 2+ races, Non-Hispanic
PPGENDER	Gender	1 = Male
		2 = Female
PPHHHEAD	Household Head	0 = No 1 = Yes
PPHHSIZE	Household Size (from Recruitment)	Total number of members in household
PPHOUSE	Housing Type	1 = A one-family house detached from any other house 2 = A one-family house attached to one or more houses 3 = A building with 2 or more apartments 4 = A mobile home 5 = Boat, RV, van, etc.
PPINCIMP	Household Income (profile and imputed)	1 = Less than $5,000; 2 = $5,000 to $7,499 3 = $7,500 to $9,999; 4 = "$10,000 to $12,499 5 = $12,500 to $14,999; 6 = "$15,000 to $19,999 7 = $20,000 to $24,999; 8 = $25,000 to $29,999 9 = $30,000 to $34,999; 10 = $35,000 to $39,999 11 = $40,000 to $49,999; 12 = $50,000 to $59,999 13 = $60,000 to $74,999; 14 = $75,000 to $84,999 15 = $85,000 to $99,999; 16 = $100,000 to $124,999, 17 = $125,000 to $149,999; 18 = $150,000-$174,999; 19 = $175,000 or more
PPMARIT	Marital Status	1 = Married 2 = Widowed 3 = Divorced 4 = Separated 5 = Never married 6 = Living with partner
PPMSACAT	MSA Status	0 = Non-Metro 1 = Metro (as defined US OMB Core-Based Statistical Area)
PPNET	Internet access	0 = No 1 = Yes
PPRENT	Ownership Status of Living Quarters	1 = Owned or being bought by you or someone in your household

Variable name	Characteristics	Description
		2 = Rented for cash 3 = Occupied without payment of cash rent
PPREG4	Region 4 (U.S. Census)	1 = Northeast 2 = Midwest 3 = South 4 = West
PPREG9	Region 9 (U.S. Census)	1 = New England 2 = Mid-Atlantic 3 = East-North Central 4 = West-North Central 5 = South Atlantic 6 = East-South Central 7 = West-South Central 8 = Mountain 9 = Pacific
PPSTATEN	State	31 = OH, 32 = IN, 33 = IL, 43 = MO, 58 = GA, 59 = FL, 61 = KY, 62 = TN, 63 = AL, 64 = MS, 71 = AR, 72 = LA, 74 = TX
PPTO1 PPT25 PPT612 PPT1317 PPT18OV	Total Number of Household Members by Age	Number of children less than 2 years Number of children 2-5 years Number of children 6-12 years Number of children 13-17 years Number of adults 18 years and over
PPWORK	Current Employment Status	1 = Working - as a paid employee 2 = Working - self-employed 3 = Not working - on temporary layoff from a job 4 = Not working - looking for work 5 = Not working - retired 6 = Not working - disabled 7 = Not working - other
ZIPCODE	5-digit USPS zip code	Zip code of current permanent residence

Appendix B: Study 1 Questionnaire and Coding

Questionnaire Coding

The University of Florida has been asked to conduct a nationwide survey of opinions regarding new federal programs.

As with all Knowledge Networks surveys, your response to any individual question on the survey is voluntary. You have the right to withdraw at any time by exiting the survey. You will not be individually identified and your responses will be used for statistical purposes only. This is a longer survey, requiring approximately 25 minutes of your time, and there are no expected risks to you from participating.

[if panel=1: If you have questions about your rights as a participant in this survey, you may contact Knowledge Networks at 800-782-6899 and you will be provided with contact information for the study investigators.]

If you agree to participate in this survey, click 'Next' below to continue.

[CREATE DOV_PANEL: 1 = KN 2 = OPT-IN]

SECTION A. BACKGROUND

A_1_. Below is a list of issues related to the environment that the federal government spends tax money on. We would like to know whether you support or oppose continued funding on the programs that address each issue. **[RADIO BUTTONS, 1-6 ON EACH]**

Very opposed	Somewhat opposed	Neither opposed nor supportive	Somewhat supportive	Very supportive	Not sure
1	2	3	4	5	6

A. Improving water quality in lakes, rivers, and coastal areas
B. Providing facilities, maintenance and staff at national parks
C. Protecting the coastal environment from oil spills
D. Investigating alternative sources of energy
E. Providing emergency services after natural disasters
F. Protecting threatened and endangered species

These are just a few of the issues related to the environment that the federal government spends tax money on. Proposals are sometimes made for new programs; but the federal government does not want to start any new programs unless taxpayers support them and their cost.

One way for the federal government to determine the level of support is to conduct a survey with people like you. Your views are useful to decision makers in deciding what, if anything, to do about a particular issue.

A_2. Have you ever been asked for your opinion of any federal program?

Yes 1
No.....2
Not Sure.....3

Map 1 below shows the five U.S. states with coastal beaches and wetlands in the Gulf of Mexico.

Map 1
Coastal Areas in the U.S. Gulf of Mexico

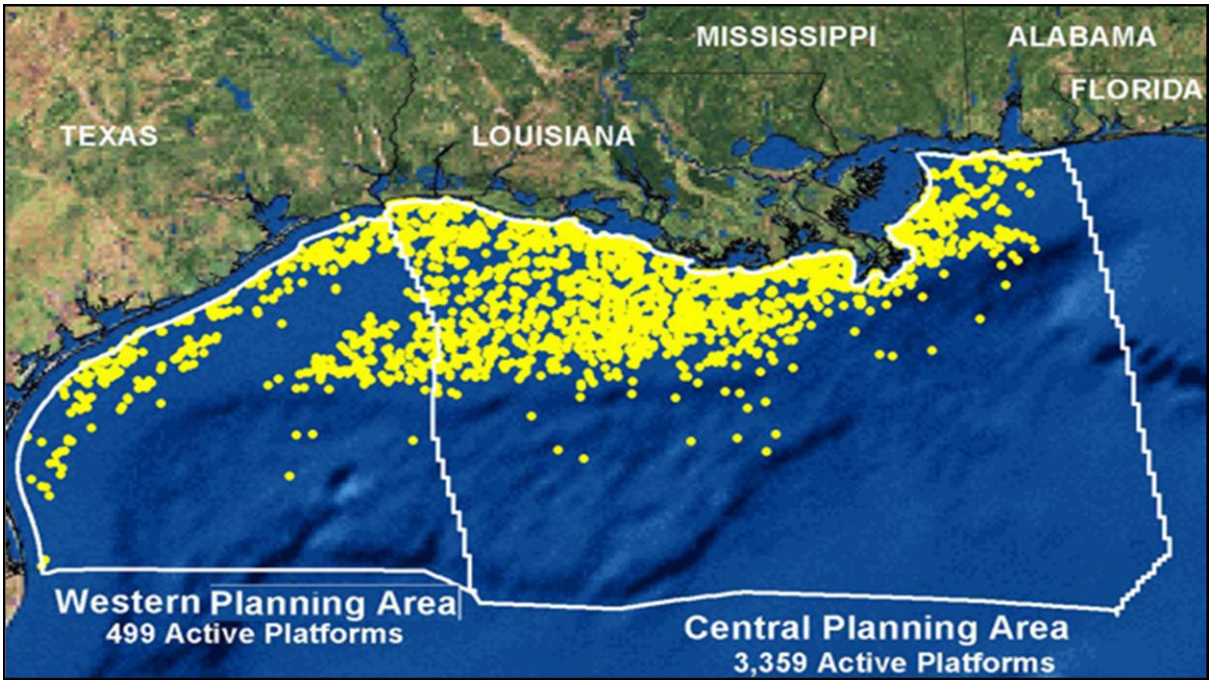
A_2b. How much do you know about the Gulf of Mexico?

A lot 1
Some 2
Not much at all 3
Not sure.....4

Map 2 below shows the U.S. oil drilling regions in the Gulf of Mexico. Each yellow dot represents an active oil rig/well/platform. The white lines indicate the boundary of the two U.S. leasing areas. Dozens of domestic and foreign companies currently hold active oil drilling leases (Source: U.S. Energy Information Administration).

Map 2

Active oil wells (yellow dots) and federal drilling areas (white boundaries) in the U.S. Gulf of Mexico



At this time, no drilling occurs directly off the Florida coast. The nearest wells are located off of Alabama and Mississippi. Recently, drilling has moved further offshore into deeper waters as the technology has advanced.

A_4. Is the number of wells shown in the map fewer, about the same, or more than what you expected?

A lot more 1
A little more 2
About the same 3
A little fewer 4
A lot fewer 5
Not sure 6

Now you will be presented with some information about the 2010 Gulf of Mexico oil spill. The spill began April 20, 2010 when the Deepwater Horizon oil rig was destroyed in a fire while drilling.

The drilling site was about 50 miles southeast of the Mississippi River delta off the coast of Louisiana. The Gulf of Mexico is about 5,000 feet (1 mile) deep at the drilling site. The sinking of the oil rig caused oil to spill out of the pipe that connects the well at the ocean floor to the drilling rig.

The spill lasted until September 19 of 2010 when the well was permanently capped. In all, about 205 million gallons of oil spilled into the Gulf of Mexico making it the largest oil spill in U.S. history. For comparison, this spill was 18 times larger than the 1989 Exxon Valdez oil spill in Alaska.

A_5. Before taking this survey, how much did you know about the 2010 Gulf oil spill?

I knew a lot.....1
I knew a little.....2
I knew nothing at all.....3
Not sure.....4

In this survey, you are going to be asked about a program to reduce environmental impacts from another large oil spill in the Gulf of Mexico.

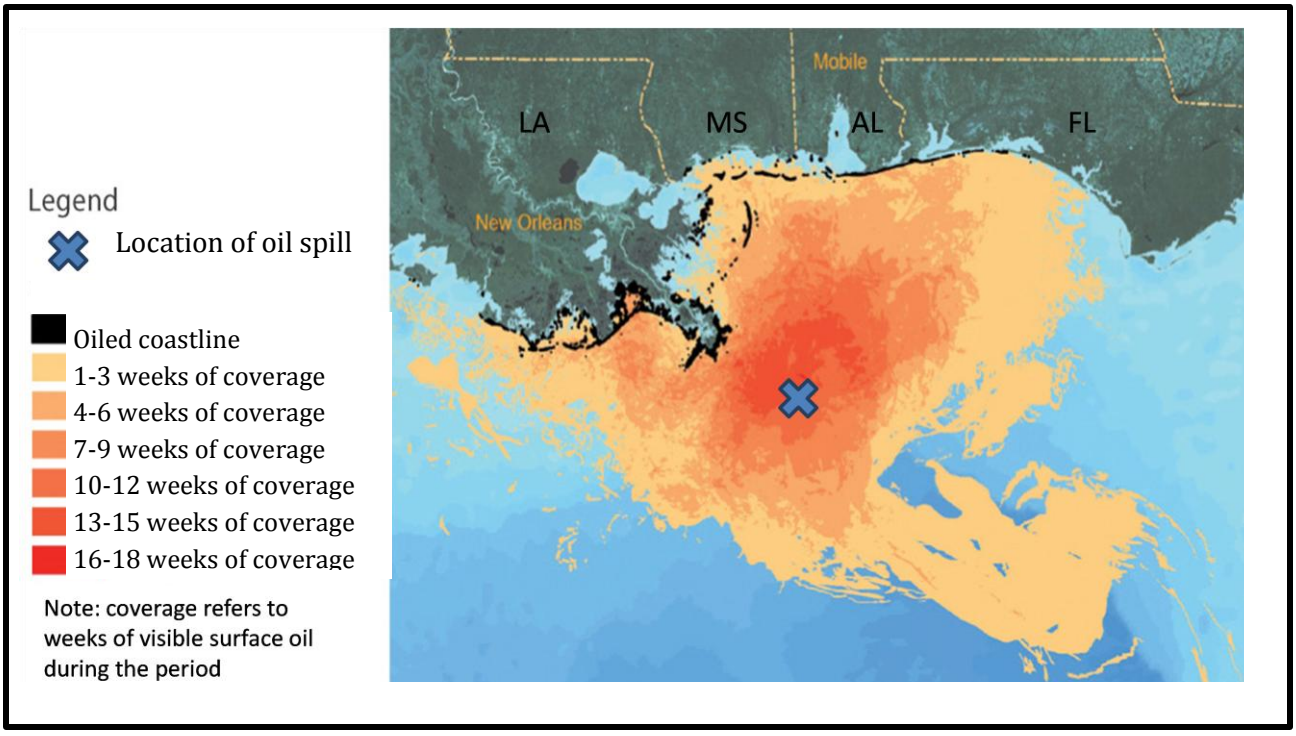
This survey effort is focused only on the <u>environmental</u> impacts. We have other efforts underway to estimate other human impacts that may have resulted from the oil spill - such as recreation, tourism, jobs and human health. While all of these may be very important to you, *the purpose of this survey is to determine only how much people care (if at all) about how the environment was affected by the oil spill*.

Because we have other research efforts underway, please try to focus only on the <u>environmental</u> impacts from oil spills in your responses to the questions that follow.

Map 3 below shows the location of the well that was destroyed by the fire. The orange shading shows where surface oil was detected after the spill. The darker the shading the longer the oil was present in that location. The areas of the coastline that are black represent the approximately 1,050 miles of Gulf of Mexico coastline where oil made landfall (Source: http://www.gulfspillrestoration.noaa.gov/).

MAP 3

U.S. Gulf of Mexico oil spill that began April 20, 2010



In addition to the surface oil shown on the map, large pockets of subsurface oil were detected and shown to be a result of the 2010 Gulf oil spill.

Due to the lack of an ongoing monitoring system, the large size of the area, and the changing wind patterns and ocean currents, there is no way to know with a reasonable degree of certainty how much oil remains. The use of dispersants and the natural ability of the oil to break down also complicate any attempt to measure the amount of remaining oil.

A_6. How concerned are you about the environmental impacts of the 2010 Gulf oil spill?

Very concerned 1
Somewhat concerned 2
Neither concerned nor unconcerned 3
Somewhat unconcerned 4
Very unconcerned 5
Not sure 6

Marine birds and sea turtles were affected by the oil spill because they live and feed in the surface areas where floating oil collects. Marine mammals such as dolphins and whales were also affected because they must come to the surface to breath.

A_7_. Which aspects of the Gulf environment are important to you? Please check all that apply. **[1 = YES, CHECKED ON EACH]**

A. Birds
B. Sea turtles
C. Marine mammals
D. Ecosystem
E. Other
F. Not concerned with any of these

Figure A-1 below shows the three main bird species that were most affected by the 2010 Gulf oil spill. While many birds were able to relocate to avoid contact with oil, some were temporarily oiled and others died from the oil.

Figure A-1
Main bird species affected by the 2010 Gulf oil spill

Laughing Gull

(Not a threatened or endangered species)

Brown Pelican

(Removed from the endangered species list in 2009)

Northern Gannet

(Not a threatened or endangered species)

Click here **[SHOW POP-UP-THR DESCRIPTION]** for more information on "threatened" or "endangered" species.

[POP-UP-THR DESCRIPTION]:

In simple terms, "endangered" species are at the brink of extinction now. "Threatened" species are likely to be at the brink in the near future. The U.S. Fish and Wildlife Service maintains the listing of these species and recovery plans for each under the Endangered Species Act (ESA).

A_8_1. Have you ever seen any of these birds in person?

Yes 1
No.....2
Not Sure.....3

Figure A-2 below shows three species of sea turtles that were most affected by the 2010 Gulf oil spill. While many sea turtles were able to relocate to avoid contact with oil, some were temporarily oiled and others died from the oil.

Figure A-2
Main sea turtle species affected by the 2010 Gulf oil spill

Green
(endangered species)

Loggerhead
(threatened species)

Kemp's Ridley
(endangered species)

Click here **[SHOW POP-UP-THR DESCRIPTION]** for more information on "threatened" or "endangered" species.

A_8_2. Have you ever seen any of these sea turtles in person?

Yes 1
No.....2
Not Sure.....3

Figure A-3 below shows three marine mammal species (of 28 protected in the Gulf) that were affected by the 2010 Gulf oil spill. While many animals were able to relocate to avoid contact with oil, some were temporarily oiled and others died from the oil.

Figure A-3

Marine mammal species affected by the 2010 Gulf oil spill

Bottlenose Dolphin
(Not a threatened or endangered species)

Spinner Dolphin
(Not a threatened or endangered species)

Sperm Whale
(Endangered species)

Click here **[SHOW POP-UP-PRO DESCRIPTION]** for more information on "protected" species.

Click here **[SHOW POP-UP-THR DESCRIPTION]** for more information on "threatened" or "endangered" species.

[POP-UP-PRO DESCRIPTION]:

"Protected" species include all marine mammals. The Marine Mammal Protection Act prohibits the "take" of all of marine mammal species in U.S. waters and by U.S. citizens on the high seas. The National Oceanic and Atmospheric Administration's (NOAA's) Office of Protected Resources works to conserve, protect, and recover these species.

A_8_3. Have you ever seen any of these marine mammals in person?

Yes 1
No.....2
Not Sure.....3

Figure A-4 below shows the 2010 Gulf oil spill's effect on birds. The numbers were obtained from the Gulf of Mexico Restoration Program that was created after the 2010 Gulf oil spill. It is a federal government program that sought to recover all noticeable distressed or dead animals and these numbers are for collected birds that were analyzed by April 14, 2011. Please note that not all oiled animals were killed, some were cleaned and saved. Also

some of the dead animals collected probably died due to reasons other than the oil spill (Source: http://www.restorethegulf.gov/).

Figure A-4
Birds collected during the 2010 Gulf oil spill

Laughing Gull
(2,634 dead)

Brown Pelican
(556 dead)

Northern Gannet
(341 dead)

Note: All species of collected birds totaled 6,147 dead and 4,389 oiled

A_9_1. What is your level of concern over these affected birds?

Very concerned 1
Somewhat concerned 2
Neither concerned nor unconcerned 3
Somewhat unconcerned 4
Very unconcerned 5
Not sure 6

Figure A-5 below shows the 2010 Gulf oil spill's effect on sea turtles. The numbers are also from the Gulf of Mexico Restoration Program. These numbers are for collected sea turtles that were analyzed by April 12, 2011. Please note that not all oiled animals were killed, some were cleaned and saved. Also some of the dead animals collected probably died due to reasons other than the oil spill. For comparison, less than 50 animals are collected dead in a typical year (Source: http://www.restorethegulf.gov/).

Figure A-5
Sea turtles collected during the 2010 Gulf oil spill cleanup

Green
(29 dead)

Loggerhead
(67 dead)

Kemp's Ridley
(481 dead)

Note: All species of collected sea turtles totaled 613 dead and 474 oiled

A_9_2. What is your level of concern over these affected sea turtles?

Very concerned 1
Somewhat concerned 2
Neither concerned nor unconcerned 3
Somewhat unconcerned 4
Very unconcerned 5
Not sure 6

Figure A-6 below shows the 2010 Gulf oil spill's effect on marine mammals. The numbers shown are also from the Gulf of Mexico Restoration Program. These numbers are for collected marine mammals that were analyzed by April 12, 2011. Please note that not all oiled animals were killed, some were cleaned and saved. Also some of the dead animals collected probably died due to reasons other than the oil spill.

In total there are 28 species of marine mammals in the Gulf of Mexico. All of these species are protected under the Marine Mammal Protection Act, including six species of whales that are listed under the Endangered Species Act. Only one whale species, the sperm whale, maintains a resident population in the Gulf (Source: http://www.restorethegulf.gov/).

Figure A-6
Marine mammals collected during the 2010 Gulf oil spill cleanup

Bottlenose Dolphin
(142 dead)

Spinner Dolphin
(3 dead)

Sperm Whale
(2 dead)

Note: All species of collected marine mammals totaled 157 dead and 12 oiled

A_9_3. What is your level of concern over these affected marine mammals?

Very concerned 1
Somewhat concerned 2
Neither concerned nor unconcerned 3
Somewhat unconcerned 4
Very unconcerned 5
Not sure 6

The actual number of animals affected by the 2010 Gulf oil spill is probably higher than what was reported in these figures because not all animals injured or killed due to the oil were recovered. Also, while adult animals might be able to avoid oil, animals that are young and continuing to develop can be hurt or killed by oil.

In addition to the information reported in the figures, two species of fish in the Gulf of Mexico are also listed as threatened or endangered, the Gulf sturgeon and smalltooth sawfish. Another 13 species of fish are considered "species of concern."

This number of fish species is small in comparison to the 42 species that the National Marine Fisheries Service manages in the Gulf of Mexico. In total there are over 200 species of fish, sharks and rays that are common in the Gulf.

Although long-term effects of the 2010 Gulf oil spill are not yet known, past experiences with oil spills around the world provide some insights. For example, with the Exxon Valdez

spill, 37,000 dead birds were recovered but scientists later estimated the death toll between 100,000 and 300,000, or between 2 and 8 times higher (Source: Immediate Impact of the *Exxon Valdez* oil Spill on Marine Birds, Piatt et al., 1990). Also, some fish populations negatively affected by the Exxon Valdez oil spill did not start to decline until four to six years after the spill.

A_10. How much of this information would you say you already knew?

None of it 1
Some of it 2
Most of it 3
All of it.....4
Not sure.....5

A_11. Do you think these facts under- or over-estimate the environmental impacts that have been experienced so far? I believe the facts presented are…

Under-estimates (too low) 1
Accurate estimates (just about right) 2
Over-estimates (too high) 3
Not sure.....4

SECTION B. PROPOSED PROGRAM

If Americans think it is worthwhile, a new program could reduce the environmental impacts of another large oil spill in the Gulf of Mexico. We are going to describe one of these programs to you. You are then going to be asked for your opinions. The program you are being asked to evaluate would do two things:

- If another large oil spill does occur in the Gulf of Mexico, it would quickly stop the spill and prevent the oil from spreading and causing additional harm to the environment and overall ecosystem (no dispersants would be used).

- It would continuously detect oil on both the surface and subsurface to help target cleanup efforts and measure the amount and movement of spilled oil.

B_1. In general, do you think such a program is a good or bad idea?

It's a very good idea.....1
It's a somewhat good idea.....2
Neither good nor bad idea 3
It's a somewhat bad idea 4
It's a very bad idea 5
Not Sure.....6

[IF B1=5]:

Even though you do not think this proposed program is a good idea, we are still interested in your answers to our questions as the program is further described.

Here's how the program would work:

There would be five U.S. Coast Guard ships specially designed to quickly stop oil spills and clean up any spilled oil in the Gulf of Mexico. The ships would carry submersibles and deep sea robots designed to deal with deepwater oil spills and highly trained crews to operate the equipment. The equipment would be similar to what was used to stop the 2010 Gulf oil spill but would be updated based on what was learned from that spill; and, unlike with the response to the 2010 Gulf oil spill, would be operated by personnel specifically trained to use the equipment.

The ships would also carry booms and skimming equipment to help clean up any spilled oil (no dispersants would be used). Four ships would be permanently stationed in the active oil drilling region of the northern Gulf. The remaining ship would be rotated in to allow for routine maintenance. At least one ship would be able to reach any oil spill within 6 hours.

Figure B-1 below shows the type of Coast Guard ship that would be used in the program:

Figure B-1
U.S. Coast Guard Cutter "High Endurance"

B_2. How familiar are you with the U.S. Coast Guard and its mission?

Not at all familiar 1
Somewhat familiar 2
Very familiar 3
Not sure.....4

The ships would also deploy oil detection equipment that would be placed every 20 miles throughout the U.S. oil drilling region in the Gulf. Figure B-2 below shows the two main types of equipment that would be used. The equipment would be able to detect oil below the surface of the water and would help target cleanup efforts. The equipment would also provide information both before and after a spill, allowing for an accurate measurement of oil spilled.

Figure B-2

Two types of samplers used for monitoring oil

Anchored Sampler

Once anchored, the device moves between the sea floor and a float near the surface sending information to satellites.

Mobile Sampler

This sampler can be deployed anywhere. It can hold 12 containers that are fixed around a cylinder. The containers capture water samples for onboard analysis.

Lastly, the new program would identify the U.S. Coast Guard as the lead agency in addressing oil spill monitoring and clean up in the Gulf of Mexico. The designation would help to reduce the confusion and delay that followed the 2010 Gulf oil spill.

This program would not reduce the chances of another oil spill from any one rig, however, it would reduce the amount of oil spilled and the environmental impacts should another spill occur.

B_3. Generally speaking, how much confidence do you have in the U.S. Coast Guard?

Very confident.....1
Somewhat confident.....2
Neither confident nor unconfident.....3
Somewhat unconfident.....4
Very unconfident.....5
Not sure.....6

[DOV: X% = RANDOM SELECTION OF 20%, 45%, 70%, OR 90%]

The scientists that developed the program just described estimate that it would significantly reduce the environmental impacts of another large spill in the Gulf of Mexico. Figure B-3 below reviews some of the environmental impacts observed after the 2010 Gulf oil spill and what scientists think the impacts would have been if this program had been active at the time.

[CREATE DOV_X_PERCENT: CODE 1-4 FOR 20%-90%, RESPECTIVELY]

[RANDOMLY ASSIGN RESPONDENTS TO ONE OF THE THREE VERSIONS, USE TABLE BELOW FOR THE ENVIRONMENTAL MEASURE IN FIGURE B-3]

	ENVIRONMENTAL BENEFITS OF PROGRAM			
ENVIRONMENTAL MEASURE	X%=20%	X%=45%	X%=70%	X%=90%
SHORELINE [A]	210	472	735	945
BIRDS [B]	1,229	2,766	4,302	5,532
SEA TURTLES [C]	122	275	429	552
MAMMALS [D]	30	69	107	139

Figure B-3
Environmental impacts with and without proposed program

Impacts observed following the 2010 Gulf oil spill without the program:

- Oiled coastal areas: 1,050 miles
- Animals killed: At least 6,147 birds, at least 613 sea turtles, at least 154 marine mammals

Estimated impacts of another similar size Gulf oil spill **with the proposed program** would be **[X%]** lower, such that**:**

- **[A]** miles of shoreline would not have been oiled
- Animals saved: **[B]** birds, **[C]** sea turtles, **[D]** marine mammals

If this program would have been active at the time of the 2010 Gulf oil spill, scientists estimate that oil spill impacts would have been reduced by about **[X%]** on the environment due to thorough detection, speed of coordinated response and availability of needed equipment.

Although the impacts on the main animal species shown here would fall by about **[X%]**, the number of most animals it would protect is small compared to their total numbers in the Gulf of Mexico.

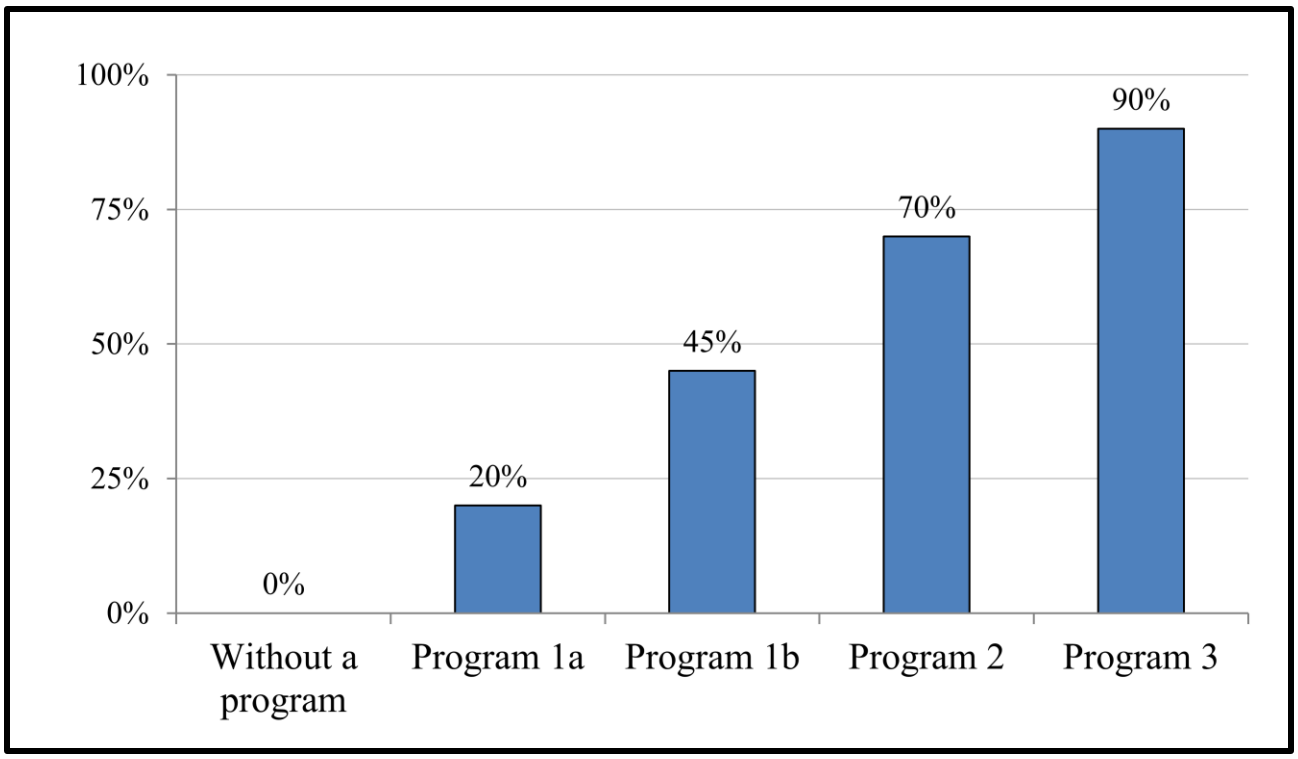
B_4. How important do you think it is to avoid **[X%]** of the environmental impacts of another large oil spill in the Gulf of Mexico?

Very important 1
Somewhat important 2
Neither important nor unimportant 3
Somewhat unimportant 4
Very unimportant 5
Not sure 6

The federal government is considering a range of programs to reduce the impacts of another large oil spill in the Gulf of Mexico. The programs differ in the expected reductions in environmental impacts and the cost. The differences in these programs are shown in Figure B-4 below. You are being asked to evaluate the program that is expected to reduce impacts by **[X%]**.

Figure B-4

Comparison of the estimated <u>reductions</u> in shoreline miles oiled and wildlife deaths under different programs



B_5. Please indicate your disagreement or agreement with the following statement: "I understand all of the information presented to me on the proposed program."

Strongly agree.....1
Somewhat agree.....2
Neither disagree nor agree.....3
Somewhat disagree.....4
Strongly disagree.....5
Not sure.....6

The U.S. Oil Pollution Act (OPA) of 1990 requires companies that are found negligent in a spill to pay for all cleanup and restoration activities; that would not change under this program. Responsible parties would still pay for cleanup and restoration.

Under the OPA, increasing oil lease fees by a reasonable amount on all companies operating in the Gulf is a quick and guaranteed way to cover the ongoing maintenance costs of this program.

Under the OPA, oil companies cannot be forced to pay for purchasing equipment they do not own*, such as the new ships that will be owned by the U.S. Coast Guard.*

With these constraints, here are the details on how the program would be funded:

- The initial costs of the new monitoring equipment and the five ships and their clean up equipment would be shared by all federal income taxpayers in the U.S.
- Your cost would be a one-time federal income tax payment in 2013 if a vote passes in the November 2012 general election.
- All federal income tax filers would be assessed the same mandatory one-time fee.
- Oil companies operating in the Gulf would be required to pay for the ongoing operating costs through an increased lease fee payable directly to the U.S. Coast Guard.

Note: As outlined above, the initial costs of purchasing the equipment cannot be funded by increased lease fees on oil companies due to legal restrictions on use of these funds under the OPA, but the fees can be raised immediately and the funds can be used to fund the ongoing operating costs.

B_6. Does this program seem like a reasonable way to reduce damages from another large oil spill?

Yes, it is very reasonable 1
Yes, it is somewhat reasonable 2
Neither reasonable or unreasonable 3
No, it is somewhat unreasonable 4
No, it is very unreasonable 5
Not Sure.....6

[If answer "No, it's very unreasonable," send to "Oppose text #2" below on separate page, then continue on.]

[IF B6=5]:

Even though you do not think the proposed program is reasonable, we are still interested in your answers to our questions as the program is further described.

C. A VOTE ON THE PROGRAM

At this point we would like you to consider how you would vote on this program. We know there are valid reasons to vote both for or to vote against the program. Figure C-1 below provides some of these reasons.

Figure C-1

Some reasons for deciding how to vote on the program

Reasons for the program:	Reasons against the program:
• Reduces the risk of losing endangered species.	• Most species are not in danger of going extinct.
• Prevents the deaths of numerous wildlife species including birds, sea turtles and marine mammals.	• Another large oil spill won't happen because companies will voluntarily improve.
• Protects the marine habitat and ecosystem for future generations.	• The program would not be as effective as described.
• Prevent environmental impacts that are potentially irreversible.	• The U.S. Coast Guard is not trustworthy.
• Even if regulations are improved they can't prevent another spill.	• Regulations on drilling will change and be effective.
• It is the right thing to do.	• The cost may be too high.
• The precaution is worth the cost to me	• My money is better spent on other things.

C_1. Given the information presented so far, are any of these reasons your reasons for how you feel about this program?

Yes 1
No.....2
Not Sure.....3

[PLEASE SEE END OF FILE FOR THE POP-UP DESCRIPTIONS]

Sometimes when people are asked to evaluate a proposed program like this one, it is easy for them to say they support a project either because they are not being asked to pay at the same time, or they don't think they will have to pay based on their response. However, we want you to only respond with what you actually think you would do given the estimated cost to your household.

To review a brief summary of the program, its effects, and funding click here. **[POP-UP #1]**
To review the program description click here. **[POP-UP #2]**
To review the estimated effects of the program click here. **[POP-UP #3]**
To review reasons people might vote for or against the program click here. **[POP-UP #4]**

Lastly, also consider your personal income and current payment obligations, including any recent or planned contributions to other environmental causes. Also remember that the cost of the program could result in your household paying instead of receiving a refund, your household paying more taxes or your household receiving a lower refund.

There is no right or wrong answer.

[DOV: $Z = RANDOM SELECTION OF $10, $45, $85, $135, $185, $235, $285, $385]

[CREATE DOV_Z_DOLLAR: CODED 1-8 FOR $10-$385, RESPECTIVELY]

C_2. If an election were being held today, would you vote for, or would you vote against the funding of a U.S. Coast Guard program to reduce environmental impacts of another large Gulf oil spill by **[X%]** if a one-time payment of **[$Z]** would be added to your household's federal income tax?

Note: The funds raised from this one-time assessment would be transferred, by law, directly to the U.S. Coast Guard in the same manner as the additional lease fees charged to the oil companies described earlier.

For ..... 1 **[SEND TO C_2_FR_B]**
Against ..... 2 **[SEND TO C_2_AG_B]**
Not Sure ..... 3 **[SEND TO C_2_AG_B]**

C_2_FR_B_. Why did you decide to vote for the program? Please check the most important reasons to you. **[1 = YES, CHECKED FOR EACH]**

a. Reducing the risk of losing endangered species is important to me.
b. Preventing the deaths of numerous wildlife species including birds, sea turtles and marine mammals is important to me.

c. Protecting the marine habitat and ecosystem for future generations is important to me.
d. Preventing environmental impacts that are potentially irreversible is important to me.
e. I believe that even if regulations are improved, they can't prevent another spill.
f. I believe it's the right thing to do.
g. I believe the precaution is worth the cost.
h. Other (please describe) **[MEDIUM TEXT BOX: C_2_FR_B_Text]**

C_2_FR_C. How sure are you that you would really vote for this program?

Very sure 1
Somewhat sure 2
Neither unsure nor sure 3
Somewhat unsure 4
Very Unsure 5

[SEND TO C_3]

C_2_AG_B_. Why did you decide to vote against the program? Please check the most important reasons to you. **[1 = YES, CHECKED FOR EACH]**

a. Since most species are not in danger of going extinct, it is not important to me.
b. I don't believe another large spill will happen because companies will voluntarily improve.
c. I don't believe the program will be as effective as described.
d. I don't trust the U.S. Coast Guard.
e. I believe that regulations on drilling will change and be effective.
f. My money would be better spent on other things.
g. The cost to me is too high.
h. Other (please describe) **[MEDIUM TEXT BOX: C_2_FR_B_Text]**

C_2_AG_C. Would you be willing to pay anything for the funding of this proposed program?

Yes, I would be willing to pay something less than you are asking 1
No, I am not willing to pay anything for the reasons stated previously 2
Not Sure..... 3

[SEND TO C_3]

Now we would like to ask for your opinions on future oil spills in the Gulf of Mexico and the program you just evaluated.

C_3. With oil drilling resumed in the Gulf and continuing to move into deeper waters, what is your best guess of the chances of another large oil spill in the Gulf of Mexico in the next 10 years?

0%; I don't think there is any chance of another large spill 1
25%; I think there is probably a slight chance of another large spill 2
50%; I think there is probably a 50-50 chance of another large spill 3
75%; I think there is a pretty good chance of another spill 4
100%; I think another large spill is certain 5
Not Sure 6

C_4. In your opinion, how will the environmental impacts from another large spill in the Gulf of Mexico be <u>without the proposed program</u> compared to the 2010 Gulf oil spill? Do you believe the *environmental impacts without the program* will be . . .

A lot more 1
Somewhat more 2
Same amount 3
Somewhat less 4
A lot less 5
Not Sure 6

C_5. Scientists estimate that the program you evaluated would reduce the environmental impacts by **[X%]** from another large oil spill in the Gulf of Mexico. Do you believe the proposed program would be . . .

A lot more effective than stated 1
Somewhat more effective than stated 2
About as effective as stated 3
Somewhat less effective than stated 4
A lot less effective than stated 5
Not Sure 6

C_6. You were asked to vote on a one-time payment. When you decided how to vote, did you think your household would actually have to make the federal tax payment . . .

Not at all 1
One time 2
More than one time 3
Not sure 4

C_7. Overall, do you think the information presented to you tried to push you to vote one way or another, or let you make up your own mind?

Yes, it strongly pushed me to vote against the program 1
Yes, there was a slight push for me to vote against the program 2
No, it didn't push me to vote for or against the program 3
Yes, there was a slight push for me to vote for the program 4
Yes, there was a strong push for me to vote for the program 5
Not sure 6

C_8. Please indicate your disagreement or agreement with the following statement:

"I believe the results of this survey will affect decisions about oil monitoring and cleanup by the U.S. Coast Guard in the Gulf of Mexico."

Strongly agree 1
Somewhat agree 2
Neither disagree nor agree 3
Somewhat disagree 4
Strongly disagree 5
Not sure 6

C_9. Generally speaking, how much confidence do you have in the Federal government's ability to reduce the impacts from oil spills?

Very confident 1
Somewhat confident 2
Neither unconfident nor confident 3
Somewhat unconfident 4
Very unconfident 5
Not sure 6

D. ADDITIONAL HOUSEHOLD INFORMATION

Next, we have some questions about your Household.

D_1. How often do you personally watch television programs on the environment?

Never 1
Rarely 2
Sometimes 3
Often 4
Very often 5
Not sure 6

A_3. During the past 12 months, about how many days have you spent at coastal areas on the Gulf of Mexico for saltwater-based recreation (e.g., going to a beach, saltwater fishing, boating)?

0 (never) ..... 1 **[SEND TO D_3]**
1 to 6 days ..... 2 **[SEND TO A_3_B]**
7 to 11 days ..... 3 **[SEND TO A_3_B]**
12 to 17 days ..... 4 **[SEND TO A_3_B]**
18 or more days ..... 5 **[SEND TO A_3_B]**

[ASK IF A_3 =2-5]:

A_3_B_. What saltwater-related activities did you participate in during your last visit to a coastal area in the Gulf of Mexico? Check all that apply: **[1 = YES, RADIO BUTTONS FOR EACH]**

a. Going to a beach
b. Saltwater fishing from a boat near shore
c. Offshore saltwater fishing
d. Saltwater fishing from a pier or shore
e. Snorkeling or diving
f. Non-motorized boating on saltwater (e.g., canoeing, kayaking)
g. Motorized boating or sailing without fishing
h. Other
i. None of the above

D_3. How many personal vehicles are owned or leased by members of your household?
[PULL DOWN MENU: 0, 1, 2, …6, MORE THAN 6; CODED 2-9]

D_6. In the past 12 months (1 year) has anyone in your household contributed to an environmental cause or organization with their time or money?

Yes 1
No.....2
Not Sure.....3

D_7. Was your household's income directly or indirectly affected by the 2010 Gulf oil spill?

Yes 1
No.....2
Not Sure.....3

D_8. How many people that live in your household contribute to the household income?
____ people **[PULL DOWN: 1, 2, 3, … 9,10 OR MORE; CODED 2-8]**

D_9. Did you receive a federal income tax refund or pay additional federal taxes for 2010?

Note: This information is important since it might help explain your vote on the program.

I received a refund in 2010 1
I made a payment in 2010.....2
I was not required to file in 2010.....3
I'm not sure 4

E. FINAL FOLLOW-UP

[PLEASE SEE APPENDIX FOR THE POP-UP DESCRIPTIONS]

Now that we're at the end of the survey and you have been able to think a bit more about the program, I'd like to give you a chance to revisit the voting question.

To review a brief summary of the program, its effects, and funding click here. **[POP-UP #1]**
To review the program description click here. **[POP-UP #2]**
To review the estimated effects of the program click here. **[POP-UP #3]**
To review possible reasons people might vote for or against the program click here. **[POP-UP #4]**

E_1. If an election were being held today, would you vote for or would you vote against the funding of a U.S. Coast Guard program to reduce environmental impacts of another large Gulf oil spill by **[X%]** if a <u>one-time</u> payment of **[$Z]** would be added to your household's federal income tax?

Note: The funds raised from this <u>one-time</u> assessment would be transferred, by law, directly to the U.S. Coast Guard in the same manner as the additional lease fees charged to the oil companies described earlier.

For.....1
Against 2
Not Sure.....3

[SEE REDIRECT INSTRUCTIONS IN FOLLOWING TABLE]

Redirects depend on response to E_1 and X%:

Response from E_1	X%			
	X = 20	*X = 45*	*X = 70*	*X = 90*
For(E_1=1)	Send to E_2	Send to E_1.FR	Send to E_1.FR	Send to E_1.FR
Against(E_1=2)	Send to E_1.AG	Send to E_1.AG	Send to E_1.AG	Send to E_2
Not sure(E_1=3)	Send to E_1.AG	Send to E_1.AG	Send to E_1.AG	Send to E_2

Effectiveness levels to show in follow-up:

	X = 20	*X = 45*	*X = 70*	*X = 90*
Program 1%		**20%**	**45%**	**70%**
Program 2%	**20%**	**45%**	**70%**	**90%**
Program 3%	**45%**	**70%**	**90%**	

E_1_FR. Now suppose that you were asked to vote on the program that scientists estimate will reduce the environmental impacts of another large Gulf oil spill by **[Program 1%]** instead of **[Program 2%]**.

Would you vote for or would you vote against the funding of a U.S. Coast Guard program to reduce environmental impacts by **[Program 1%]** if a one-time payment of **[$Z, *same value as in C_2*]** would be added to your household's federal income tax return?

For 1
Against 2
Not Sure.....3

[SEND TO E_2]

E_1_AG. Now suppose that you were asked to vote on the program that scientists estimate will reduce the environmental impacts of another large Gulf oil spill by **[Program 3%]** instead of **[Program 2%]**.

Would you vote for or would you vote against the funding of a U.S. Coast Guard program to reduce environmental impacts by **[Program 3%]** if a one-time payment of **[$Z, *same value as in C_2*]** would be added to your household's federal income tax return?

For 1
Against 2
Not Sure.....3

[SEND TO E_2]

E_2. The objective of the survey was to determine whether you would support a U.S. Coast Guard program that has been designed to reduce the environmental impacts of another large oil spill in the Gulf of Mexico. It considered different levels of payment, effectiveness and allowed for both supportive and negative responses since there was no right answer.

Given this objective, and the amount of information we could provide in an Internet survey, do you agree or disagree with the following statement:

"I believe that the survey was intentionally misleading."

Strongly disagree (it was very neutral) 1
Somewhat disagree (it was somewhat neutral) 2
Neither agree or disagree 3
Somewhat agree (it was misleading) 4
Strongly agree (it was extremely misleading) 5
Not Sure.....6

[SHOW E_2Y IF E_2=3,4,5,6, REFUSED]

E_2Y. Why are you not sure or think the information was presented in a misleading manner? **[TEXT BOX]**

[SEND TO E_3]

E_3. Based on the questions you have been asked, who do you feel funded the University of Florida to conduct this survey? **[TEXT BOX]**

END OF SURVEY

Content of Pop-up Boxes

POP-UP #1

Program summary, environmental benefits and funding

This program would install five U.S. Coast Guard (USCG) ships in the Gulf of Mexico to monitor for oil every 20 miles and routinely as necessary with anchored and mobile samplers. The USCG would become the lead agency responsible for oil monitoring and clean-up. Scientists estimate it will reduce environmental impacts by **[X%]**. Due to restrictions under the Oil Pollution Act (OPA), companies can be made to pay higher lease fees for ongoing monitoring but cannot be forced to contribute to the purchase of permanent equipment they do not own, such as the new ships that will be owned by the U.S. Coast Guard. Therefore, the U.S. taxpayers would pay for the upfront costs through a one-time federal income tax if the majority of voters approve the measure in the November 2012 general election.

POP-UP #2

Review of program description

There would be five U.S. Coast Guard ships specially designed to quickly stop oil spills and clean up any spilled oil in the Gulf of Mexico. The ships would carry submersibles and robots designed to deal with deepwater oil spills and highly trained crews to operate the equipment. The equipment would be similar to what was used to stop the 2010 Gulf oil spill but would be updated based on what was learned from that spill; and, unlike with the response to the 2010 Gulf oil spill, would be operated by personnel specifically trained to use the equipment.

The ships would also carry booms and skimming equipment to help clean up any spilled oil (no dispersants would be used). Four ships would be permanently stationed in the active oil drilling region of the northern Gulf. The remaining ship would be rotated in to allow for routine maintenance. At least one ship would be able to reach any spill within 6 hours.

The ships would also deploy and monitor oil detection equipment that would be placed every 20 miles throughout the U.S. oil drilling region in the Gulf of Mexico. The equipment would be able to detect oil below the surface of the water and would help target cleanup efforts. The equipment would also provide information both before and after a spill, allowing for an accurate measurement of oil spilled.

Lastly, the new program would identify the U.S. Coast Guard as the lead agency in addressing oil spill monitoring and clean up in the Gulf of Mexico. The designation would help to reduce the confusion and delay that followed the 2010 Gulf oil spill.

POP-UP #3

ENVIRONMENTAL MEASURE	ENVIRONMENTAL BENEFITS OF PROGRAM			
	X%=20%	X%=45%	X%=70%	X%=90%
SHORELINE [A]	210	472	735	945
BIRDS [B]	1,229	2,766	4,302	5,532
SEA TURTLES [C]	122	275	429	552
MAMMALS [D]	30	69	107	139

Review of estimated environmental impacts with and without the program:

Impacts observed following the 2010 Gulf oil spill without the program:

- Oiled coastal areas: 1,050 miles
- Animals killed: At least 6,147 birds, at least 613 sea turtles, at least 154 marine mammals

Estimated impacts of another similar size Gulf oil spill **with the proposed program** would be X% lower, such that**:**

- **[A]** miles of shoreline would not have been oiled
- Animals saved: **[B]** birds, **[C]** sea turtles, **[D]** marine mammals

POP-UP #4

Review of some reasons for voting for or against the program

Reasons for the program:	Reasons against the program:
• Reduces the risk of losing endangered species.	• Most species are not in danger of going extinct.
• Prevents the deaths of numerous wildlife species including birds, sea turtles and marine mammals.	• Another large oil spill won't happen because companies will voluntarily improve.
• Protects the marine habitat and ecosystem for future generations.	• The program will not be as effective as described.
• Prevent damages that are potentially irreversible.	• The U.S. Coast Guard is not trustworthy.
• Even if regulations are improved they can't prevent another spill.	• Regulations on drilling will change and be effective.
• It is the right thing to do.	• The cost is too high.
• The precaution is worth the cost to me.	• My money is better spent on other things.

Appendix C: Study 2 Questionnaire and Coding

Questionnaire Coding

[CREATE DOV_PANEL: 1 = KN, 2 = OPT-IN]

[IF PANEL = 1: Thank you for continuing to be part of the KnowledgePanel®.**]** This survey asks about recreation in the Southeastern U.S., specifically saltwater-based recreation. The study will help researchers understand what affects travel plans.

As with all Knowledge Networks surveys, your response to any individual question on the survey is voluntary. You have the right to withdraw at any time by exiting the survey. You will not be individually identified and your responses will be used for statistical purposes only. This is a standard survey, requiring approximately 10-15 minutes of your time, and there are no expected risks to you from participating.

If you have questions about your rights as a participant in this survey, you may contact Knowledge Networks at 800-782-6899 and you will be provided with contact information for the study investigators. Please refer to IRB Protocol #2011-U-591.

If you agree to participate in this survey, click next to continue.

A1. In the past five years, have you participated in any saltwater related activities?

This includes going to a beach, saltwater fishing, marine-related activities (e.g., swimming, diving, snorkeling, or surfing in saltwater areas) or general boating on saltwater (e.g., canoeing, kayaking, sailing, motor boating without fishing).

Yes 1
No.....2

[TERMINATE IF NO OR SKIP]

[ASK IF A1 = 1] [SHOW MAP 1][51]

[PROMPT ONCE]

A2. Did you take a trip to any coastal area along the Gulf of Mexico or South Atlantic in the past two years (24 months) that included saltwater related activities?

[51] All maps are included at the end of the survey (i.e., MAPS 1-4).

This includes coastal areas in the shaded states of Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina and North Carolina.

To be clear, a 'trip' includes day trips where you returned to your primary residence on the same day you left (if you live nearby) and longer trips where you spent one or more nights away from your permanent home.

Yes 1
No.....2

[ASK IF A2 = 1] [SHOW MAP 2]

A2Y. Did you visit the Northwest Florida coast on any of these trips within the past two years (24 months)?

This area is shaded reddish-orange in the map that includes the Florida Panhandle.

Yes ..... 1 **[SEND TO B1aa]**
No..... 2 **[SEND TO A2N]**

[ASK IF A2 = 2 OR REFUSED OR A2Y = 2 OR REFUSED]

[PROMPT]

A2N. Since June 1, 2010, did you start planning a trip with saltwater related activities anywhere along the Gulf of Mexico (in Texas, Louisiana, Mississippi, Alabama or Gulf coast of Florida) but eventually decided to cancel the trip or go somewhere else?

Note that we are interested in a trip that you started planning (e.g., considered where you would stay, investigated activities, made a deposit), not a trip that you just thought about.

Yes 1
No.....2

[TERMINATE IF NO OR REFUSED]

[ASK IF A2N = 1]

[PROMPT ONCE]

A3. Was your decision to cancel or change a trip to the Gulf of Mexico because of the oil spill (and its effects) that started in April 2010 and went through last summer?

Yes 1
No.....2

[TERMINATE IF NO OR REFUSED]

[DOV: GROUP:
IF A2Y = 1 GROUP = 1 (PAST VISITORS), IF A3 = 1 GROUP = 2 (CANCELLERS)]

[ASK IF A3 = 1]

A4_. Which coastal state(s) in the Gulf of Mexico did you plan to visit and participate in saltwater related activities but decided not to because of the oil spill? Please check all states that you planned to visit. **[1 = YES, CHECKED ON EACH]**

a. Texas
b. Louisiana
c. Mississippi
d. Alabama
e. Florida

IF A4_e ~= 1 SEND TO B8_TYP1

[ASK IF A4_e = 1] [SHOW MAP 2]

A5. Were any of these planned trips to Florida in the Northwest region, that is, a coastal area in one of the counties shaded in the map?

Yes 1
No.....2 **[SEND TO B8_TYP1]**

[IF A5=REFUSED, GO TO B8_TYP1]

[ASK IF A5 = 1]

[SHOW MAP3]

A6. What coastal area(s) would you have visited in Northwest Florida had you not changed your plans?

Pensacola area 1
Ft. Walton / Destin area.....2
Panama City area 3
Port St. Joe area 4
Central Gulf Coast (Apalachicola – Yankeetown).....5
More than one of these areas.....6

[ASK IF A6 = 1-5]

A7_ONE_. About how many of these trips did you start planning and then cancel or change your destination because of the oil spill last summer?

Notes: Count both day trips and trips where you would have spent one or more nights away from your permanent home.

Only count trips where you would have participated in saltwater related activities.

a. canceled or changed trips **[PULL DOWN MENUS:**
b. total nights away from home affected **1, 2, 3,… 48, MORE THAN 48]**

[SKIP TO A.8A]

[ASK IF A6 = 6] [SHOW MAP 3]

A7_MLT_. Which coastal areas would you have visited in Northwest Florida had you not changed your plans? Please check all areas you would have visited.

a. Pensacola area **[1 = YES, IF CHECKED ON EACH]**
b. Ft. Walton / Destin area
c. Panama City area
d. Port St. Joe area
e. Central Gulf Coast (Apalachicola – Yankeetown)

[SHOW RESPONSES FROM A7_MLT]

[SHOW MAP3]

About how many of these trips did you start planning and then change or cancel to each area because of the oil spill last summer?

Notes: Count both day trips and trips where you spent one or more nights away from home and would have participated in saltwater related activities in the first column. Select how many total nights away from home would you have spent in each of these regions in the second column.

Coastal area [i]	Number of changed or cancelled trips [A7_MLT_A_i_trips]	Total nights away from home [A7_MLT_A_i_nights]
a. Pensacola area b. Ft. Walton / Destin area c. Panama City area d. Port St. Joe area e. Central Gulf Coast g. g. (Apalachicola – Yankeetown)	**[PULL DOWN MENUS: 0, 1, 2,… 48, MORE THAN 48**	

[ASK IF A5 =1]

A8a_. During your planned visit(s), which of the following saltwater related activities did you plan to participate in? Please check all that apply. **[1 = YES, CHECKED ON EACH]**

a. Going to a beach and related activities (swimming, surfing, etc.)
b. Saltwater fishing from a boat near shore
c. Deepwater saltwater fishing
d. Saltwater fishing from a pier or shore
e. Diving or snorkeling
f. Non-motorized boating on saltwater (e.g., canoeing, kayaking)
g. Motorized boating or sailing without fishing
h. Other saltwater activities **[TEXT BOX: A8A_OTHER]**

[SHOW ANSWERS SELECTED IN A8A]

A8b. Which of the following saltwater related activities was the primary or most important reason for planning to take your trip or trips? Choose one.

If participating in multiple activities was equally important, select "multiple saltwater activities."

Going to a beach and related activities (swimming, surfing, etc.) 1
Saltwater fishing from a boat near shore 2
Deepwater saltwater fishing 3
Saltwater fishing from a pier or shore 4
Diving or snorkeling 5
Non-motorized boating on saltwater (e.g., canoeing, kayaking) 6
Motorized boating or sailing without fishing 7
Other saltwater activities 8
Multiple saltwater activities 9
None (the primary purpose was NOT for saltwater related activities) 10

[IF GROUP = 2, GO TO B8_TYP1]

[SHOW MAP 2]

You indicated that you visited the Northwest region of Florida's Gulf coast at least once during the past two years (24 months) and participated in saltwater related activities.

B1aa. In the past two years (24 months), how many <u>total</u> trips did you take to the Northwest Florida region that included saltwater related activities?

[PULL DOWN MENU: 1, 2, 3,… 48, MORE THAN 48]

B1a_. In the past two years (24 months), how many of these trips included visits to each of the five areas? These areas are shown in the map.

a. Pensacola area
b. Ft. Walton/Destin area
c. Panama City area
d. Port St. Joe area
e. Central Gulf Coast area

[PULL DOWN MENU: 0, 1, 2,… 48, MORE THAN 48]

[SHOW B1D AND B1E ON THE SAME SCREEN]

[PULL DOWN MENUS: 0, 1, 2,… 48, MORE THAN 48]

[SHOW MAP 2]

B1d. How many total trips did you take to the Northwest Florida region that included saltwater related activities since June 1, 2010?

[SHOW OPTION NO GREATER THAN ANSWER TO B1aa]

B1e. How many total nights did you spend in the Northwest Florida region since June 1, 2010?

[FOR EACH AREA > 0 IN B1a, SHOW UP TO NUMBERS SELECTED IN B1a]

B1b_. How many of these trips included visits to each of these areas since June 1, 2010?

a. Pensacola area
b. Ft. Walton/Destin area
c. Panama City area
d. Port St. Joe area
e. Central Gulf Coast area

Thinking about your most recent trip to the Northwest region of Florida that involved saltwater related activities when did that trip begin?

B2_month **[PULL DOWN MENU: JAN, FEB, MAR,…. DEC; CODED AS 2-13]**
B2_year **[PULL DOWN MENU: 2009, 2010, 2011; CODED AS 2, 3, 4]**

B3. How many total nights did you spend away from home? Include nights spent traveling even if they were in other states or regions in Florida.

[PULL DOWN MENU: 0 (DAY TRIP), 1, 2,… 48, MORE THAN 48; CODED 2-51]

[IF SELECT '0 (DAY TRIP)' SEND TO B4_DAY, OTHERWISE SEND TO B_4_MULTI]

[SHOW MAP 3]

[IF B3 = 0]

B4_DAY. In which of the five regions in Northwest Florida did you spend your day? These regions are shown in the map. Select one.

Pensacola area.....1
Ft. Walton / Destin area.....2
Panama City area.....3
Port St. Joe area.....4
Central Gulf Coast (Apalachicola – Yankeetown).....5

[SKIP TO B5]

[SHOW MAP 3]

[IF B3 > 0]

B4_MULTI_. You indicated you spent **[ANSWER IN B3]** nights away from home on your most recent trip. How many nights did you spend in each of the five areas of Northwest Florida and outside the region?

These areas are shown on the map. If you did not spend any nights in an area, please select "0" so we know the answer wasn't skipped. Thanks.

a. Pensacola area
b. Ft. Walton/Destin area
c. Panama City area
d. Port St. Joe area
e. Central Gulf Coast area
f. Outside Northwest Florida

[PULL DOWN MENU:
0, 1, 2,…-48, MORE THAN 48]

B5_. During your most recent trip that included a visit to Northwest Florida, which of the following saltwater related activities did you participate in? Please check all that apply. **[1 = YES, CHECKED ON EACH]**

a. Going to a beach and related activities (swimming, surfing, etc.)
b. Saltwater fishing from a boat near shore
c. Deepwater saltwater fishing
d. Saltwater fishing from a pier or shore
e. Diving or snorkeling
f. Non-motorized boating on saltwater (e.g., canoeing, kayaking)
g. Motorized boating or sailing without fishing
h. Other saltwater activities **[MEDIUM TEXT BOX: B5_OTHER]**

[IF SELECTED a-h, SAVE TO LIST FOR B6; IF SELECTED ONLY 1 ITEM, SEND TO B7]

[SELECT AMONG THE ANSWERS PROVIDED IN B5_a-h, ADD i AND j]

B.6. Which of the following activities was your most important reason for taking your most recent trip to the Northwest region of Florida? Choose one.

If participating in multiple activities was equally important, select "multiple saltwater activities."

Going to a beach and related activities (swimming, surfing, etc.) 1
Saltwater fishing from a boat near shore 2
Deepwater saltwater fishing 3
Saltwater fishing from a pier or shore 4
Diving or snorkeling 5
Non-motorized boating on saltwater (e.g., canoeing, kayaking) 6
Motorized boating or sailing without fishing 7
Other saltwater activities 8
Multiple saltwater activities 9
None (the primary purpose was NOT for saltwater related activities) 10

B.7. How would you rate the overall quality of the area you visited most recently in Northwest Florida for your primary activity?

Poor 1
Fair 2
Good 3
Very good 4
Excellent 5

B.8. Would you consider your most recent trip to be a typical trip when you visit a coastal area in the Southeast U.S. for saltwater related activities?

Yes ..... 1 **[SEND TO B9]**
No ..... 2 **[SEND TO B8_TYP1]**

[ASK IF B8 = 2 OR REFUSED OR A4_ e ~= 1 OR A5 =2 OR REFUSED OR GROUP = 2]

[SHOW MAP 4]

B8_TYP1. Where do you go on a typical trip when you want to visit a coastal area in the Southeast U.S. for saltwater related activities? Please select one.

Texas 1
Louisiana 2
Mississippi 3

Alabama....4
Northwest Florida....5
Southwest Florida....6
Florida Keys....7
Florida's Atlantic Coast....8
Georgia....9
South Carolina....10
North Carolina....11
Not applicable (I don't have a typical trip to this region)....12

[IF SELECTED 1-11, SEND TO B2A, IF SELECTED 12 OR REFUSED, SEND TO B9]

B2A. Thinking about your typical trip to the Southeast U.S. that involves saltwater related activities, how many total nights do you spend away from home?

Include nights spent traveling even if they were in other states or regions in the U.S.

[PULL DOWN MENU: 0 (DAY TRIP), 1, 2, 3,... 48, MORE THAN 48; CODED 2-51]

[IF SELECT '0 (DAY TRIP)' SEND TO B4A_DAY, OTHERWISE SEND TO B4_MULTI_]

[SHOW MAP 4]

[IF B2A = 0]

B4A_DAY. In which of the following regions of Southeast U.S. do you spend your day? These regions are shown in the map. Select one.

Texas....1
Louisiana....2
Mississippi....3
Alabama....4
Northwest Florida....5
Southwest Florida....6
Florida Keys....7
Florida's Atlantic Coast....8
Georgia....9
South Carolina....10
North Carolina....11

[SKIP TO B5A]

[SHOW MAP 4]

[IF B2A > 0]

B4A_MULTI_. Of your [answer to B.2A] nights away from home, how many nights do you spend in each of the following regions of Southeast U.S. during a typical trip that includes saltwater related recreation? These areas are shown on the map.

Note: You may leave the default at 0 nights but please enter the nights to match your total above.

a. Texas
b. Louisiana
c. Mississippi
d. Alabama
e. Northwest Florida
f. Southwest Florida
g. Florida Keys
h. Florida's Atlantic Coast
i. Georgia
j. South Carolina
k. North Carolina

[PULL DOWN MENUS:]
0, 1, 2,…-48, MORE THAN 48]

B5A_. During your typical trip to the Southeast U.S., which of the following saltwater related activities do you participate in? Please check all that apply. **[1 = YES, CHECKED ON EACH]**

a. Going to a beach and related activities (swimming, surfing, etc.)
b. Saltwater fishing from a boat near shore
c. Deepwater saltwater fishing
d. Saltwater fishing from a pier or shore
e. Diving or snorkeling
f. Non-motorized boating on saltwater (e.g., canoeing, kayaking)
g. Motorized boating or sailing without fishing
h. Other **[TEXT BOX: B5A_OTHER]**

[IF SELECTED A-H, SAVE TO LIST FOR B6A; IF SKIPPED, SEND TO B7A]

[SELECT AMONG THE ANSWERS PROVIDED IN B5A_A-H]

B6A. Which of the following activities is your most important reason for taking your typical trip to the Southeast U.S.? Choose one.

If participating in multiple activities is equally important, select "multi-activity trip."

Going to a beach and related activities (swimming, surfing, etc.) 1
Saltwater fishing from a boat near shore 2
Deepwater saltwater fishing 3
Saltwater fishing from a pier or shore 4
Diving or snorkeling 5

Non-motorized boating on saltwater (e.g., canoeing, kayaking).....6
Motorized boating or sailing without fishing 7
Other saltwater activities 8
Multi-activity trip.....9

B7A. How would you rate the overall quality of the area you typically visit for your primary saltwater based activities in the Southeast U.S.?

Poor.....1
Fair 2
Good.....3
Very good.....4
Excellent.....5

[SEND TO B9]

[SHOW MAP 4]

B9. Excluding any past trip(s) to Northwest Florida, how many trips with saltwater related activities did you take to other areas in the Southeast since June 1, 2010?

[PULL DOWN MENU: 0 (NO OTHER TRIPS), 1, 2, 3,… 48, MORE THAN 48]

IF '0 (NO OTHER TRIPS)' SEND TO B11, OTHERWISE SEND TO B_10A

B_10A_. You reported **[ANSWER TO B9]** trip(s) with saltwater related activities to the Southeast region (excluding Northwest Florida) since June 1, 2010. How many trip(s) did you take to each state or area?

[SHOW MAP 4]

Note: These numbers may be higher than your total if you visited multiple states or areas on a single trip.

a. Texas
b. Louisiana
c. Mississippi
d. Alabama
e. Southwest Florida
f. Florida Keys
g. Florida's Atlantic Coast
h. Georgia
i. South Carolina
j. North Carolina

**[PULL DOWN MENUS:
0 (NONE), 1, 2,… 48, MORE THAN 48;
SHOW '0 (NONE)' AS THE DEFAULT]**

[SHOW STATES SELECTED IN B_10A]

B_10B_. How many <u>total nights</u> did you spend in each state or area since June 1, 2010?

If you did not spend any nights in an area, please select "0" so we know it wasn't skipped. Thanks.

a. Texas
b. Louisiana
c. Mississippi
d. Alabama
e. Southwest Florida
f. Florida Keys
g. Florida's Atlantic Coast
h. Georgia
i. South Carolina
j. North Carolina

[PULL DOWN MENUS:
0 (NONE), 1, 2,… 48, MORE THAN 48]

B11. Were <u>any</u> of your trips to the Southeast U.S. since June 1, 2010, including your trip(s) to Northwest Florida you previously reported, affected by the oil that was spilled into the Gulf of Mexico last summer?

By 'affected' we mean trips that were either cut short, trips that were a replacement for one that was canceled, trips that were added (likely to other areas), or trips where you changed your activities (e.g., going hiking, staying at the pool, or boating/fishing in freshwater).

Yes ..... 1 **[SEND TO B12]**
No..... 2 **[SEND TO B_13]**

[IF REFUSED, SEND TO B13]

[IF B9 >= 1 SHOW ITEMS SELECTED IN B_10A]

B12_. The table below lists your number of reported trips for each area. Please indicate how many of these trips were affected by the oil spill and how they were affected.

If multiple trips to the same area were affected differently, please select 'multiple'.

Region [i]	Reported Total Number of Trips	Number of Trips Affected [B12_i_Num]	How Trips Were Affected [B12_i_How]
a. Texas	Show B_10A_a		
b. Louisiana	Show B_10A_b		
c. Mississippi	Show B_10A_c	**[PULL DOWN MENUS: 1, 2, 3…-48, MORE THAN 48; CAPPED AT FIRST COLUMN]**	**1=CUT SHORT 2=REPLACEMENT 3=ADDED 4=DID DIFFERENT ACTIVITIES 5=MULTIPLE REASONS**
d. Alabama	Show B_10A_d		
e. Northwest Florida	Show B1d		
f. Southwest Florida	Show B_10A_e		
g. Florida Keys	Show B_10A_f		
h. Florida's Atlantic Coast	Show B_10A_g		
i. Georgia	Show B_10A_h		
j. South Carolina	Show B_10A_i		
k. North Carolina	Show B_10A_j		

B_13. Did you cancel any coastal trips to the U.S. Gulf of Mexico due to the oil spill that started in April 2010 and continued through last summer?

Yes .....1 **[SEND TO B14A]**
No.....2 **[SEND TO C1]**

[IF REFUSED, SEND TO C1]

B14A_. Where did you intend to visit for the trips you cancelled? Check all that apply.

a. Texas **[1 = YES, IF CHECKED ON EACH]**
b. Louisiana
c. Mississippi
d. Alabama
e. Northwest Florida
f. Southwest Florida
g. Florida Keys

[SAVE RESPONSES FROM B14A]

B14B_TOTAL. How many trips in total that would have included saltwater based recreation? Have you canceled trips to the Gulf states because of the oil spill that started in April 2010?

[PULL DOWN MENU: 1, 2, 3… 48, MORE THAN 48; CODED 2-50]

B14B_. How many trips did you cancel to each area?
Note: These numbers may be higher than your total if you visited multiple states or areas on a single trip.

a. Texas
b. Louisiana
c. Mississippi
d. Alabama
e. Northwest Florida
f. Southwest Florida
g. Florida Keys

[PULL DOWN MENUS FOR EACH SELECTED IN B14A: 1, 2, 3… 48, MORE THAN 48; CODED 2-50]

[ASK SECTION C IF GROUP=1]

[IF GROUP=2, SKIP TO SECTION D]

[SHOW C1 AND C2 ON THE SAME SCREEN]

We would like to ask you some more details about the <u>most recent trip you took to Northwest Florida</u> that involved saltwater related activities. This could be a day trip or a longer trip that lasted one or more nights.

C1_. How many adults (at least 18 years of age at the time of the trip), including yourself, and children (aged 17 or younger) went on this trip?

a. adults **[PULL DOWN MENU: 1, 2, 3,… 12, MORE THAN 12; CODED 3-15]**
b. children **[PULL DOWN MENU: 0, 1, 2,… 12, MORE THAN 12; CODED 2-15]**

C2. What was your primary method of transportation between your permanent home and Northwest Florida (that is, how did you travel the majority of the distance)?

Owned passenger car/truck/SUV 1
Rental passenger car/truck/SUV 2
Owned RV 3
Rented RV 4
Commercial or private aircraft.....5
Other **[TEXT-BOX: C2_Other]** 6

Next we are going to ask a few questions about how much you spent on this trip, including what you might have paid for other people in your group. If you did not pay or the category does not apply to your trip, please enter a "0."

[DISPLAY C3A, C3B AND C3C ON THE SAME SCREEN]

C3a. About how much did you spend for round-trip transportation costs on this trip? This includes plane tickets, car rental, fuel, parking and tolls. **[NUMBER BOX 0-999,999]**

C3b. About how much did you spend on lodging during this trip? **[NUMBER BOX 0-999,999]**

C3c. What type of lodging did you <u>primarily</u> use?

Hotel or motel 1
Timeshare 2
Rented condo, apartment, or house 3
Bed & breakfast 4
Campground 5
Stayed with family or friends 6
Stayed at home (day trip) 7
Other 8

About how much did you spend for the following items during this trip and how much of that was spent in the Northwest Florida region(s) that you visited?

Expense [i]	How much did you spend? [C3d_i_Amt]	How much did you spend in the Northwest Florida region(s)? [C3d_i_NF]			
		None (0%)	Some (1-49%	Most (50-75%)	Nearly all (76-100%)
a. Boat rental, fuel and oil b. Ramp, mooring, and parking fees c. Fishing charter, party boat and diving fees d. Sport equipment rentals (fishing/diving gear, beach chairs, etc.) e. Misc. retail purchases (sunscreen, towels, hats, souvenirs, etc.) f. Food and beverage from stores g. Food and beverage from restaurants h. Clothing and accessories i. Other entertainment (movies, museums, events, parks, etc.) j. Other **[TEXT BOX: C3D_Other]**	**[NUMBER BOXES 0-999,999]**	**[RADIO BUTTONS, 0%-76%+ CATEGORY CODED 1-4]**			
TOTAL	**[DYNAMICALLY UPDATE TOTAL]**				

[PROMPT IF TOTAL SKIPPED]

[DOV: TC = SUM OF ANSWERS IN C3A AND C3B]

[IF C3A = MISSING AND C3B ~= MISSING, TC = C3B]
[IF C3B = MISSING AND C3A ~= MISSING, TC = C3A]
[IF C3A = MISSING/0 AND C3B = MISSING/0, TC = 175]
[IF TC > 1250, TC = 1250]

[DOV: Y1 = RANDOM SELECTION OF 25%, 50%, 75%, 100%, 125%]

C7. Trip costs such as travel and lodging expenses change over time. For example, gas prices fell during the 1990s and rose during 2004 and 2008. They have also been rising during 2011. Would you have visited Northwest Florida for your most recent trip if your *travel and lodging expenses* were $ **[X1]** *higher*? **[WHERE X1 = TC*Y1, LIMITED TO TWO DECIMALS]**

Yes ..... 1 **[SEND TO C9Y]**
No..... 2 **[SEND TO C9N]**

[IF REFUSED, SEND TO C9N]

C9Y. How sure are you that you would actually be willing to pay that much more?

Very sure.....1
Somewhat sure.....2
Neither sure nor unsure.....3
Somewhat unsure.....4
Very unsure.....5

C9N. If cost was a factor in your decision, which of the following statements best describes what you would have done instead of taking your past trip to Northwest Florida? Select one:

I would have stayed home.....1
I would have taken a similar trip closer to my home 2
I would have taken a shorter trip to the same location.....3
I would have taken a trip, but a different type of trip 4
I would have done some other activity.....5
Unsure.....6

[SHOW MAP1]

D1. Do you plan to take any trips during the next 12 months to any coastal area in the U.S. Gulf of Mexico or South Atlantic (i.e., Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, or North Carolina) that would include saltwater related activities?

Note: Only count the trips that you really think you will take, not the trips that you hope you will take.

Yes ..... 1 **[SEND TO D2Y]**
No ..... 2 **[SEND TO D2N]**

[IF D1 = 2 OR REFUSED]

D2N_. Why are you <u>not</u> planning to take any such trips? Please check all that apply.

a. High price of gasoline **[1 = YES, IF CHECKED ON EACH]**
b. Effects of the Gulf oil spill
c. Reduced income due to economy
d. Change in employment status
e. Change in family situation
f. Other **[TEXT BOX: D2N_Other]**

IF SELECT B SEND TO D3, OTHERWISE SEND TO D4

D2Ya. About how many trips involving saltwater related activities do you <u>plan</u> to take during the next 12 months to the U.S. Gulf of Mexico or South Atlantic (i.e., Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, or North Carolina)?

We realize that this may be difficult to know, please use your best estimate.

Note: You may leave the default if you do Not Plan to take a trip, we will assume it is "0."

[PULL DOWN MENU: 0 (NONE), 1, 2, ... 48, MORE THAN 48; CODED 2-51]

[IF REFUSED, SEND TO D4]

D2Yb. Have any of your <u>planned trips</u> to the Southeast U.S. during the next 12 months been affected by the oil that was spilled into the Gulf of Mexico last summer?

By 'affected' we mean trips that you have decided to cut short, trips that will be a replacement for one that was canceled, trips to different areas, or trips where you are planning different activities (e.g., going hiking, staying at the pool, or boating/fishing in freshwater) because of the spill.

Yes ..... 1 **[SEND TO D3]**
No ..... 2 **[SEND TO D4]**

D3_. For each area, please indicate just the number of trips you canceled to each region that would have included saltwater related activities because of the April 2010 oil spill that lasted through the summer.

Note: You may leave the default if you did not Cancel a trip, we will assume it is "0."

[SHOW MAP 4]

a. Texas
b. Louisiana
c. Mississippi
d. Alabama
e. Northwest Florida
f. Southwest Florida
g. Florida Keys
h. Florida's Atlantic Coast
i. Georgia
j. South Carolina
k. North Carolina

[PULL DOWN MENU:
0 (NONE), 1, 2,… 48, MORE THAN 48;
SHOW '0' AS THE DEFAULT]

[DISPLAY D4 AND D5 ON THE SAME SCREEN]

D4. How do you think the information collected in this survey might be used? **[TEXT BOX: D4_Text]**

D5. Did your expectation of how the information might be used influence the way you answered any questions?

Yes 1
No.....2

D6. How did the April 2010 oil spill in the Gulf of Mexico change your impression of the Northwest Florida Coast?

My impression of the Northwest Florida Coast is much worse after the oil spill...1
My impression of the Northwest Florida Coast is worse after the oil spill.....2
The oil spill has not changed my impression of the Northwest Florida Coast 3
My impression of the Northwest Florida Coast is better after the oil spill.....4
My impression of the Northwest Florida Coast is much better after the oil spill...5

IF D6 = 3 SEND TO E1, OTHERWISE SEND TO D6B

D6b_. If your impression of the Northwest Florida Coast was changed by the oil spill, which aspects changed the most? We realize that many aspects may have changed, please try to identify the top three.

[VARIABLE NAMES: D6B_1, D6B_2, D6B_3]

Beach Quality 1
Fishing Quality 2
Atmosphere 3
Local food/drink 4
Cultural/historical attractions 5
Seafood Quality/Safety 6
Climate 7
Natural attractions 8
Festivals and events 9
Personal safety 10
Water sports 11
Hygiene and cleaning 12
Environmental pollution 13
Variety of recreation activities 14
Fame/reputation 15
Tourist information availability 16
Quality of the infrastructure 17

E1. Lastly, we have some questions to help us determine how representative our sample is with the general population.

Last week did you do any work for either pay or profit

Yes ..... 1 **[SEND TO E2]**
No ..... 2 **[SEND TO E8]**

[IF REFUSED, SEND TO E8]

[DISPLAY E2 AND E3 ON THE SAME SCREEN]

E2. How many hours did you get paid for last week? **[PULL DOWN 1, 2, 3, … 80]**

E3. Is this a typical number of paid work hours for you?

Yes ..... 1 **[SEND TO E4B]**
No ..... 2 **[SEND TO E4]**

[IF E3 = 2 OR REFUSED]

E4. How many hours do you typically get paid for each week? **[PULL DOWN: 1, 2, 3, … 80]**

E4b. Do you typically take time off from work without pay in order to take your saltwater recreation trips?

Yes 1
No.....2

E5. Do you usually receive overtime pay, tips, or commissions at your main job?

Yes 1
No.....2

E6. What is the easiest way for you to report your *total* earnings *before* taxes and other deductions?

Hourly ..... 1 **[SEND TO E7_Hourly]**
Weekly .....2 **[SEND TO E7_Weekly]**
Monthly.....3 **[SEND TO E7_Monthly]**
Annually ..... 4 **[SEND TO E7C]**
Other **[TEXT BOX: E6_Other]**..... 5 **[SEND TO E7D]**

E7_. What are your usual **___[1-4 FROM E6]___** earnings before taxes or other deductions?

Notes: Include any overtime pay, tips or commissions if you have any. Include only your own personal income, NOT your household income.

This information will be used to help us explain how higher trip costs might affect the number of trips taken.

Hourly **[PULL DOWN MENU: LESS THAN $2.50/HOUR, $2.50/HOUR… $0.50 INCREMENTS TO $20.00 THEN $5.00 INCREMENTS TO $50.00, MORE THAN $50.00; CODED 2-45]**

Weekly **[PULL DOWN MENU: LESS THAN $500/WEEK, $500-$749, $750-$999,….. UP TO $3,000/WEEK, MORE THAN $3,000/WEEK; CODED 2-14]**

Monthly **[PULL DOWN MENU: CODE FOLLOWS]**

Less than $500.....2
$500 to $999.....3
$1,000 to $1,499 4
$1,500 to $1,999 5
$2,000 to $2,499 6
$2,500 to $2,999 7
$3,000 to $3,499 8
$3,500 to $3,999 9

$4,000 to $4,499 10
$4,500 to $4,999 11
$5,000 to $5,999 12
$6,000 to $6,999 13
$7,000 to $7,999 14
$8,000 to $8,999 15
$9,000 to $9,999 16
$10,000 to $12,499 17
$12,500 to $14,999 18
$15,000 to $19,999 19
$2,000 or more 20

Annually **[PULL DOWN MENU: CODE FOLLOWS]**

Less than $5,000 2
$5,000 to $7,499 3
$7,500 to $9,999 4
$10,000 to $12,499 5
$12,500 to $14,999 6
$15,000 to $19,999 7
$20,000 to $24,999 8
$25,000 to $29,999 9
$30,000 to $34,999 10
$35,000 to $39,999 11
$40,000 to $49,999 12
$50,000 to $59,999 13
$60,000 to $74,999 14
$75,000 to $84,999 15
$85,000 to $99,999 16
$100,000 to $124,999 17
$125,000 to $149,999 18
$150,000 to $174,999 19
$175,000 or more 20

Other **[TEXT BOX: E7_d]**

E8. Including you, how many people contribute to the total annual *household* income?

[PULL DOWN: 1 (JUST ME), 2, 3, … 9, 10 OR MORE; CODED 2-11]

Maps Included in the Questionnaire

MAP 1:

MAP 2:

MAP 3:


Andalusia
Opp
Brewton
Atmore
Dothan
Geneva
Donaldsonville
Camilla
Moultrie
Colquitt
Pearson
Nashville
Waycross
Adel
Lakeland
Homerville
Bay Minette
Bainbridge
Cairo
Thomasville
Valdosta
Quitman
Crestview
DeFuniak Springs
Bonifay
Marianna
Statenville
Okefenokee
Swamp
Pensacola
Ft. Walton Beach
U N I T E D S T A T E S
Wright
West Pensacola
Pensacola
Fort Walton Beach
Quincy
Blountstown
Tallahassee
Monticello
Madison
Jasper
Panama City
Panama City
Callaway
Central Gulf Coast
Live Oak
Perry
Mayo
Lake City
F L O R I D A
Port St. Joe
Apalachicola
Cross City
Gainesville
Gulf of Mexico
Inverness

MAP 4:


MISSISSIPPI
ALABAMA
U N I T E D S T A T E S
Mobile
Florida Northwest Coastal Counties
Tallahassee
GA
Jacksonville
Florida Inland Counties
Atlantic Ocean
Florida Atlantic Coastal Counties
Orlando
FLORIDA
Gulf of Mexico
Florida Southwest Coastal Counties
Cape Coral
Coral Springs
Pembroke Pines
Miami
THE BAHAMAS
Florida Keys

Appendix D: Beach Intercept Survey

Introduction

The Florida Survey Research Center at the University of Florida (FSRC) conducted intercept surveys with beach-goers in areas of Florida affected by the 2010 Deepwater Horizon oil spill as part of the "Lost Recreational Use Value" component of the UF "Contingent Valuation & Lost Passive Use: Damages from the Deepwater Oil Spill" Project. This report details this beach intercept survey project.

The objective of the beach intercept survey was to compare survey responses from on-site beach-goers in affected areas of Florida with those obtained via the Internet panel survey (implemented by Knowledge Networks, KN). Thus, the goal of the beach intercept survey was to interview a random sample of beach-goers and pier users that fairly represented the population of those using the beach and piers, speaking to one person per party from those sampled on the beach (under umbrellas and in the water) and on piers, conducting interviews on both non-holiday weekdays and non-holiday weekends, using question language similar to that from the Internet survey.

Survey Methodology

After meeting with the project research team led by Dr. Larkin and our statistical consultant and sampling expert, Dr. Scheaffer, a survey implementation plan was established based on data from three "fly overs" of the study area. The flights were conducted to clearly delineate visitation areas within the 200 miles comprising the 12-county coastal study area, and to establish approximate counts of coastal visitors by area. For all flights, Dr. William L. Huth, ATP, CFII, SEL and MEL was the pilot and Scott Bartell was the videographer. In addition, Pensacola Beach and two areas of Panama City Beach were visited on Saturday, June 25, 2011, at mid-day to obtain counts of umbrellas and occupancy rates. This is necessary for estimated the population of each beach area since the number of people under umbrellas cannot be determined from the fly overs. Information on the three flights is described first, followed by the sampling methodology.

Beach Flights

Flight 1

Flight 1 was conducted on Saturday, June 18, 2011, departing at 10:00 AM and returning at 4:00 PM. Total flight time was 6.6 hours. The aircraft was a Cessna 172 (N427KR). The

flight was conducted at 700-900 feet. On board were three persons (pilot, videographer, and data recorder/co-pilot). Weather was clear, visibility greater than 10 miles, a 20% chance of rain due to thundershowers, and temperatures in excess of 90 degrees F. No weather was encountered. Digital video and still images (every five seconds) were taken covering the area from the Florida/Alabama state line to Waccasaaa Bay just north of Yankeetown. From this flight, it was determined that there is virtually no beach from Alligator Point around the Big Bend area to Yankeetown except for a few very small (less than a mile) segments in a few places. As such, the eastern most coastal region was excluded from future flights and intercept surveys.

Flight 2
Flight 2 was conducted Sunday, June 19, 2011, departing at 11:00 AM and returned at 3:00 PM. Total flight time was 3.6 hours. The flight was flown at an altitude of 600-800 feet, using the same aircraft as the Saturday flight. The weather was the same as the previous day and no adverse weather was encountered. Digital video and still images (every five seconds) of the area were recorded.

Flight 3
Flight 3 was conducted Tuesday, June 28, 2011, departing at 11:00 AM and returning at 3:30 PM, with 4.2 hours of flight time recorded. The weather forecast was the same as it had been for the previous two weekend flights. This flight was conducted entirely at 500-600 feet. The flight was in a Cessna 172 (Skyhawk), N61814. On the flight only still images (every five seconds) were taken with a slight degree of zoom relative to the earlier flights.

Sampling Methodology

The digital images from the beach flights were used to design the sampling plan for the intercept survey. These images show 14 well-defined Panhandle beach areas that are in regular use by beach-goers, with areas ranging from Perdido Beach in the west to Alligator Point in the east. The images were also used to generate counts of umbrellas and people.

There were a total of 386 umbrellas counted at the Panama City Beach sampling location – two high-rise condominiums (four total) separated by a residential area – of which 298 (77%) were occupied with a total of 272 people (0.91 per umbrella). At the Pensacola Beach sampling location – Holiday Inn, Margarittaville, Portofino – a total of 140 umbrellas were counted of which 99 (71%) were occupied by a total of 108 people (1.1 per umbrella). Using this information, we assumed both a 75 percent occupancy rate for umbrellas and one person per occupied umbrella in order to convert umbrellas to visitors for an estimate of total beach and coastal pier visitors (hereafter referred to simply as “beach users”).

The sampling design for interviewing beach users is a stratified random sample using the 14 beaches as strata. In order to provide a small margin of error (around 3% or less) on questions dealing with proportions (e.g., share of visitors that are Florida residents) a sample size of approximately 1,000 persons was selected. This sample size was used for both the weekday survey and the weekend survey, for a total of around 2,000 interviews.

The sample of 1,000 was allocated to the 14 strata proportional to the estimated number of beach users provided from the flight data (Table D-1). Proportional allocation is nearly optimal for minimizing the potential margins of error in the estimates if the variation in data provided by the users is not tremendously different from stratum to stratum.

Within each beach area (stratum), still images from the flight camera, taken at five-second intervals, were considered as clusters of people for sampling purposes. Each image covers about 600 yards of beach, convenient for sampling up to 10 people per sampled image. Within each stratum, an appropriate number of distinct images were then randomly sampled to provide for the required sample size for that particular stratum. The resulting design is shown in Table D-1. Standard intervals within an image were selected by randomly selecting one of five random number charts and then selecting a random integer from the randomly selected random number tables.

Table D-1. Beach intercept sampling plan for Northwest Florida

Area	People (Survey estimate)	Proportion of People to Sample	Number of People to Sample	Number of Images to Sample
Perdido	588	0.03	30	3
Pensacola	1,587	0.08	80	8
Navarre	439	0.02	20	2
Fort Walton	1,158	0.06	60	6
Destin	2,524	0.13	130	13
San Destin	5,308	0.27	260	26
Seaside	568	0.03	30	3
Panama City 1	730	0.04	40	4
Panama City 2	2,016	0.10	100	10
Panama City 3	3,873	0.19	190	19
Mexico	233	0.01	10	1
Cape San Blas	144	0.01	10	1
St. George	662	0.03	30	3
Alligator Point	66	0.00	10	1
Total	19,896	1.00	1,000	100

Note: Adjusted from straight proportional sampling to allow sampling at least one image (10 people) from each beach area.

Within each sampled image (cluster), the 10 people to be interviewed were selected systematically by randomly selecting a person within the first 60 feet and then selected one person at random at approximately 60-foot intervals from the start. The systematic design forces the interviewer to cover the entire length of the cluster, rather than taking all 10 interviews at one or two locations. The initial starting point for an image was always measured from the western boundary of the image. To avoid systematic exclusion of anyone from the boundary of the image to the starting point, the first interview location for an image area was selected by randomly selecting one of five random number charts and then selecting a random integer from the randomly selected random number tables. Following the selection of the first interview location, other interview stops were standardized for a specific beach area using the formulae:

1. $\frac{\text{Number of Completions Sought}}{\text{Number of Beach Images}} = \text{Number of Completions per 600-yard Image}$
2. $\frac{\text{Number of Completions per 600-yard Image}}{600} = \text{Standard Beach Interval}$

This procedure was always followed, even when it would be easier or more reasonable to start from the eastern boundary of an image, to maintain the sampling protocol. Once the survey team began walking a 600-yard image area, they did not stop because of a lack of people in range. Rather, they moved through the randomly selected area before proceeding to the next randomly selected area.

In summary, the sampling design follows these steps:

1. Define strata as beach areas.
2. Proportionally allocate the sample to strata.
3. Randomly sample clusters of people within strata, where clusters are determined by still images.
4. Systematically sample people within clusters.

Intercept Survey Implementation

Survey Instrument

The FSRC developed a survey instrument based on questions from the KN Internet panel survey identified by the lead researcher, Dr. Larkin. The instrument was prepared by the FSRC Research Director, Dr. Johns. Dr. Johns has extensive experience in developing hundreds of survey instruments for in-person, mail, telephone, and web-based surveys.

The FSRC reviewed the draft of the survey instrument with members of the research team and made revisions based on their input. The final draft is included at the end of this document. The intercept survey was completed in a paper format. Three maps were also adapted from the KN Internet panel survey for use with specific questions in the survey. These maps were printed on 8.5x11 inch card stock and laminated and presented to respondents by interviewers to aid in responding to questions 7, 9, and 10. The survey and maps appear at the end of this appendix.

Interviewer Recruitment and Training

Experienced interviewers were recruited from the existing FSRC list of skilled telephone interviewers. A total of six demographically diverse interviewers, four males and two females, were selected to participate. Interviewers were informed that the purpose of the survey was to gather information from tourists concerning their visits to Gulf Coast Beaches.

Interviewers attended a preliminary training session on Tuesday, July 12, 2011. The training session covered basic guidelines, the schedule, the survey instrument, and sampling techniques and the FSRC Research Coordinator discussed the specific health and safety issues involved in on-site interviewing.

The interviewers reviewed the survey instrument and "Tally Sheet" (used to record the number of completions and refusals per beach section by interviewer). During this session, interviewers were required to read through the survey instrument with the supervisor to confirm that they understood its contents, and could read and understand each written word and properly conduct interviews. Interviewers were also shown a map of the research area and individual image areas. The Director of Field Research, Dr. Lowman, introduced the interviewers to the basic sampling for this project, explaining to interviewers that this project does not include convenience sampling, but rather random sampling. The sampling process was specified, with specific emphasis on the objective of avoiding systematically excluding any potential respondents who might be found in an area close to the image boundary. Interviewers were briefed concerning respondent eligibility (individuals over the age of 18 who were closest to an interviewer when the team reached a specific distance from the starting and subsequent image area points).

Interviewers were trained to approach eligible groups of individuals and determine with whom to complete a survey by asking for the person in the group who is over 18 and has the next birthday (a standard technique for randomizing selection within groups). The training session stressed that when encountering groups of individuals who are together,

only one individual in the group should be interviewed and that during any specific stop each interviewer should complete only one interview.

Interviewers were also instructed in the procedure for physically moving across the beach area – they were to line-up at equal distances across the beach from the water line to the end of the beach, and then they were to proceed to the designated stop point as a group in order to obtain the maximum coverage of the beach. Dr. Lowman explained to the interviewers that after each stop, interviewers would reform their line parallel to spot where the "farthest" interviewer conducted his or her interview.

Training continued on Thursday, July 14, 2001, during the van ride to the first beach location, Perdido Beach, Florida. During three of those five hours, the information provided during the July 12, 2011 training session was reiterated. Additionally, each interviewer was instructed to silently read and memorize the survey instrument. Following this activity, interviewers read the survey instrument twice aloud during which time they received individual instruction and feedback from the FSRC Director of Field Research. During this period, any issues, such as pronunciation, were addressed. Following the reading exercise, interviewers completed a role-playing exercise in which interviewers partnered in completing practice surveys. They were critiqued and required to repeat the exercise until Dr. Lowman approved the individual interviewer's interview delivery. Health, safety and operational procedures were again reviewed during the drive to Florida's panhandle.

All interviewers were given a list detailing the agenda beginning July 14,, 2011, and their expected rules of conduct during the field interviews. These instructions reminded the crew that they are representing the University of Florida (UF) at all times during the data collection trips, as such they are expected to behave accordingly and remain healthy by being mindful of sleep and the sun. Each interviewer was given a UF cap, name badge, and a bag to keep surveys, pens, etc. in. Interviewers were instructed to submit their completed surveys and Daily Tally Form to Dr. Lowman at the end of each day. Interviewers were encouraged to write down any questions or issues about the surveying that can be discussed with Dr. Lowman and the rest of the team.

Implementation Strategy

Along with recruitment and training of interviewers, the FSRC Research Coordinator compiled a supply list and items were purchased. Each interviewer was given a nylon backpack, clipboard, pens, hanging UF/FSRC nametag, UF cap, business cards to be distributed to respondents with questions, copies of the survey, laminated copies of the maps used during the survey, and copies of the tally form.

The Director of Field Research was given additional supplies: a box of 2000 surveys, a laptop with record spreadsheets loaded, an AT&T Go Phone, tally sheets, six cans of sunscreen, a first aid kit, snacks, a rolling cooler, four flats of water, extra nametags, hotel reservation confirmation forms, tax exemption forms, preaddressed Fed Ex air-bills, a binder containing images of each beach by section, and AAA maps of the area. An Excel workbook of record spreadsheets was created containing worksheets for: the daily record of completed surveys by beach/weekday and weekend; the daily hours worked by each interviewer; the daily interviewer stats-completed surveys, refusals and ineligibles; the Field Director's daily log including area worked, weather and notes; and, a copy of the interviewers' Daily Tally Form.

Field Implementation and Monitoring

Field implementation of the surveys began on Thursday, July 14, 2011 and concluded on September 5, 2011. Interviewers were continuously monitored on every beach, at each beach image location, and on every stop. The FSRC Director of Field Research personally identified the image area border, confirmed the starting point with the interviewers and then "stepped-off" the distance between each stopping point. Every day, at every interview location, interviewers were closely monitored by the FSRC Director of Field Research who went to each interviewer and monitored their interviews. Any significant issues were addressed and corrected immediately (if necessary, even while the interview was in process).

Lesser issues, such as omitting the UF IRB telephone number, were addressed immediately following the interview. At the conclusion of each day in the field, interviewers were asked to provide feedback and receive feedback concerning individual and group performance.

Except when prohibited by environmental conditions, interview forms were reviewed immediately upon finishing a beach image area. If problems were found they were corrected prior to leaving the beach area. All completed surveys were again reviewed at the close of the day and were then shipped to FSRC offices via FedEx.

Fed Ex packages of completed surveys were received by the Research Coordinator and counted and checked by the Survey Supervisor. The Research Coordinator counted and checked the surveys a second time. The counts of the surveys received were entered by beach or pier and weekend / weekday on the "Surveys Received Form." The checked surveys were given to the data entry specialist. The data entry specialist used a copy of the coded survey instrument, including a list of code numbers for the each beach and pier, to facilitate proper data entry.

Notes were made on any issues that became apparent during the checking process. Surveys with questions were tagged and put aside to discuss with interviewers upon their return. For example, the issue of how to enter responses for respondents who live and/or work at the beach was addressed and notes were made for distribution to interviewers. The interviewers met with the Research Coordinator before their departure for the second trip on Friday, July 22, 2011. Issues on tagged surveys were addressed with individual interviewers. Techniques for clarifying responses during the interview process were reviewed with all interviewers. Notes on how to best record data on survey instruments were distributed and reviewed

Data Analysis

At the conclusion of the data collection phase, all data from completed beach intercept surveys were entered into an ASCII database that was imported into a SAS database for analysis. A total of 2,546 surveys were included in the final beach intercept dataset.

Knowledge Networks (KN) provided an Excel dataset containing Internet survey responses from 1,843 people who visited the Northwest Florida coast within the past two years. This dataset was also imported into a SAS database for analysis. All KN Internet data were weighted using the "weight" variable they included in this dataset.

The following analysis compares the results of the beach intercept survey with the results of the KN Internet survey. Frequency distributions (shown in percentages) are included for each question. Summary statistics (mean, standard deviation, and median) are presented for continuous variables, and t-tests for differences of means have been conducted as appropriate. Note that all t-tests required elimination of outlying values to normalize distributions and as such, should be viewed with caution.

The following results are presented in the order in which the questions appeared in the beach intercept survey.

Quality of Area for Saltwater-Related Activities

The first question in the beach intercept survey asked:

- "Overall, how would you rate the quality of this area for saltwater-related activities, like going to the beach? Would you rate the area as Excellent, Very Good, Good, Fair, or Poor?"
- KN: "How would you rate the overall quality of the area you visited most recently in Northwest Florida for your primary [saltwater] activity?"

Results are summarized in Table D-2. About four-fifths (82.1%) of the beach intercept sample rated the quality of the area in which they were interviewed as either "excellent" or "very good," while more than two-thirds (69.8%) of the KN Internet sample rated the area of NW Florida they most recently visited as either "excellent" or "good" for their primary saltwater activity. The median response for the beach intercept sample is "excellent" and the median response for the KN Internet sample is "very good."

Table D-2. Quality of area for saltwater-related activities by survey

Rating	Beach Intercept (N=2,544)	Internet (N=1,843)
Excellent	57.9%	30.8%
Very Good	24.2%	39.0%
Good	13.9%	22.6%
Fair	2.3%	6.0%
Poor	1.4%	0.7%
Don't know/Refused	0.4%	0.8%

Day Trip or Overnight Trip

The next question in the beach intercept survey asked:

- "Are you at the beach today on a 'day trip' with plans to return home today, or are you spending one or more nights away from home?"
- KN: "Thinking about your most recent trip to the Northwest region of Florida that involved saltwater related activities, how many total nights did you spend away from home?" [Note: Response value "0 (Day Trip)]

About 15 percent (15.2%) of the beach intercept sample indicated that they were on a "day trip," compared to 11.7 percent of the KN Internet sample that indicated they were on a "day trip." The KN responses were converted to a dichotomous variable ("yes" responses were set equal to 1 for a day trip and 0 if overnight). Comparison of the proportions, via a t-test, shows that the proportion of respondents who were on a day trip is statistically different for those in the beach intercept sample than those in the Internet sample (t-value = 3.475, $p < 0.0005$).

Overnight Trip: Number of Nights Spent Away from Home

The next question in the beach intercept survey asked those respondents who indicated that they were on an overnight trip:

- "How many total nights will you spend away from home on this visit? [INT: Include nights spent traveling even if they were in other states/regions.]"

- KN: “Thinking about your most recent trip to the Northwest region of Florida that involved saltwater related activities, how many total nights did you spend away from home?”

In both surveys, the vast majority of overnight visitors spent one to seven nights in the Northwest Florida study region on their current trip; 91.0 percent for the beach intercepts and 86.6 percent for the Internet respondents. Among all respondents, less than one percent indicated they were staying more than 48 nights during this trip. The mean and median results for those reporting up to 47 nights appear in Table D-3. The mean number of nights spent away from home on overnight trips for those in the beach intercept sample was 5.74 and the median was 6, while the mean number of nights for those in the KN Internet sample was 4.92 with a median of 4.

Table D-3. Statistics on the number of nights spent away from home by survey

Statistic	Beach Intercept (N=2,132)	Internet (N=1,599)
Mean (standard deviation)	5.74 (3.56)	4.92 (3.66)
Median	6	4

For the statistical comparisons, the data from both surveys were normalized by limiting the range of data considered to include observations that indicated stays of less than 15 nights. Comparison of the means, via t-test, shows that the mean number of nights in a trip for overnight visitors is statistically different for those in the beach intercept sample than those in the Internet sample, among those staying from 1 to 14 nights (t-value = 22.54, $p < 0.0001$).

Overnight Trip: Type of Lodging

The next question in the beach intercept survey asked those respondents who indicated that they were on an overnight trip:

- “What type of lodging or accommodations are you primarily using during this trip? [Mark ONE response.]”
- KN: “What type of lodging did you primarily use [on the most recent trip you took to Northwest Florida that involved saltwater related activities]?”

The results appear in Table D-4. More than three-quarters (77.6%) of those in the beach intercept sample who were on an overnight trip indicated that they were using a bed and breakfast; a rented condominium, apartment, or house; or, a timeshare as their primary lodging during their trip, compared to 30 percent of the KN internet sample. More than

two-fifths (44.1%) of those in the KN internet sample who were on an overnight trip[52] indicated that they used a hotel or motel as their primary lodging on the most recent trip you took to Northwest Florida that involved saltwater-related activities compared to 15 percent of the beach intercept sample.

Table D-4. Primary type of lodging for overnight trip by survey

Type of lodging	Beach Intercept (N=2,146)	Internet (N=1,606)
Hotel or Motel	15.0%	44.1%
B&B, rented accommodations, or time share	77.6%	32.3%
Campground	1.3%	4.5%
Stayed with friends or family	4.2%	15.3%
Other	2.0%	2.5%
Refused	0.0%	1.4%

Number of Adults on Trip

The next question in the beach intercept survey asked respondents:

- "How many adults (age 18 or older), including yourself, are on this visit?"
- KN: "How many adults (at least 18 years of age at the time of the trip) including yourself went on this trip [the most recent trip you took to Northwest Florida that involved saltwater related activities]?"

In both surveys, the vast majority of parties included four or fewer adults; 71.6 percent for the beach intercepts and 87.3 percent for the Internet respondents. Among all respondents, less than three percent indicated there were more than 12 adults on their trip. The mean and median results for those reporting up to 12 adults on the trip appear in Table D-5.

Table D-5. Summary statistics for number of adults on trip by survey

Statistic	Beach Intercept (N=2,468)	Internet (N=1,811)
Mean (standard deviation)	3.63 (2.24)	2.87 (1.75)
Median	3	2

For the statistical comparisons, the data from both surveys were normalized by limiting the range of data considered to include observations that indicated parties with fewer than seven adults. Comparison of the means, via t-test, shows that the mean number of adults

[52] KN asked this question of all respondents who had taken a trip to NW Florida in the past two years, even those who indicated that their most recent trip was a "day trip." For this analysis, we have filtered the responses to only those in the KN sample who indicated they were staying overnight and provided a response (N=1,606).

(age 18 and older) on the trip is statistically different for those in the beach intercept sample than those in the Internet sample, among those traveling with fewer than seven adults (t-value = 28.07, $p < 0.0001$).

Number of Children on Trip

The next question in the beach intercept survey asked respondents:

- "And, how many children (under age 18) are on this visit?"
- KN: "How many children (aged 17 or younger) went on this trip [the most recent trip you took to Northwest Florida that involved saltwater related activities]?"

In both surveys, the vast majority of parties did not include any children; 42.3 percent for the beach intercepts and 52.3 percent for the Internet respondents. Among all respondents, less than one percent indicated there were more than 12 children on their trip. The mode number of children was zero for both surveys. The mean and median results for those reporting up to 12 children appear in Table D-6.

Table D-6. Summary statistics for number of children on trip by survey

Statistic	Beach Intercept (N=2,524)	Internet (N=1,755)
Mean (standard deviation)	1.63 (1.99)	1.06 (1.53)
Median	1	0

For the statistical comparisons, the data from both surveys were normalized by limiting the range of data considered to include observations that indicated parties with one to five children (i.e., parties that included travel with children). Comparison of the means, via t-test, shows that the mean number of children (under age 18) is statistically different for those in the beach intercept sample than those in the Internet sample, among those traveling with one to five children (t-value = 19.06, $p < 0.0001$).

Number of Trips to Gulf Coast Areas since June 2010

The next question in the beach intercept survey asked respondents:

- "Since June 1, 2010, how many trips with saltwater-related activities (beach going, boating, fishing, etc.) have you made to the following Gulf Coast areas?" [INT: Show map for Question 7. If 'none,' enter zero]
- KN: "How many of these trips [to the Northwest Florida region that included saltwater related activities since June 1, 2010] included visits to each of these areas since June 1, 2010?"

The results are presented in Table D-7 by sub-region for responses ranging from zero through 48, the maximum number of individual trips that could be reported on the Internet survey via a pull-down menu. In general, for each survey, the mean number of trips was lowest in the eastern most areas and highest in the western most areas of the study region.

Table D-7. Summary statistics of the number of trips by sub-region and survey

Sub-region and statistics	Beach Intercept	Internet
A. Pensacola		
N	2,522	1,443
Mean (standard deviation)	0.49 (1.97)	0.93 (2.55)
Median	0	0
B. Ft. Walton and Destin		
N	2,439	1,443
Mean (standard deviation)	1.47 (3.56)	0.80 (1.96)
Median	1	0
C. Panama City		
N	2,470	1,453
Mean (standard deviation)	1.21 (3.77)	0.76 (2.06)
Median	0	0
D. Port St. Joe		
N	2,537	1,300
Mean (standard deviation)	0.20 (1.42)	0.21 (1.02)
Median	0	0
E. Central Gulf Coast		
N	2,535	1,395
Mean (standard deviation)	0.31 (2.19)	0.67 (1.99)
Median	0	0

The mean number of trips to Pensacola for those in the beach intercept sample was 0.49 and the median was zero, while the mean number of trips to Pensacola for those in the KN Internet sample was 0.93 with a median of zero. The mean number of trips to the Ft. Walton/Destin area for those in the beach intercept sample was 1.47 and the median was one, while the mean number of trips to the Ft. Walton/Destin area for those in the KN internet sample was 0.80 with a median of zero. The mean number of trips to the Panama City area for those in the beach intercept sample was 1.21 and the median was zero, while the mean number of trips to the Panama City area for those in the KN internet sample was 0.76 with a median of zero. The mean number of trips to the Port St. Joe area for those in the beach intercept sample was 0.20 and the median was zero, while the mean number of trips to the Port St. Joe area for those in the KN internet sample was 0.21 with a median of zero. The mean number of trips to the Central Gulf Coast area for those in the beach intercept sample was 0.31 and the median was 0, while the mean number of trips to the Central Gulf Coast area for those in the KN internet sample was 0.67 with a median of zero.

Cancelled Coastal Trips due to the Oil Spill in April 2010

The next question in the beach intercept survey asked respondents:

- "Did you cancel any coastal trips to the US Gulf Coast or South Atlantic due to the oil spill that started in April 2010 and continued through last summer that you did NOT replace with one of the trips we just discussed?"
- KN: "Did you cancel any coastal trips to the US Gulf of Mexico due to the oil spill that started in April 2010 and continued through last summer?"

Nearly 10 percent (9.7%) of the beach intercept sample indicated that they cancelled a coastal trip to the Gulf of Mexico as a result of the *BP/Deepwater Horizon* oil spill, compared to 17.0 percent of the KN Internet sample. Comparison of the proportions, via a t-test, shows that the proportion of respondents who cancelled a trip due to the oil spill is statistically different for those in the beach intercept sample than those in the Internet sample (t-value = -6.99, $p < 0.0001$).

Number of Cancelled Trips

Those respondents who indicated that they cancelled trips to the Gulf Coast because of the oil spill were next asked:

- "How many trips did you cancel to each of the following Gulf Coast or South Atlantic areas?" [INT: Show map for Question 9. If 'none,' enter zero]
- KN: "How many trips did you cancel to each area?"

The results are presented in Table D-8 by state for responses ranging from zero through 48, the maximum number of individual trips that could be reported on the Internet survey via a pull-down menu. In general, for each survey, the mean number of trips cancelled was lowest in the eastern most areas and highest in the western most areas of the study region, not notable the Northwest Florida study region.

The mean number of trips to Northwest Florida cancelled by those in the beach intercept sample who indicated cancelling trips to the Gulf Coast was 2.17 and the median was one, while the mean number of trips to Northwest Florida cancelled by those in the KN Internet sample who reported cancelling trips was 0.95 with a median of zero.

Table D-8. Summary statistics of the number of cancelled trips by state and survey

State and statistics	Beach Intercept	Internet
A. Texas		
N	246	267
Mean (standard deviation)	0.008 (0.09)	0.29 (1.64)
Median	0	0
B. Louisiana		
N	246	266
Mean (standard deviation)	0.17 (1.95)	0.63 (2.36)
Median	0	0
C. Mississippi		
N	246	267
Mean (standard deviation)	0.03 (0.28)	0.62 (2.74)
Median	0	0
D. Alabama		
N	246	266
Mean (standard deviation)	0.16 (0.89)	0.37 (1.30)
Median	0	0
E. Northwest Florida		
N	246	265
Mean (standard deviation)	2.17 (4.40)	0.95 (3.36)
Median	1	0
F. Southwest Florida		
N	246	266
Mean (standard deviation)	0.11 (0.41)	0.16 (0.64)
Median	0	0
G. Florida Keys		
N	246	266
Mean (standard deviation)	0.04 (0.22)	0.39 (1.44)
Median	1	0

A comparison of these results indicates that the Internet survey produced conservative estimates of the number of cancelled trips to Northwest Florida, which were used in the empirical analysis and generation of lost recreational use value estimates. These results may also be indicating that the data from the beach intercepts is characterized by avidity bias. Avidity bias results from the fact that those who stay in a system longer (the avid ones) are more likely to be sampled in simple random sampling. Statisticians often call this "length bias," a more general term. Alternatively, the beach intercept data likely reflects endogenous stratification – a concept that "like attracts like, or that those who know each other or like each other because they may be from the same family, neighborhood or ethnic group tend to self-stratify - but the systematic sampling across long beach areas (which is how we sampled the beaches) should minimize this effect.

If we look at the means among those reporting cancelling trips to the Northwest region, we find that the average number of cancelled trips is just slightly higher among the beach intercepts (i.e., 2.67 trips versus 2.62 cancelled trips on average in the Internet survey) (Table D-9).

Table D-9. Summary statistics of the number of cancelled trips to Northwest for those reporting cancelling at least one trip

Statistic	Beach Intercept	Internet
N	196	106
Mean (standard deviation)	2.67 (4.74)	2.62 (4.87)
Median	1	1

For a statistical comparison, the data from both surveys were normalized by limiting the range of data considered to include observations that indicated cancelling between one and four trips to Northwest Florida. A comparison of the means, via a t-test, indicates that the mean number of trips cancelled to Northwest Florida was not statistically different between those in the beach intercept sample and those in the Internet sample among those who reported cancelling at least one trip but no more than four trips (t-value = -0.08, p = 0.9340). Thus, within the range of trips being considered, both surveys produced the same number of average reported cancelled trips to the study region from a statistical perspective; the data from the Internet survey reflected slightly lower (more conservative) estimates of cancelled trips, which was the basis for the information used to generate the empirical estimates of lost recreational use value.

Number of Planned Trips to the Gulf Coast and South Atlantic over Next 12 Months

Respondents were next asked:

- "About how many trips involving saltwater-related activities (beach going, boating, fishing, etc.) do you plan to take during the next 12 months to the Gulf Coast or South Atlantic (for example: Florida, Georgia, Alabama, Louisiana, Mississippi, Texas, South Carolina, North Carolina)?" [INT: Show map for Question 10. If 'none,' enter zero]
- KN: "About how many trips involving saltwater related activities do you plan to take during the next 12 months to the US Gulf of Mexico or South Atlantic (i.e., Texas, Louisiana, Mississippi, Alabama, Florida, Georgia, South Carolina, or North Carolina)?"

The mode response for the intercept and Internet surveys were one (36.6%) and zero (45.1%), respectively. In total, the majority of respondents planned to take fewer than three trips to the Southern coastal region of the U.S. in the coming year (i.e., 63.1% of

intercepts and 85.8% of Internet respondents). The summary statistics are presented in Table D-10. The mean number of planned trips to the Gulf Coast or South Atlantic in the next 12 months for those in the beach intercept sample was 3.33 and the median was two, while the mean number of planned trips for those in the KN Internet sample was 1.32 with a median of one.

Table D-10. Summary statistics for number of planned trips to the U.S. Southeastern coast by survey

Statistic	Beach Intercept (N=2,308)	Internet (N=1,823)
Mean (standard deviation)	3.33 (5.53)	1.32 (2.44)
Median	2	1

Sample Demographics

The final questions in the beach intercept survey asked the respondents a series of demographic questions:

- "What is your home zip code?"
- "In what year were you born?"
- Gender

The comparison of these characteristics between surveys is summarized in Table D-11. To facilitate the comparison, the zip code has been converted to home state and the year of birth has been converted to age. In addition, only the states included in the market area used for the Internet survey are listed.

The comparison by state of home residence reveals that 89.9 percent of respondents to the beach intercept survey were from the 13-state market area defined for the Internet survey.

A comparison of the distribution of respondents by age indicates that 30.8 percent and 36.6 percent of beach intercept and KN Internet respondents, respectively, were between the ages of 18 and 35. At the other extreme, 18.3 percent and 29.5 percent of respondents were at least 55 years of age in the intercept and Internet surveys, respectively.

The majority of respondents to both surveys were female; 53.5 percent and 52.0 percent of the beach intercept and KN Internet survey respondents, respectively, were female.

Table D-11. Summary demographic information on respondents by survey

Statistic	Beach Intercept (N=2,523-2,542)	Internet Past visitors (N=1,842-1,843)
Home State (in alphabetical order):		
Alabama	13.9%	11.1%
Arkansas	3.2%	1.1%
Florida	14.3%	27.0%
Georgia	15.2%	13.0%
Illinois	1.7%	5.1%
Indiana	1.9%	4.2%
Kentucky	3.1%	4.9%
Louisiana	9.6%	6.7%
Mississippi	3.0%	3.8%
Missouri	3.8%	2.4%
Ohio	2.3%	4.7%
Tennessee	9.6%	7.6%
Texas	8.3%	8.3%
Other	8.6%	0.0%
Don't know/Refused	1.5%	0.0%
Age of Respondent:		
18 to 24 years	11.5%	13.7%
25 to 34 years	19.3%	22.9%
35 to 44 years	24.2%	18.4%
45 to 54 years	24.3%	15.6%
55 to 64 years	13.7%	17.1%
65 years or older	4.6%	12.4%
Refused	2.5%	0.0%
Gender of Respondent:		
Male	46.5%	48.0%
Female	53.5%	52.0%

Beach Intercept Questionnaire

Hello. My name is _____ and I am an interviewer from the Florida Survey Research Center at the University of Florida. University researchers are conducting a survey of visitors to Gulf Coast beaches.

The information that you provide in this survey will be used to create a profile of visits to the Gulf Coast. Your answers to this survey are anonymous. You will not be compensated for your participation and no risks are anticipated. You do not have to answer any questions that you do not wish to answer, and you may stop this interview at any time. The survey should only take about 5 minutes or less to complete. If you have any questions about this survey, please contact Michael Scicchitano at the UF FSRC, 866-392-3475. If you have any questions about your rights as a research participant, please contact the UF IRB offices at 352-392-0433 and refer to Protocol #2010-U-1245.

First, we have a few questions about your visit to the Gulf Coast today.

1. Overall, how would you rate the quality of this area for saltwater-related activities, like going to the beach? Would you rate the area as Excellent, Very Good, Good, Fair, or Poor?

O	Excellent	O	Very Good	O	Good
O	Fair	O	Poor	O	Don't know / Refuse

2. Are you at the beach today on a "day trip" with plans to return home today, or are you spending one or more nights away from home?

O	Day trip	O	Staying over night	O	Refuse

[Go to Question 5, below box] **[……Go to Question 3 ……]**

3. How many total nights will you spend away from home on this visit? **[INT: Include nights spent traveling even if they were in other states/regions.]**

#	O	Don't know	O	Refuse

4. What type of lodging or accommodations are you primarily using during this trip**? [INT: Mark ONE response.]**

O	Hotel or motel
O	Bed & Breakfast; Rented condo / apartment / house; Timeshare
O	Campground
O	Stayed with family / friends
O	Other (describe):
O	Refuse

5. How many adults (age 18 or older), including yourself, are on this visit?	# O	DK/R
6. And, how many children (under age 18) are on this visit?	# O	DK/R

Next, we have a few questions about other trips you may have made or planned for the Gulf Coast.

To be clear, a "trip" includes day trips where you return home on the same day you leave, as well as longer trips where you spend one or more nights away from home.

Since June 1, 2010, how many trips with saltwater-related activities (beach going, boating, fishing, etc.) have you made to the following Gulf Coast areas? **[INT: Show map. If "none," enter zero.]**

A. Pensacola area	#	O	Don't know / Refuse
B. Ft. Walton / Destin area	#	O	Don't know / Refuse
C. Panama City area	#	O	Don't know / Refuse
D. Port St. Joe area	#	O	Don't know / Refuse
E. Central Gulf Coast area	#	O	Don't know / Refuse

7. Did you cancel any coastal trips to the US Gulf Coast or South Atlantic due to the oil spill that started in April 2010 and continued through last summer that you did NOT replace with one of the trips we just discussed?

O	Yes	O	No	O	Don't know	O	Refuse

[……..GO TO QUESTION 10……]

↓

IF YES (canceled trips)			
8. How many trips did you cancel to each of the following Gulf Coast or South Atlantic areas? **[INT: Show map. If "none," enter zero.]**			
A. Texas			
B. Louisiana	#	O	Don't know / Refuse
C. Mississippi	#	O	Don't know / Refuse
D. Alabama	#	O	Don't know / Refuse
E. Northwest Florida	#	O	Don't know / Refuse
F. Southwest Florida	#	O	Don't know / Refuse
G. Florida Keys	#	O	Don't know / Refuse

9. About how many trips involving saltwater-related activities (beach going, boating, fishing, etc.) do you plan to take during the next 12 months to the Gulf Coast or South Atlantic (for example: Florida, Georgia, Alabama, Louisiana, Mississippi, Texas, South Carolina, North Carolina)? **[INT: Show map.]**

O	None	#	O	Don't know	O	Refuse	

Finally, we just have a few questions to be sure our sample is representative.

10. What is your <u>home</u> zip code?	*Zip:*		O	Don't know
11. In what year were you born?	*Year:*		O	Refuse
12. [INT: Don't ask – just code] Gender	O	Female	O	Male

That completes our survey. Thank you very much for your time & participation.

INT: _____ Location: _____ Date/Time: _____

Question 7

A. Pensacola area
B. Ft. Walton / Destin area
C. Panama City area
D. Port St. Joe area
E. Central Gulf Coast area

Question 9

A. Texas
B. Louisiana
C. Mississippi
D. Alabama
E. Norwest Florida
F. Southwest Florida
G. Florida Keys

Question 10

Gulf Coast / South Atlantic Region

(Florida, Georgia, Alabama, Louisiana, Mississippi, Texas, South Carolina, North Carolina)

Supplement: Study 1 Focus Groups and Mall Intercept

Overview

This supplement contains the procedures and materials used to (1) recruit focus group participants, (2) conduct a mall intercept and six focus groups, and (3) the results of these efforts – all for the purpose of developing a valid questionnaire to measure lost passive use value experienced by Floridians due to the *BP/Deepwater Horizon* oil spill.

The scripts used to recruit focus group participants are presented first, followed by the corresponding data from candidate respondents. This data were used to select 8 to 12 participants that resembled the demographics of the local area.

Next, the materials for the focus groups and intercepts are presented in chronological order. This information is preceded by background information related to the oil spill that was assembled for the moderator and a copy of the informed consent document that participants signed before the focus group began. The background information was developed in response to a request from the moderator for more detailed information on certain topics. The moderator had this information on had in order to answer more pointed questions from focus group participants, usually on terminology used in the script. When possible, the moderator was instructed to wait until the conclusion of the focus group to answer in more detail so as not to present additional information to participants that might affect how they answered the questions. The materials for each focus group contain two types of information: (1) a detailed script for the moderator that contains what he (Mr. Messina) was to say, including questions to ask, and when to handout and collect any pages that may have contained written responses; and (2) copies of various handouts, maps, cards, and or worksheets provided to participants. The mall intercepts, which were conducted between the initial and final sets of focus groups, consisted of a single handout and concluded with a personal interview; as such, the materials are brief and there are no transcripts to report. The final section of this supplement contains the transcript from each focus group presented in chronological order.

Focus Group Recruitment and Results

This section contains the script used by telephone interviewers to recruit participants for the initial and final focus groups (Tables S-1 and S-2, respectively). It also contains tables summarizing the responses to the questions of the potential participants in the initial (Table S-3) and final focus groups (Tables S-3 and S-4). A comparison of these responses was used to assemble, as close as possible given the limited number of participants, a group of people that were representative of the metro area where each focus group was conducted.

Initial Focus Group Recruitment Protocol

Table S-1. CATI script used to recruit participants for the initial focus group

Hello, my name is %name and I'm calling from the Florida Survey Research Center at the University of Florida. We are working with researchers at the University to conduct a focus group with residents in the [CITY] area about protecting wildlife and recreation in Florida. The focus group will meet on [DAY], [DATE] and we're currently recruiting participants. The focus group will take about two hours to complete and participants will be given $50 for their time. Participants must be at least 18 years of age. Are you or anyone in your household interested in hearing more about this research project?

1. May I confirm that you are a resident of the [CITY] area? [YNDR1289]
   If NO, DON'T KNOW, or REFUSED-terminate delete: "Thank you for your time. Have a nice evening (day)."
   If YES:
   The focus group is being held in order for Florida residents in the [LOCATION INFO IN GENERAL] area to discuss how closures of fishing areas and beaches and loss of wildlife in the Gulf affect you. The focus group will be held at the [LOCATION], on [DAY], [DATE] at [TIME]. Refreshments will be served and all participants will receive a $50 payment at the close of the session.
2. Are you interested in being considered for participation in this focus group? [YNDR1289]
   If NO, DON'T KNOW, or REFUSED-delete: "Thank you for your time. Have a nice evening (day)."
   If Yes: Thank you. I'll need to ask you a few demographic questions so that we can be sure that groups are representative.
3. Gender [INT: Don't ask; just record]
   Male=1 Female=2
4. In what year were you born? [INT: Verify year after you have typed it] [YEARDR89, 1916-1993]
1. Do you reside at least 7 months a year in Florida? [YNDR1289]
2. Do you own your own business? [YNDR1289]
   IF YES:
   6A. What kind of business is it?
   a) hotel
   b) restaurant
   c) fishing
   d) retail
   e) other
   f) Don't know
   g) Refused
   IF Q6A = (e) other
   6A1. Other [text,120]
   6B. Does 50% or more of your business revenue come from people who travel from outside the [LOCATION INFO IN GENERAL] area? [YNDR1289]
   If NO:

Table S-1. CATI script used to recruit participants for the initial focus group

6C. What is your current employment status?
a) fulltime
b) part-time
c) retired
d) unemployed
e) student
f) other
g) Don't know
h) Refused

IF Q6C = (a) Full or (b) Part time:

6D. In which of the following employment categories do you work?
a) hotel
b) restaurant
c) fishing
d) retail
e) health services
f) other
g) Don't know
h) Refused

6E. Are you in a management position? [YNDR1289]

3. Did you or anyone in your household help with cleanup efforts in the Gulf after the oil spill last year? [YNDR1289]

If YES:

7A. If so, were you/they compensated for that work? [YNDR1289]

4. Is your family's total yearly income before taxes $30,000 or less, or more than $30,000?
a) $30,000 or less
b) More than $30,000
c) Don't know
d) Refused
5. Just to be sure we have a representative sample, would you please tell me your race or ethnicity?
a) Black/African American
b) White
c) Asian/Pacific Islander
d) Native American
e) Other
f) Refused
6. Do you consider yourself to be Hispanic? [YNDR1289]

If you are selected to participate in this focus group study, someone from the University of Florida will call you and a confirmation letter containing details such as time, date, location, and map will be mailed (or emailed) to you.

7. To facilitate that follow-up, can you please tell me your name and mailing or email address? (INT: check spelling and type email address into address if they prefer) [address]

Table S-1. CATI script used to recruit participants for the initial focus group

8. Is @phone@ the best telephone number to reach you? [YNDR1289]
   If NO:
   12A. What number would you prefer that we use to contact you? (INT: Do not include hyphens or parentheses) [NUMDR89,10]

Thank you, that completes the first part of the process. If you are selected to participate, you will receive a call within 7 business days.

Final Focus Group Recruitment Protocol

Table S-2. CATI script used to recruit participants to the final focus group

Hello, my name is %name and I'm calling from the Florida Survey Research Center at the University of Florida. We are working with researchers at the University of Florida to conduct focus groups with residents in your area. If selected, an adult member of your household would receive $50 to participate on the evening of [DATE]. This discussion is about public policy issues and is for research purposes only; no sales presentation or sales attempts of any kind will be made. Are you an adult that is willing to hear more and answer some questions to be selected?

If NO, is there another person that is available in your household?
If NO, terminate.

1. Are you a resident of Florida and reside at least 7 months a year in Florida? [YNDR]
2. Has anyone in your household participated in any of the following activities in the last year? [YNDR]
   2a. Building a house for an organization such as Habitat for Humanity
   2b. Participating in a group effort to clean up a park or area of the city
   2c. Participate in cleanup efforts in the Gulf after the oil spill
   2d. Volunteer time at a pet rescue organization
   2e. Volunteer to coach or assist with a children's sports team
   2f. Volunteer time at a hospital, nursing home, or hospice type center
3. Do you own your own business? [YNDR]
   If YES:
   3a. Does 50% of your business or more come from tourism?
4. What is your current employment status? Are you fulltime, part-time, retired, unemployed, a student, or other?
   IF " fulltime" or "part-time":
   4a. In which of the following employment categories do you work? Is it in the hotel or restaurant sector, fishing, retail, health services, or other?

Next we're going to ask some questions to be sure we have a representative sample.

5. Gender [Don't ask; just record]: [Male, Female]
6. In what year were you born? [text]
7. Would you please tell me your race or ethnicity? Are you Black/African American,

Table S-2. CATI script used to recruit participants to the final focus group

Caucasian, Asian/Pacific Islander, Native American, or Other? [answer, or R]

8. Do you consider yourself to be Hispanic? [YNDR]
9. Is your family's total yearly income before taxes $30,000 or less, or more than $30,000?
   [$30,000 or less; More than $30,000; DK; R]

As a part of this research, we are conducting a small group discussion on [DATE] at [TIME]. This discussion group will include 10 other individuals like yourself, and will be held at [LOCATION INFO IN GENERAL]. The meeting will last no more than 90 minutes, and as a token of appreciation for your participation, we will pay you $50 at the end of the session.

Would you consider joining this group?

____ Yes ..... (CONTINUE)
____ No..... (THANK AND TERMINATE)

If you are selected to participate in this focus group study, someone from the University of Florida will call you and a confirmation letter containing details such as time, date, location, and map will be mailed (or emailed) to you.

To facilitate that follow up, can you please tell me:
Your first name: [text]
Your last name: [text]
Your mailing or email address: [text]
And, can I confirm that your telephone number is @phone@? [YNDR]

IF NO:

What number would you prefer that we use to contact you? [text]

Thank you. That completes the first part of the process. If you are selected to participate, you will receive a call within 7 business days.

Potential Participants in the Initial Focus Groups

Table S-3. Responses to recruitment questions by potential participants in the initial focus groups

	Q3	Q4	Q5	Q6	Q6A	Q6A1	Q6C	Q6D	Q6E	Q7	Q8	Q9	Q10
ID	Gender	Age	Live in FL 7 months of year	Own business	Type	50% tourist	Employ status	Type	Mgmt	Clean-up	HH Income less/more $30,000	Race	Hispanic
Pensacola:													
3	male	23	yes	no			student			no	less	WH	no
55	male	30	yes	no			full	other	no	no	more	WH	no
11	female	37	yes	no			full	health	no	no	more	WH	no
58	male	48	yes	yes	Other	no				no	more	WH	yes
19	male	52	yes	no			part	retail	no	no	more	WH	no
10	female	57	yes	no			unemp			no	more	WH	no
59	female	58	yes	no			unemp			no	more	WH	no
23	male	60	yes	no			part	other	no	no	more	WH	no
33	female	60	yes	no			full	health	no	no	less	WH	no
39	female	74	yes	no			retired			no	less	WH	no
Miami:													
43	male	47	yes	no			full	retail	yes	no	more	other	yes
1	female	48	yes	yes	Rest	no				no	more	AS/PI	no
38	male	51	yes	no			full	other	yes	no	more	WH	no
44	male	67	yes	no			other			no	less	other	no
30	female	73	yes	no			retired			no	less	other	yes

	Q3	Q4	Q5	Q6	Q6A	Q6A1	Q6C	Q6D	Q6E	Q7	Q8	Q9	Q10
ID	Gender	Age	Live in FL 7 months of year	Own business	Type	50% tourist	Employ status	Type	Mgmt	Clean-up	HH Income less/more $30,000	Race	Hispanic
65	male	75	yes	no			retired			no	less	WH	no
12	female	79	yes	no			part	other	no	no	less	WH	no
Tampa:													
19	female	25	yes	no			part	other	no	no	less	WH	no
13	male	34	yes	no			unemp			no	more	WH	no
34	male	38	yes	yes	Other	no				no	more	other	yes
26	male	41	yes	no			Full	other	no	no	more	WH	yes
30	female	43	yes	yes	Other	no				no	less	WH	no
56	female	53	yes	no			full	other	no	yes*	more	WH	no
21	female	60	yes	no			retired			no	less	BL/AA	no
36	male	78	yes	yes	Retail	no				no	more	WH	no

Note: * Indicates participant was not paid for the cleanup.

Potential Participants in the Final Focus Groups

Table S-4. Responses to recruitment questions by potential participants in the Orlando focus group

	Q3	Q4	Q5	Q6	Q6A	Q6A1	Q6C	Q6D	Q6E	Q7	Q8	Q9	Q10
ID	Gender	Age	Live in FL 7 months of year	Own business	Type	50% tourist	Employ status	Type	Mgmt	Clean-up	HH Income less/more $30,000	Race	Hispanic
1	female	27	yes	no			student			no	less	WH	no
29	female	39	yes	yes	retail	no				no	more	WH	yes
12	male	49	yes	no			unemp			no	less	WH	no
6	male	51	yes	no			retired			no	more	WH	no
7	female	52	yes	yes	other	no				no	more	WH	no
9	female	52	yes	no			unemp			no	more	WH	no
3	female	56	yes	no			other			no	less	WH	no
34	male	56	yes	yes	other	no				no	more	WH	no
27	male	66	yes	no			retired			no	more	BL/AA	no

Note: This focus group used the same recruitment protocol as the first three (i.e., "initial" focus groups).

Table S-5. Responses to recruitment questions by potential participants in the Cocoa and Jacksonville focus groups

	Q1	Q2 (participation in activities)						Q3	Q3a	Q4	Q4a	Q5	Q6	Q7	Q8	Q9
ID	Live in FL 7 months of year	a.	b.	c.	d.	e.	f.	Own bus.	50% tour.	Emp status	Type	Gender	Age	Race	Hisp	HH Income < or > $30,000
Cocoa:																
4	yes	no	no	no	no	No	no	no		unemp		female	58	WH	no	more
10	yes	no	no	no	no	No	no	no		other		female	52	WH	no	more
6	yes	no	no	no	no	No	no	no		unemp		female	32	WH	no	less
26	yes	no	no	no	no	No	no	no		retired		female	73	other	no	more
15	yes	no	no	no	no	Yes	no	no		full	other	male	55	WH	no	more
7	yes	no	no	no	no	No	no	no		retired		male	72	WH	no	more
11	yes	no	no	no	no	No	yes	no		retired		male	76	WH	no	more
16	yes	no	no	no	no	No	no	no		retired		male	79	WH	no	more
Orange Park:																
13	yes	no	yes	no	no	No	no	no		unemp		male	28	BL/AA	no	less
7	yes	no	no	no	no	No	yes	no		unemp		female	35	WH	no	more
27	yes	no	no	no	no	No	no	no		unemp		male	55	WH	no	less
23	yes	no	no	no	no	No	no	no		full	other	male	57	WH	Yes	more
28	yes	no	no	no	no	No	no	no		retired		male	62	WH	no	more
25	yes	no	no	no	no	No	no	no		retired		male	66	WH	no	more
5	yes	no	no	no	no	No	no	no		retired		female	73	WH	no	less
24	yes	no	no	no	no	No	no	no		other		male	75	BL/AA	no	RF
12	yes	no	no	no	no	No	no	no		retired		female	87	WH	no	less
3	yes	no	no	no	no	No	no	no		unemp		female	50	WH	no	less

Notes: Question 2c asked whether the participant participated in efforts to clean up the Gulf after the oil spill.

Materials for Moderator

Background Information

What are "protected species"?

Any species under the jurisdiction of NOAA Fisheries Service that is protected by either the Endangered Species Act (ESA) or the Marine Mammal Protection Act (MMPA). This includes threatened and endangered species, candidate species, and all marine mammals. All marine mammals are protected from take (injury or harassment) under the MMPA regardless of status.

Potential Effects of Oil Spills on Marine Mammals

Current information regarding oil spill effects on marine mammals is limited. Marine mammals may have been and may continue to be affected by the oil itself or by activities during the response and recovery phases (e.g., vessel traffic, noise, use of dispersants, seismic surveys around the wellhead, and clean-up activities).

Potential behavioral responses of concern include such things as -

- displacement of animals from prime habitat
- disruption of social structure (e.g., pods, mother-calf pairs)
- changing prey availability and foraging distribution and/or patterns
- changing reproductive behavior/productivity
- changing movement patterns or migration

Potential physical/physiological effects of concern include such things as -

- irritation, inflammation, or necrosis of skin
- chemical burns of skin, eyes, nares, mucous membranes
- inhalation of toxic fumes with potential short- and long-term respiratory effects (e.g., inflammation, pulmonary emphysema, infection)
- ingestion of oil (and dispersants) directly or via contaminated prey (or contaminated vegetation, in the case of manatees), leading to inflammation, ulcers, bleeding, possible damage to liver, kidney, and brain tissues
- stress from presence of vessels, aircraft, noise, handling (animals captured)
- complications of the above may lead to dysfunction of immune and reproductive systems, physiological stress, declining physical condition, and death

Observations of Impacts from Previous Spills and Studies

- The limited information available on the effects of oil exposure on marine mammals from the *Exxon Valdez* oil spill, other oil spills, and a limited number of controlled studies suggests that some marine mammal species may be more vulnerable to exposure to oil than others.

- In addition, the effect of oil on marine mammals depends heavily on the nature of the oil and the type and duration of exposure.
- Cetaceans (whales and dolphins) may be able to detect oil but do not always avoid it.
- The skin of at least some cetaceans appears to be relatively resistant to effects from short-term exposure (hours). The effects of longer exposures are unknown.
- Pulmonary emphysema was a relatively common finding in sea otters exposed to toxic fumes after the *Exxon Valdez* spill.
- Brain lesions were observed in harbor seals examined after the *Exxon Valdez* spill.
- Determining cause of death for marine mammals, particularly for cetaceans, during an oil spill can be difficult. For example, not all animals found dead necessarily died from exposure to oil. Gray whales found after the Santa Barbara spill were initially thought to have died from the spill, but that conclusion was reversed. Similarly, the large number of dead, stranded gray whales observed after the *Exxon Valdez* spill could not be linked to the spill, and the increased observations of strandings have been attributed, at least in part, to the increased search effort associated with the spill.
- Alternatively, not all animals that are exposed and become ill or die are likely to be detected and documented. Two of the killer whale pods occurring in Prince William Sound prior to the *Exxon Valdez* spill declined by 33 and 40 percent after the spill. One of those pods has not reproduced successfully since then and is expected to become extinct. The other pod has not fully recovered but has not continued to decline. Although the cause of death of the whales that disappeared could not be confirmed, the close association of their loss with the spill suggests that the spill was the primary factor.
- Scientists know very little about the possible effects of oil on manatees. They may be particularly vulnerable to ingestion of oil if oil adheres to or otherwise contaminates the shallow-water plants that they depend on for food.
- Scientists know very little about the effects of dispersants on marine mammals.
- Baseline data (i.e., data characterizing the status—defined broadly to include abundance, composition, health and condition of individuals, etc.—of potentially affected populations before a spill occurs or before they encounter oil) are critical for assessing impacts but do not exist for the majority of individual species or stocks.

Deepwater Horizon Oil Spill

The Deepwater Horizon oil spill presents a number of unique challenges, as compared to other spills in U.S. and international waters:

- Amount: The amount of oil that escaped from the Deepwater Horizon wellhead was unprecedented, amounting to approximately 4.9 million barrels (205.8 million gallons) over the course of 86 days. The estimated flow rate at its peak was between 35,000 to 60,000 barrels (1.47 to 2.52 million gallons) a day, which was roughly equal to the amount spilled by the *Exxon Valdez* tanker every week. The spill required a massive response effort involving 13 federal agencies, 5 states, residents

of local communities, volunteers, contractors, expert consultants, non-governmental organizations, and industry.

- Movement: Modeling of oil spill trajectories is normally done based on the movement of surface currents, winds, tides, and factors that affect the ocean surface. However, predicting how the oil from this spill would spread was a challenge for modelers as the source of the release was deep underwater (at the wellhead), large amounts of oil were found to be remaining in the water column, and little information was available regarding how oil travels and weathers at depth.
- Type: The oil being released from the Deepwater Horizon wellhead is a mixture of both Louisiana sweet crude oil and other oil products (methane, ethane, and propane). The actual composition of the oil is a critical determinant of its potential effect on the Gulf ecosystem. Among other things, the composition of oil determines its toxicity, physical characteristics, and the rate that it weathers.
- Dispersants: Up to 15,000 gallons of chemical dispersants were applied daily at the wellhead at the height of the spill, and dispersants also were applied on the surface of the water in the earlier stages of the spill. More than 1.8 million gallons of dispersants were applied over the course of the spill, both at the surface and subsurface. Responders use dispersants to reduce the surface tension of the oil, which means that it is more easily fragmented into smaller particles. Smaller particles have a larger surface-to-volume ratio and are therefore more amenable to degradation by microbes (e.g., bacteria) in the ocean. Fragmented oil also weathers more quickly and is less likely to form large slicks that cover and contaminate shorelines.
- Clean-up and Containment: In addition to the direct effects of oil, clean-up and containment operations also may have affected marine mammals. Clean-up operations include a range of techniques such as containment of oil in booms, skimming of oil at the ocean surface, and in-situ burning. Clean-up operations also involved a large number of vessels and aircraft in coastal and pelagic habitats. The final stages of containment of the well involved seismic surveys of the area around the wellhead to detect leaks from other parts of the well. Clean-up and containment activities had the potential to disturb marine mammals, possibly displacing them from important feeding or reproductive grounds or other important habitat.
- Baseline information: Limited baseline information on the status and health of marine mammals in the Gulf of Mexico may significantly confound before-and-after comparisons needed to determine the full effects of the spill.

Congressional Hearings

Various Senate and House committees have held dozens of hearings on the spill, focused on investigation of the cause of the explosion as well as response efforts. On 10 June 2010, the Marine Mammal Commission testified before the House Subcommittee on Insular Affairs, Oceans, and Wildlife regarding the Deepwater Horizon oil spill and its effects on marine mammals. The Commission's testimony summarized potential short-term and long-term effects, how these effects will be assessed, and the likely impact of oil and gas activities on marine mammals in the Gulf and elsewhere.

The Oil Pollution Act of 1990

Under the Oil Pollution Act "responsible parties," including lessees of offshore facilities, are strictly liable for removal costs and certain damages resulting from a spill, subject to caps on liability. Responsible parties are not liable for the costs of removal or damages if violations are caused solely by an act of God, act of war, or act or omission of a third party.

Oil Production in the Gulf of Mexico

- As of 2009, oil production in the Gulf of Mexico (GOM) accounted for about 90% of all US offshore oil production and 29% of all US oil production, that is, offshore and onshore.
- As of 2009, GOM offshore proven oil reserves accounted for 19% of all US proven oil reserves. Proven oil reserves are those reserves claimed to have a reasonable certainty (normally at least 90% confidence) of being recovered under existing economic and political conditions, with existing technology.
- Oil from offshore wells in the GOM is shipped to refineries in Texas and Louisiana where it is refined into fuels (i.e., gasoline, diesel, heating oil).

EEZ

Every nation controls waters within 200 miles of its coastline unless that area overlaps other nations. The active drilling region in the Gulf of Mexico (MAP 2) is entirely within our 200-mile "Exclusive Economic Zone" or EEZ. The U.S. leases out rights to private companies who drill for oil.

Food Chain

In general, the "food chain" refers to the complex interaction among all species in the ecosystem that begin with small microscopic algae that are eaten by very small organisms that are, in turn, eaten by larger animals and eventually eaten by the largest marine mammals in the oceans.

Nearshore versus Offshore

Nearshore = Estuarine waters to continental shelf edge (0m - 200m).
Offshore = Beyond shelf edge (> 200m).

Scientists?

Team of 11 core P.I.'s; PhDs from universities in Florida (UCF, UWF, UF), Ohio State, Colorado State, and Appalachian State.

Informed Consent Document

CONSENT TO PARTICIPATE

Focus Groups
UF IRB #2010-U-1245

The purpose of this focus group is to obtain information from residents of Florida about how oil spills and associated loss of wildlife and closures of fishing areas and beaches affect you. It will take about an hour and a half to complete our focus group today.

There are no risks or direct benefits to you for participating in this study. At the completion of the focus group you will receive $50.00 for your participation. Your participation is voluntary and you do not have to answer any questions that you do not want to answer. You are free to withdraw from participation in this focus group at any time. Your participation in this focus group will be kept confidential to the extent permitted by law. Your identity will not be disclosed in any reports that are produced from this focus group.

For questions regarding this study you may contact Dr. Mike Scicchitano at the Florida Survey Research Center toll free at 866-392-3475. For questions regarding your rights as a participant in this survey, you may contact the University of Florida's Institutional Review Board at 352-392-0544.

You have been informed about the purpose of the study, your rights, and the fact that your privacy will be protected. You have received a copy of this form. You have been given the opportunity to ask questions before signing, and you have been told that you can ask other questions at any time.

You voluntarily agree to participate in this focus group. By singing this form, you are not waiving any of your legal rights.

_____ _____

Signature of Person Consenting Date

UF UNIVERSITY of FLORIDA
The Foundation for The Gator Nation

FSRC
Florida Survey Research Center

Note: The forms signed by participants contained an IRB stamp indicating it was approved for use through December 17, 2011.

Pensacola Focus Group (February 8, 2011)

Moderator's Script

Welcome and thank you for coming.

1. Find out their name and check it on the form.
2. Have them make a Name Placard for their seat.
3. Pay them and have them sign receipt.

Hello, my name is Bill Messina and this is Mike Scicchitano. I want to welcome you and thank you for coming. We are from the University of Florida. We are here to get your ideas about how oil spills and the associated impact on the environment affect you. We are interested in your opinions and thoughts on the environmental impacts. We are gathering information on awareness, beliefs, and understanding about the effects of oil spills on the quality of Gulf waters.

We are holding meetings like this around the state to get as many opinions as possible – on a variety of effects related to oil spills. This focus group is specifically about how you value the Gulf ecosystem, including a healthy coastal habitat for a variety of fish and animals, including threatened and endangered species - now and for future generations. We want to make sure you understand the focus of this group by summarizing the scope of potential impacts [Flip Chart #1].

FLIP CHART #1
Oil Spill Impacts:

- Jobs
- Tourism (lodging, restaurants, shopping)
- Recreation (fishing, beaches)
- Commercial fishing
- Environment

This focus group will only be discussing the environmental impacts. There are other efforts underway to estimate the other impacts but this one is solely about the environment.

Please note that you will not be putting your names on any of the worksheets we give you and we will not associate names with any comments. What you tell us tonight will help us develop a survey that will go out to thousands of people across Florida, so the information you help us with is really important.

We want you to feel as comfortable as possible. If any word or phrase is unfamiliar to you please feel free to ask for clarification. Also, please feel free to speak up, we want your honest opinions. Feel free to disagree with one another. There are no right or wrong opinions. Don't be afraid to ask questions at any time. We will be sharing some information with you, asking for feedback and discussion, and asking you to react to some ideas. Are there any questions now before we begin?

1. If you were to describe that oil spill to someone who is not familiar with it, what would you tell them?

2. What do you know about how the environment was affected by that oil spill?

3. Was there anything about that oil spill that was different from past U.S. oil spills? [accident vs. negligence vs. natural disaster; explosions vs. tankers running aground, etc.]

4. In your opinion, how did the size of that oil spill compare with previous oil spills near the U.S.?

   [what is their frame of reference?]

5. Can you name any other large oil spills that you remember?

Now we would like to give you some <u>environmental</u> information regarding the Deepwater Horizon oil spill to see if it is clear.

[Handout (Informational Slides) – have read and think about each page then ask Q6 and Q7]

6. Was there any information that seemed unclear?
   [Yes/no? Why?]

7. Was this information neutral?
   [Yes/no? Why?]

Unfortunately, up to now, there have been no measures that stop the occurrence of oil spills. The purpose of the survey that we plan to develop is to determine if there is citizen support <u>for a new program</u> to reduce the impact of future oil spills that still might occur in the Gulf of Mexico, especially near Florida.

8. Are you supportive, in general, of a program designed to reduce the impacts of a future oil spill?

   Yes or no?

For the rest of this focus group, we will be talking about a proposed program [Flip Chart 2]. We ask that you hold your questions for the appropriate discussion.

<u>FLIP CHART #2</u>
Proposed Program:
1) Description
2) Funding
3) Your support (or not)

To help us begin, please read the page and circle any words, phrases, and sentences on that page that are not clear. Put a question mark or write down "What?" by the sentence if it is confusing. Be as specific as possible. If you would like to rewrite any statements to make them clearer that would be great. After you read and comment about the program, we will discuss.

[Worksheet 1]

9. Is there anything unclear about how the program would work?

10. Was there any information that you feel was presented in a way that represents a non-scientific point of view?

11. Does the program seem possible? Do you think that the program would work?

12. Is there anything we could do to improve the program or the description of the program?

Next, we'd like to discuss how programs (like the one we just discussed) should be paid for. We want to know what you think are reasonable ways that citizens of Florida should pay their share of the costs. We've thought of two ways that involve one-time payments, and we will tell you about each, but we will ask if you have other ideas before we switch topics.

[Avoid any discussion of what the 'fair share' would be. We don't know. The point is, all those that would benefit would have to pay something; no willingness-to-pay means no value. Remember, this is paying for protection that is over and above what we require firms to pay for cleanup].

13a. What about a surcharge on federal income taxes where all monies would go to the U.S. Coast Guard?

[surcharge is just a fee, this could be a percentage of income or flat rate per household]

13b. What about a surcharge on property taxes where all monies would go into a trust fund that could only be used by the U.S. Coast Guard for program-related expenditures in Florida?

[How many of you own property in Florida that you pay taxes on? If not all, describe how the property owner would pass along the tax in the form of higher rents]

13c. Other ideas?

Lastly, we'd like for you to read a proposal on program funding. Again, you are welcome to correct or edit any information on the page. After you have read and commented, we will discuss.

[Worksheet 2]

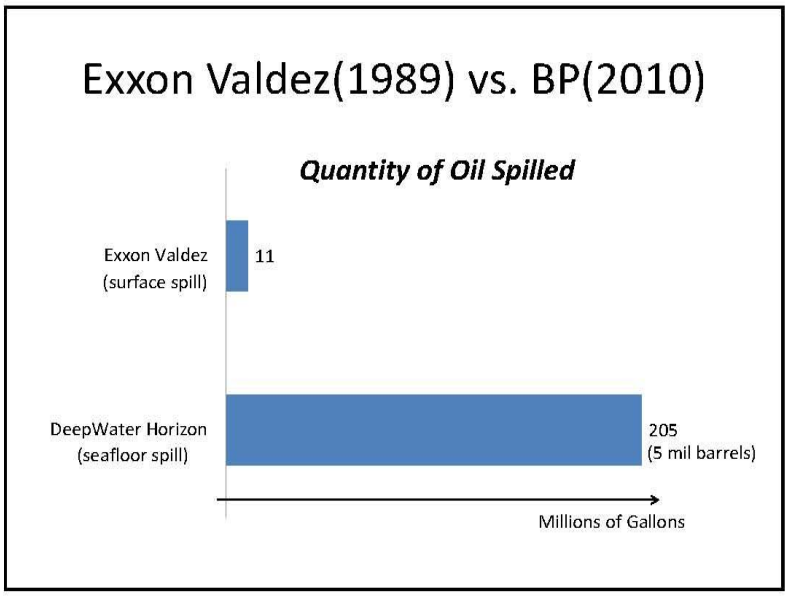
14. To begin, was there any information that you needed or wanted before answering the questions?

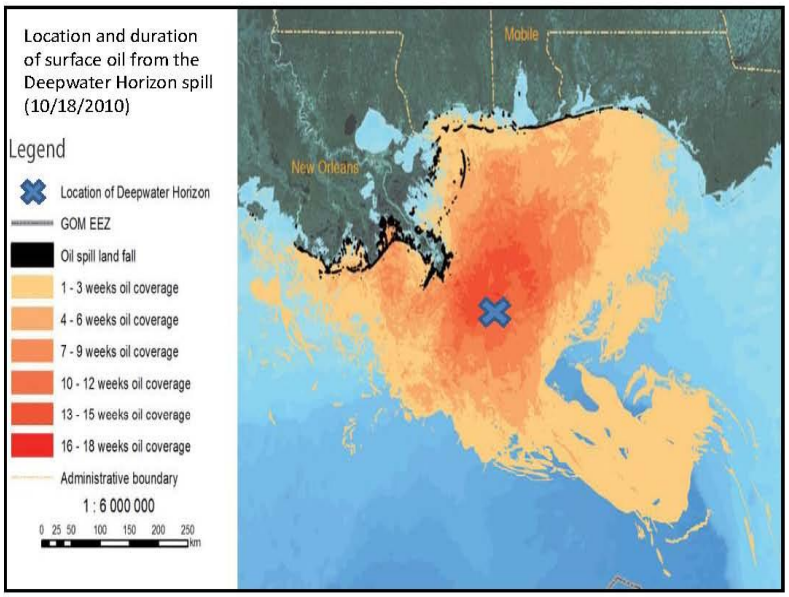
15. How did you feel about being asked to pay for the program?

16. What was the main reason you decided to vote the way you did?

This is the end of the focus group, thank you for participating. We will hang around for a while if you want to give us any additional ideas or suggestions you have. Please feel free to help yourself to the refreshments as you leave.

Handout (Informational Slides)


Exxon Valdez(1989) vs. BP(2010)
Quantity of Oil Spilled
Exxon Valdez
(surface spill)
11
DeepWater Horizon
(seafloor spill)
205
(5 mil barrels)
Millions of Gallons


Location and duration of surface oil from the Deepwater Horizon spill (10/18/2010)
Legend
Location of Deepwater Horizon
GOM EEZ
Oil spill land fall
1 - 3 weeks oil coverage
4 - 6 weeks oil coverage
7 - 9 weeks oil coverage
10 - 12 weeks oil coverage
13 - 15 weeks oil coverage
16 - 18 weeks oil coverage
Administrative boundary
1 : 6 000 000
0 25 50 100 150 200 250
km
Mobile
New Orleans

Effects on Coastal Habitats

- 1,050 miles of shoreline in the Gulf of Mexico was affected by the oil spill.
- These areas consisted of estuaries, coastal wetlands, and beaches.
- Oiled areas can kill vegetation and accelerate erosion, a major ongoing concern in this region.

Effects on the Marine Environment

- Dead and dying coral reefs were discovered on the seafloor near the blown-out well; "almost certainly" from exposure to toxic substances according to marine biologists.
- The oil plumes are breaking down at 1/10 the rate of surface oil.
- A layer of black residue on the seafloor has been traced to the oil spill, suffocating organisms on the seafloor and affecting the food web.

Effects on Animals

- Birds: 6,104 dead and 4,342 oiled collected during cleanup.
- Sea Turtles: 609 dead and 474 oiled collected during cleanup.
- Marine Mammals: 101 dead (99 dolphin, 1 sperm whale, 1 other whale) and 6 oiled collected during cleanup.

Brown Pelican
(off the endangered species list in 2009)

Leatherback
(all 5 Gulf species are endangered)

Bottlenose
(3 main nearshore Gulf species, 7 offshore)

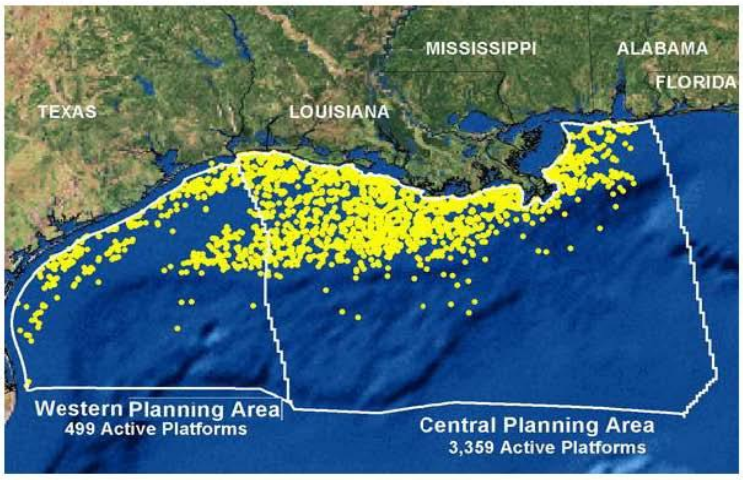
Potential Long-term Effects on Fish

- Fish larvae (the most sensitive stage to oil) are destroyed or damaged by oil (e.g., mutated salmon following the Exxon Valdez spill).
- The Gulf is the spawning ground for many species including Bluefin tuna that were spawning at the time. The stock has fallen 90% since the 1970's.
- During past oil spills in the Gulf, NOAA found deaths to commercially important species including blue crabs, squid, and shrimp that can move up the food chain and cause fatal "megadoses" to fish and mammals.

Why do oil spills occur in the Gulf?

- Hurricanes and tropical storms.
- Quantity of platforms and seaports:
  - The northern Gulf of Mexico has 3,858 active platforms that produced 1.56 million barrels (65 mil gal.) per day in 2009 – 8.4% of the amount consumed in the U.S.
  - The U.S. Gulf Coast has 10 seaports that imported 6 million barrels (252 mil gal.) per day in 2009 – 32% of the amount consumed in the U.S.

Location of Active Platforms



Worksheet 1

Description of a program to reduce the damage from oil spills in the Gulf of Mexico

In order to prevent damage to the area's natural environment from another spill, a new Rapid Oil Spill Detection and Response Program is being proposed. Here's how the program would work:

> Oil detection equipment would be placed at 25-mile intervals 3 to 9 miles from shore (distinction between state and federal waters) around the Gulf. The fixed equipment would be contained in a vertical pipe from the sea floor to the surface with information on oil-related measurements transmitted to satellites every hour.
>
> The data would be monitored by two Coast Guard ships specially designed to immediately address oil spills, including large spills like the Deepwater Horizon. These vessels would be permanently stationed near the oil drilling region in the Northern Gulf and would be able to reach the site of any monitoring station or oil spill in the region within a day.
>
> The ships will carry booms and dispersants to contain surface spills. The ships will also have submersibles and robotic equipment like those used to stop the Deepwater Horizon oil spill. The crew of each vessel will be specially trained in monitoring and interpreting the data and containing and stopping oil spills.
>
> This program, including the two ships specially designed to help stop oil spills and clean up spilled oil, would each require costly equipment to implement and well-paid, well-trained crews to operate.

This program would not prevent damage from a spill anywhere else in the United States or international waters because the monitoring equipment and ships would only stationed in the Gulf of Mexico.

The Oil Pollution Act of 1990 requires any negligent parties to pay for all cleanup activities; that would not change under this program. Responsible parties would still pay for the cleanup. But the capital expenditure and monitoring component of this program would ensure early warning of potential damages and allow authorities to target cleanup efforts efficiently. These activities are in addition to what the law requires of oil companies.

In addition, the monitoring system would be effective at identifying spills resulting underwater that might not be detectable at the surface (e.g., from inactive wells and platforms). The exact location of all inactive wells and platforms is not known because they were abandoned before reporting was required. In addition, since there is no monitoring of inactive wells, leaks are unknown. Due to the high costs of mapping the seafloor due to the size of the region, it is unlikely that all potentially leaking wells will be detected. Even if they are detected, the responsible party will be unknown since they are inactive and not recorded. Thus, this program could identify and prevent damage from spills that have no responsible party or results from a natural disaster.

Worksheet 2

Referendum on the program

Implementing the Rapid Oil Spill Response Program that you evaluated earlier would reduce impacts on wildlife and marine-based recreation in Florida following an oil spill.

For comparison, the following impacts were observed following the Deepwater Horizon spill:

- Oiled coastal areas: 1,050 miles
- Birds killed: 6,000
- Sea turtles killed: 600
- Dolphins killed: 100

If the Program would have been active at the time of the Deepwater Horizon spill, and given the capabilities of each vessel, it is estimated that the following impacts would have been observed:

- Oiled coastal areas: 50 miles of hard to reach or sensitive areas (1,000 miles protected)
- Birds killed: 1,000 in the hard to reach and sensitive areas (5,000 birds saved)
- Sea turtles killed: 50, the average number of deaths annually (550 deaths prevented)
- Dolphins killed: 10, the average number of deaths (90 deaths prevented)

Questions

1. How do you feel about paying for this program in one form or another?

   [We will discuss together]

2. If the program were funded in the way that you would prefer, would you vote for or against the development of a Rapid Oil Spill Response Program if every household would be required to pay a one-time fee of $50?

   For or against?

   Please tell us why you would vote for or against. *We realize there are good reasons to vote either way*. We are interested in knowing why, and what features of the program or payment made you decide to vote the way you did.

   [Why? We will discuss together]

Miami Focus Group (February 16, 2011)

Moderator's Script

Welcome and thank you for coming.

1. Find out their name and check it on the form.
2. Have them make a Name Placard for their seat.
3. Pay them and have them sign receipt.

Hello, my name is Bill Messina and this is Mike Scicchitano. I want to welcome you and thank you for coming. We are from the University of Florida. We are here to get your ideas about how oil spills and the associated impact on the environment affect you. We are interested in your opinions and thoughts on the environmental impacts. We are gathering information on awareness, beliefs, and understanding about the effects of oil spills on the Gulf of Mexico environment.

We are holding meetings like this around the state to get as many opinions as possible – on a variety of effects related to oil spills. This focus group is specifically about how you value the Gulf ecosystem, including a healthy coastal habitat for a variety of fish and animals, including threatened and endangered species - now and for future generations. We want to make sure you understand the focus of this group by summarizing the scope of potential impacts [Flip Chart #1].

FLIP CHART #1
Oil Spill Impacts:

- Jobs
- Tourism (lodging, restaurants, shopping)
- Recreation (fishing, beaches)
- Commercial fishing
- Environment

This focus group will only be discussing the environmental impacts. There are other efforts underway to estimate the other impacts but this one is solely about the environment.

Please note that you will not be putting your names on any of the worksheets we give you and we will not associate names with any comments. What you tell us tonight will help us develop a survey that will go out to thousands of people across Florida, so the information you help us with is really important.

We want you to feel as comfortable as possible. If any word or phrase is unfamiliar to you please feel free to ask for clarification. Also, please feel free to speak up, we want your honest opinions. Feel free to disagree with one another. There are no right or wrong opinions. Don't be afraid to ask questions at any time. We will be sharing some information with you, asking for feedback and discussion, and asking you to react to some ideas. Are there any questions now before we begin?

1. If you were to describe that oil spill to someone who is not familiar with it, what would you tell them?

2. What do you know about how the environment was affected by that oil spill?

3. Was there anything about that oil spill that was different from past U.S. oil spills?

   [accident vs. negligence vs. natural disaster; explosions vs. tankers running aground, etc.]

4. In your opinion, how did the size of that oil spill compare with previous oil spills near the U.S.?

   [what is their frame of reference?]

5. Can you name any other large oil spills that you remember?

Now we would like to give you some <u>environmental</u> information regarding the Deepwater Horizon oil spill to see if it is clear.

[Handout (Informational Slides) – have read and think about each page then ask Q6 and Q7]

6. Was there any information that seemed unclear?

   [Yes/no? Why?]

7. Was this information neutral?

   [Yes/no? Why?]

7b. Was this information new to you?

   [Yes/no? Why?]

Unfortunately, up to now, there have been no measures that stop the occurrence of oil spills. The purpose of the survey that we plan to develop is to determine if there is citizen support <u>for a new program</u> to reduce the impact of future oil spills that still might occur in the Gulf of Mexico, especially near Florida.

8. Are you supportive, in general, of a program designed to reduce the impacts of a future oil spill?

   Yes or no?

For the rest of this focus group, we will be talking about a proposed program [Flip Chart 2]. We ask that you hold your questions for the appropriate discussion.

FLIP CHART #2
Proposed Program:

1) Description
2) Funding
3) Your support (or not)

To help us begin, please read the page and circle any words, phrases, and sentences on that page that are not clear. Put a question mark or write down "What?" by the sentence if it is confusing. Be as specific as possible. If you would like to rewrite any statements to make them clearer that would be great. After you read and comment about the program, we will discuss.

[Worksheet 1]

9. Is there anything unclear about how the program would work?

10. Was there any information that you feel was presented in a way that represents a non-scientific point of view?

11. Does the program seem possible? Do you think that the program would work?

12. Is there anything we could do to improve the program or the description of the program?

Next, we'd like to discuss how programs (like the one we just discussed) should be paid for. We want to know what you think are reasonable ways that citizens of Florida should pay their share of the costs. We've thought of a few ways that involve one-time payments, and we will tell you about each, and one that would increase household costs but we will ask if you have other ideas before we switch topics.

[Avoid any discussion of what the 'fair share' would be. We don't know. The point is, all those that would benefit would have to pay something; no willingness-to-pay means no value. Remember, this is paying for protection that is over and above what we require firms to pay for cleanup].

13a. What about a surcharge (lump sum) on federal income taxes where all monies would go to the U.S. Coast Guard specifically for the Rapid Oil Spill Detection and Response Program?

13b. What about a surcharge on property taxes where all monies would go into a trust fund that could only be used by the U.S. Coast Guard for program-related expenditures in Florida?

13c. What about a surcharge on oil-based fuel products, such as gasoline, diesel, and heating oil?

13d. What about a surcharge on all vehicle registrations?

13e. Other ideas?

Lastly, we'd like for you to read a proposal on program funding. Again, you are welcome to correct or edit any information on the page. After you have read and commented, we will discuss.

[Worksheet 2]

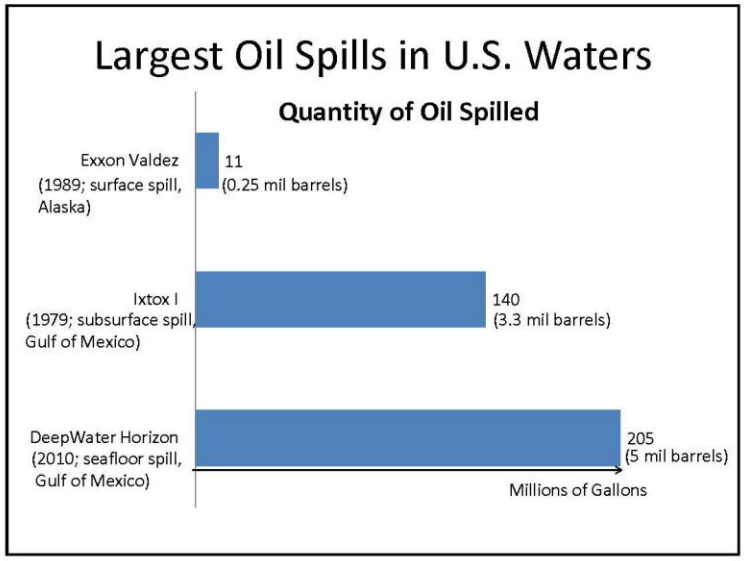
14. To begin, was there any information that you needed or wanted before answering the questions?

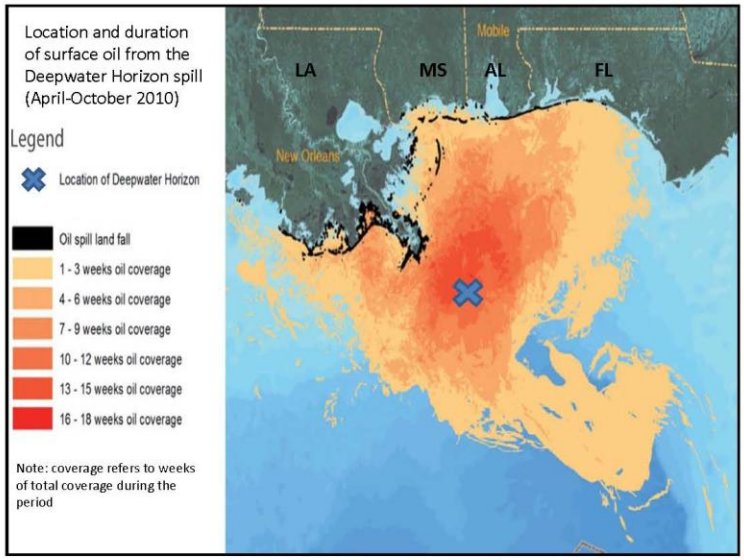
15. How did you feel about being asked to pay for the program?

16. What was the main reason you decided to vote the way you did?

This is the end of the focus group, thank you for participating. We will hang around for a while if you want to give us any additional ideas or suggestions you have. Please feel free to help yourself to the refreshments as you leave.

Handout (Informational Slides)


Largest Oil Spills in U.S. Waters
Quantity of Oil Spilled
Exxon Valdez
(1989; surface spill, Alaska)
11
(0.25 mil barrels)
Ixtox I
(1979; subsurface spill, Gulf of Mexico)
140
(3.3 mil barrels)
DeepWater Horizon
(2010; seafloor spill, Gulf of Mexico)
205
(5 mil barrels)
Millions of Gallons


Location and duration of surface oil from the Deepwater Horizon spill (April-October 2010)
Legend
Location of Deepwater Horizon
Oil spill land fall
1 - 3 weeks oil coverage
4 - 6 weeks oil coverage
7 - 9 weeks oil coverage
10 - 12 weeks oil coverage
13 - 15 weeks oil coverage
16 - 18 weeks oil coverage
Note: coverage refers to weeks of total coverage during the period
Mobile
LA
MS
AL
FL
New Orleans

Effects on Coastal Habitats

- 1,050 miles of shoreline in the Gulf of Mexico was affected by the oil spill.
- These areas consisted of estuaries, coastal wetlands, and beaches.
- Oiled areas can kill vegetation and accelerate erosion, causing further loss of coastal lands.

Effects on the Marine Environment

- Dead and dying coral reefs were discovered on the seafloor near the blown-out well; "almost certainly" from exposure to toxic substances according to marine biologists.
- The subsurface pockets of oil are breaking down at $^{1}/_{10}$ (or 10%) the rate of surface oil.
- A layer of black residue on the seafloor has been traced to the oil spill, which can affect the food web.

Effects on Animals to 11/2/10: 400 species at risk

- Birds: 6,104 dead and 4,342 oiled collected during cleanup.
- Sea Turtles: 609 dead and 474 oiled collected during cleanup.
- Marine Mammals: 101 dead (99 dolphin, 1 sperm whale, 1 other whale) and 6 oiled collected during cleanup.

Brown Pelican
(off the endangered species list in 2009)

Leatherback
(all 5 Gulf species are endangered)

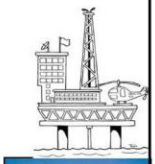
Bottlenose
(3 main nearshore Gulf species, 7 offshore)

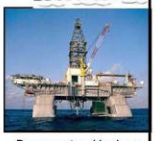
Potential Long-term Effects on Fish

- Fish eggs and larvae (the most sensitive stage) are destroyed or damaged by oil and dispersants.
- Following the Exxon Valdez spill, damage to fish stocks were not observed for 6 years (e.g., mutated salmon).
- The Gulf is the spawning ground for many species including Bluefin tuna, whose population is only 10% of historic levels, that were spawning at the time.
- Several commercially important species may not die but can hold increasing concentrations of oil that will move up the food chain and potentially cause fatal "megadoses" to larger animals.

Contributing factors to Gulf oil spills

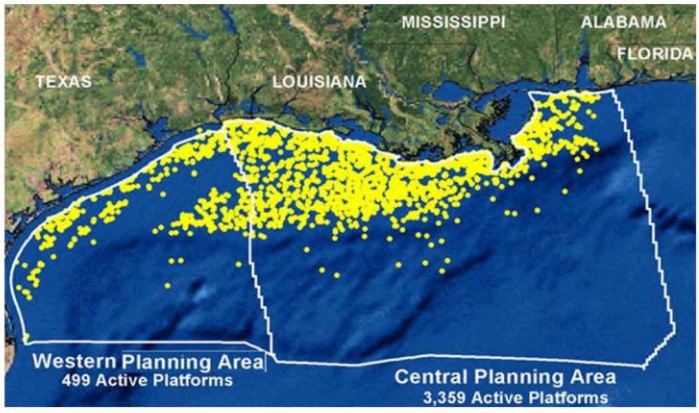
- Hurricanes and tropical storms.
- Human error.
- Quantity and location of platforms and seaports:
  - The northern Gulf of Mexico has 3,858 active platforms that produce 1.5 million barrels (65 mil gal.)/day
  - The U.S. Gulf Coast has 10 seaports that import 6 million barrels (252 mil gal.)/day





Deepwater Horizon oil platform/rig

Location of "Active" Platforms



Note: 163 spills of > 50 barrels from 2001-1010

Worksheet 1

Description of a program to reduce the damage from oil spills in the Gulf of Mexico

In order to reduce damage to the area's natural environment from another large spill, a new Rapid Oil Spill Detection and Response Program is being proposed. Here's how the program would work:

> Oil detection equipment would be placed at 25-mile intervals in state waters (3 to 9 miles from shore) around the Gulf. The equipment would be contained in a fixed vertical structure from the sea floor to the surface with oil- and dispersant measurements at different depths transmitted to satellites every hour.
>
> The data would be monitored by two Coast Guard ships specially designed to immediately address oil spills, including large spills like the Deepwater Horizon. These vessels would be permanently stationed near the oil drilling region in the Northern Gulf and would be able to reach the site of any monitoring station or oil spill in the region within a day.
>
> The ships will carry a variety of equipment designed to address several different types of oil spills. Using information learned from the Deepwater Horizon oil spill, it is anticipated that the ships will carry booms and dispersants to contain surface spills and submersibles and robotic equipment to address subsurface spills. The crew of each vessel will be specially trained in monitoring and interpreting the data and containing and stopping oil spills.
>
> This program, including the two ships specially designed to help stop oil spills and clean up spilled oil, would each require costly equipment to implement and well-paid, well-trained crews to operate.

This program would not prevent damage from a spill anywhere else in the United States or international waters because the monitoring equipment and ships would only stationed in the Gulf of Mexico. The Oil Pollution Act of 1990 requires companies to employ safeguards and maintain their equipment but if found negligent, they are required to pay for all cleanup activities; that would not change under this program. Responsible parties would still pay for the cleanup. But the capital expenditure and monitoring component of this program would ensure early warning of potential damages and allow authorities to target cleanup efforts efficiently. These activities are in addition to what the law requires of oil companies.

What this program would do, in addition to being able to stop the spill and commence cleanup much faster than occurred with the Deepwater Horizon, would be to identify the presence of subsurface oil (including at concentrations not visible to the naked eye). This is important since without such a system only visible surface oil will be required to be removed. The monitoring program will also provide baseline measures to help in assessing the levels of cleanup from any future oil spills.

Worksheet 2

Referendum on the program

Implementing the Rapid Oil Spill Response Program that you evaluated earlier would reduce impacts on the environment following an oil spill.

For comparison, the following impacts were observed following the Deepwater Horizon spill:

- Oiled coastal areas: 1,050 miles
- Birds killed: 6,000
- Sea turtles killed: 600
- Dolphins killed: 100

If the Program would have been active at the time of the Deepwater Horizon spill, and given the capabilities of each vessel, it is estimated that the impacts on the following key environmental measures would have been observed:

- Oiled coastal areas: 50 miles of hard to reach or sensitive areas (1,000 miles protected)
- Birds killed: 1,000 in the hard to reach and sensitive areas (5,000 birds saved)
- Sea turtles killed: 50, the average number of deaths annually (550 deaths prevented)
- Dolphins killed: 10, the average number of deaths (90 deaths prevented)

Questions

1. How do you feel about paying for this program in one form or another?

   [We will discuss together]

2. The establishment and 10-year maintenance cost of the program is estimated at $50 per U.S. taxpayer. At the end of 10 years, the program would be re-evaluated. Would you vote for or against the development of a Rapid Oil Spill Response Program if it would cost you a one-time fee of $50?

   For or against?

   Please tell us why you would vote for or against. *We realize there are good reasons to vote either way*. We are interested in knowing why, and what features of the program or payment made you decide to vote the way you did.

   [Why? We will discuss together]

Tampa Focus Group (February 23, 2011)

Moderator's Script

Welcome and thank you for coming.

1. Find out their name and check it on the form.
2. Have them make a Name Placard for their seat.
3. Pay them and have them sign receipt.

Hello, my name is Bill Messina and this is Mike Scicchitano. I want to welcome you and thank you for coming. We are from the University of Florida. We are here to get your ideas about how oil spills and the associated impact on the environment affect you. We are interested in your opinions and thoughts on the environmental impacts. We are gathering information on awareness, beliefs, and understanding about the effects of oil spills on the Gulf of Mexico environment, specifically the effects on the Florida Gulf Coast (including the first 9 miles from shore)

We are holding meetings like this around the state to get as many opinions as possible – on a variety of effects related to oil spills. This focus group is specifically about how you value the Florida Gulf ecosystem, including a healthy coastal habitat for a variety of fish and animals, including threatened and endangered species - now and for future generations. We want to make sure you understand the focus of this group by summarizing the scope of potential impacts [Flip Chart #1].

<u>FLIP CHART #1</u>
Oil Spill Impacts:

- Jobs
- Tourism (lodging, restaurants, shopping)
- Recreation (fishing, beaches)
- Commercial fishing
- Environment

This focus group will only be discussing the environmental impacts on the Florida gulf coast and Florida's coastal waters. There are other efforts underway to estimate the other impacts but this one is solely about the environment.

Please note that you will not be putting your names on any of the worksheets we give you and we will not associate names with any comments. What you tell us tonight will help us develop a survey that will go out to thousands of people across Florida, so the information you help us with is really important.

We want you to feel as comfortable as possible. If any word or phrase is unfamiliar to you please feel free to ask for clarification. Also, please feel free to speak up, we want your honest opinions. Feel free to disagree with one another. There are no right or wrong <u>opinions</u>. Don't be afraid to ask questions at any time. We will be sharing some information

with you, asking for feedback and discussion, and asking you to react to some ideas. Are there any questions now before we begin?

1. If you were to describe that oil spill to someone who is not familiar with it, what would you tell them?

2. What do you know about how the environment was affected by that oil spill? What about the effects on Florida's Gulf Coast?

3. Was there anything about that oil spill that was different from past U.S. oil spills?

   [accident vs. negligence vs. natural disaster; explosions vs. tankers running aground, etc.]

4. In your opinion, how did the size of that oil spill compare with previous oil spills near the U.S.?

   [what is their frame of reference?]

5. Can you name any other large oil spills that you remember? Any that had a larger impact on Florida?

Now we would like to give you some <u>environmental</u> information regarding the Deepwater Horizon oil spill to see if it is clear.

[Handout (Informational Slides) – have read and think about each page then ask Q6 and Q7]

6. Was there any information that seemed unclear?

   [Yes/no? Why?]

7. Was this information neutral?

   [Yes/no? Why?]

7b. Was this information new to you?

   [Yes/no? Why?]

Unfortunately, up to now, there have been no measures that stop the occurrence of oil spills. The purpose of the survey that we plan to develop is to determine if there is citizen support <u>for a new program</u> to reduce the impact of future oil spills on Florida's gulf coast

8. Are you supportive, in general, of a program designed to reduce the impacts of another large future oil spill on Florida's Gulf Coast?

   Yes or no?

For the rest of this focus group, we will be talking about a proposed program [Flip Chart 2]. We ask that you hold your questions for the appropriate discussion.

FLIP CHART #2
Proposed Program:
1) Description
2) Funding
3) Your support (or not)

To help us begin, please read the page and circle any words, phrases, and sentences on that page that are not clear. Put a question mark or write down "What?" by the sentence if it is confusing. Be as specific as possible. If you would like to rewrite any statements to make them clearer that would be great. After you read and comment about the program, we will discuss.

[Worksheet 1]

9. Is there anything unclear about how the program would work?

10. Was there any information that you feel was presented in a way that represents a non-scientific point of view?

11. Does the program seem possible? Do you think that the program would work?

12. Is there anything we could do to improve the program or the description of the program?

Next, we'd like to discuss how programs (like the one we just discussed) should be paid for. We want to know what you think are reasonable ways that citizens of Florida should pay for the cost to establish the program. We've thought of three ways that involve one-time payments. The ongoing maintenance fees would be paid by companies that are currently drilling in the Gulf. We will tell you about each and will ask if you have other ideas before we switch topics.

13a. What about a surcharge on property taxes where all monies would go into a trust fund that could only be used to pay the U.S. Coast Guard for program related expenses?

13b. What about a state surcharge on oil-based fuel products such as gasoline, diesel, and heating oil?

13c. What about a surcharge on all vehicle registrations in the state of Florida?

13d. Other ideas?

Lastly, we'd like for you to read a proposal on program implementation and funding. Again, you are welcome to correct or edit any information on the page. After you have read and commented, we will discuss.

[Worksheet 2]

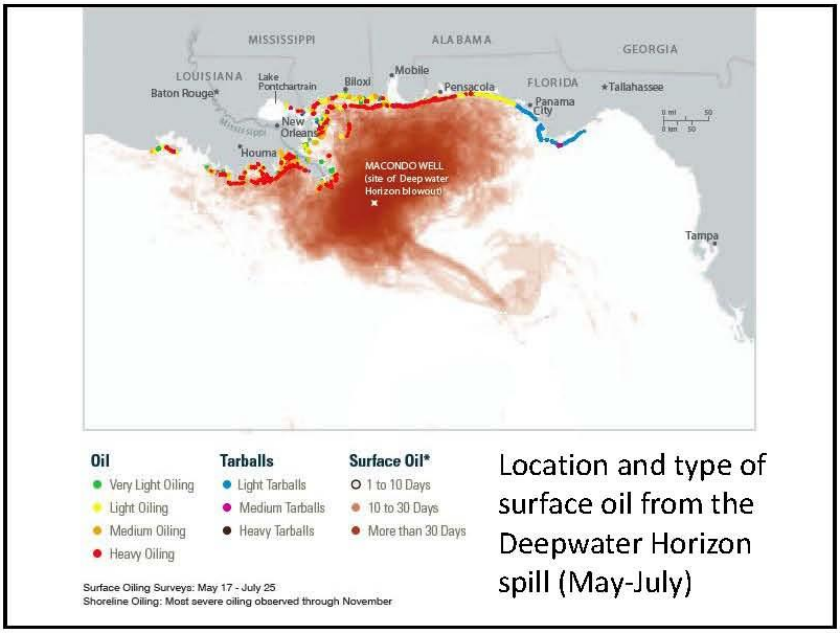
14. To begin, was there any information that you needed or wanted before answering the questions?

15. How did you feel about being asked to pay for the program?

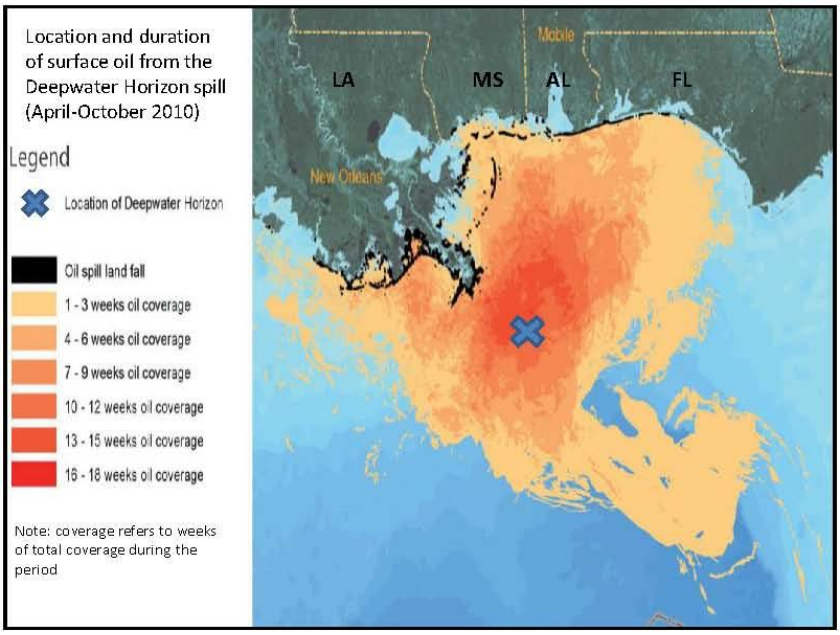
16. What was the main reason you decided to vote the way you did?

This is the end of the focus group, thank you for participating. We will hang around for a while if you want to give us any additional ideas or suggestions you have. Please feel free to help yourself to the refreshments as you leave.

Handout (Informational Slides)



Location and type of surface oil from the Deepwater Horizon spill (May-July)



Effects on Coastal Habitats

- 93 miles of Florida's shoreline was affected by the oil spill.
- This shoreline consisted of estuaries, coastal wetlands, and beaches.
- Oiled areas can kill vegetation and accelerate erosion, causing further loss of coastal lands.

Effects on Florida Animals to Nov. 2, 2010: 400 species at risk

- Birds: 953 dead and 492 oiled collected during cleanup.
- Sea Turtles: 69 dead and 4 oiled collected during cleanup.
- Marine Mammals: 3 dead and 1 oiled collected during cleanup.

Brown Pelican
(off the endangered species list in 2009)

Leatherback
(all 5 Gulf species are endangered)

Bottlenose
(3 main nearshore Gulf species, 7 offshore)

Concerns over Potential Long-term Effects

- Subsurface pockets of oil are breaking down at $^{1}/_{10}$ (or 10%) the rate of surface oil.
- Fish eggs and larvae (the most sensitive stage) are destroyed or damaged by oil and dispersants.
- Following the Exxon Valdez spill, damage to fish stocks were not observed for 6 years (e.g., mutated salmon).
- Several commercially important species may not die but can hold increasing concentrations of oil that will move up the food chain and potentially cause fatal "megadoses" to larger animals.

Location of "Active" Platforms

Note: 163 spills of > 50 barrels from 2001-1010

Worksheet 1

Description of a program to reduce the damage from another large oil spill in the Gulf of Mexico

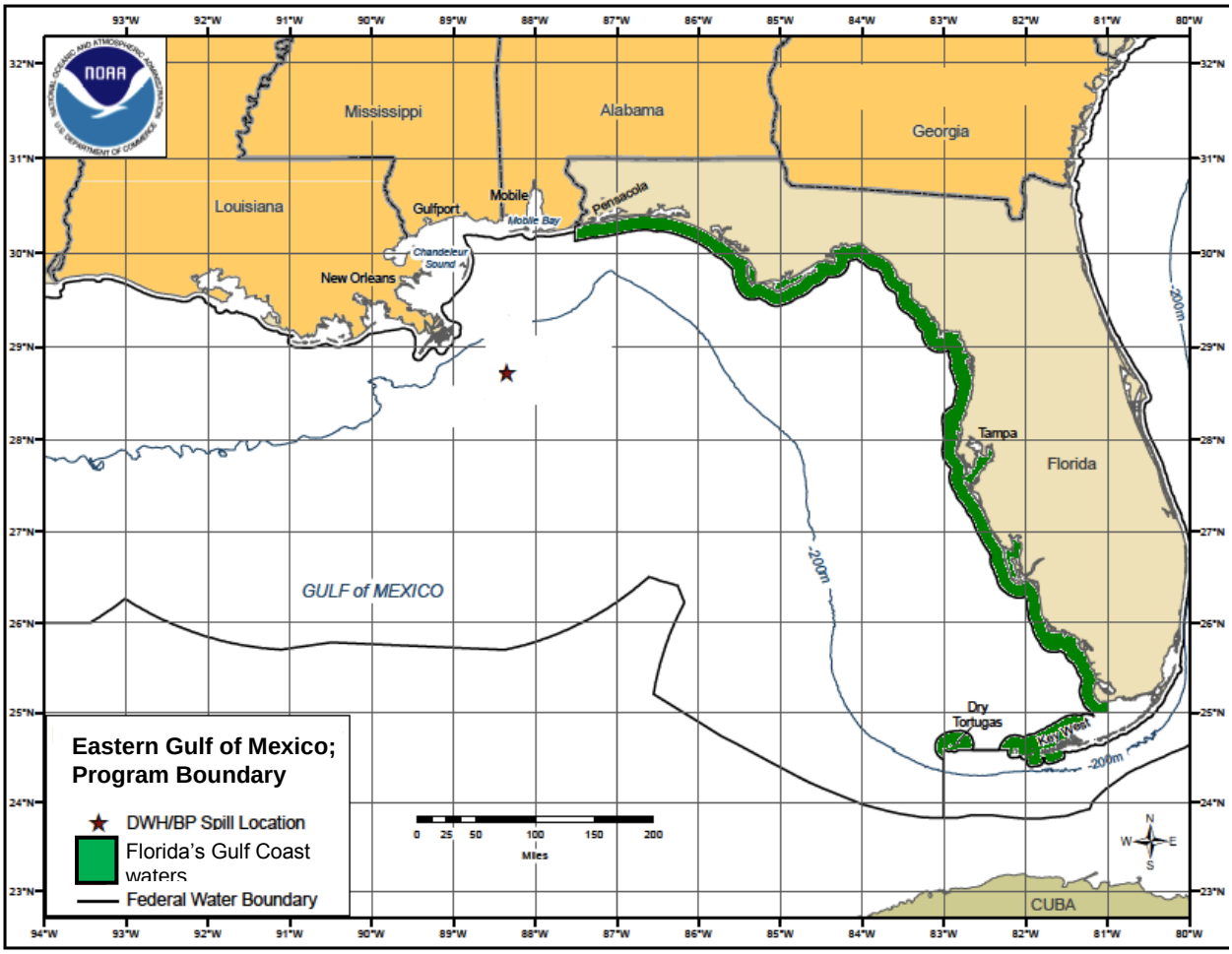
In order to reduce damage to the Florida's natural environment from another large spill, a new Rapid Oil Spill Detection and Response Program is being proposed. Here's how the program would work:

> Oil detection equipment would be placed at 25-mile intervals along Florida's Gulf coast and 9 miles from shore (boundary between state and federal waters; see map on next page). The equipment would be contained in a fixed vertical structure from the sea floor to the surface with oil and dispersant measurements taken at different depths and transmitted to satellites every hour.
>
> The data would be monitored by two U.S. Coast Guard ships specifically designed to immediately address another large spill like the Deepwater Horizon. These vessels would be permanently stationed near Florida's Gulf Coast and would be able to reach any monitoring station or oil spill in the region within a day.
>
> The ships will carry a variety of equipment designed to address several different sources of spilled oil. Using information learned from the Deepwater Horizon oil spill, it is anticipated that the ships will carry booms, dispersants, and oil skimmers to contain surface spills and submersibles and robotic equipment to address subsurface spills.
>
> This program, including the two ships specifically designed to help stop oil spills and clean up spilled oil, would each require costly equipment to implement and well-paid, well-trained crews to operate.

This program would not prevent damage from a spill anywhere else in the United States or international waters because the monitoring and oil removal equipment would be for the sole purpose of protecting State of Florida waters in the Gulf of Mexico. The Oil Pollution Act of 1990 requires companies to employ safeguards and maintain their equipment but if found negligent, they are required to pay for all cleanup activities; that would not change under this program. Responsible parties would still pay for and reimburse for all cleanup costs. But the capital expenditure and monitoring component of this program would provide an insurance policy from the early warning of potential damages and allow the Coast Guard to target cleanup efforts efficiently. These activities are in addition to what the law requires of oil companies.

This program would be able to prevent spills from reaching Florida's Gulf Coast and commence cleanup of Florida waters much faster than occurred with the Deepwater Horizon. The monitoring program will provide baseline measures that will to help in assessing the levels of cleanup that are needed from any future oil spill. In addition, the monitoring equipment would be used to identify the presence of subsurface oil (including

at concentrations not visible to the naked eye). This is important since without such a system only visible surface oil will be required to be removed.



Worksheet 2

Referendum on the program

Implementing the Rapid Oil Spill Response Program that you evaluated earlier would reduce impacts on Florida's Gulf Coast following another large oil spill.

For comparison, the Deepwater Horizon spill caused the following impacts in Florida:

- Florida oiled coastal areas: At least 93 miles
- Birds killed (Florida only): 953
- Sea turtles killed (Florida only): 69
- Dolphins killed (Florida only): 3

If the Program would have been active at the time of the Deepwater Horizon spill, and given the capabilities of the oil detection and response equipment, it is estimated that the impacts on the following key environmental measures would have been observed:

- Florida oiled coastal areas: 0 miles (100% effective)
- Birds killed (Florida only): 95 (90% effective)
- Sea turtles killed (Florida only): 7 (90% effective)
- Dolphins killed (Florida only): 0 (100% effective)

Questions

1. How do you feel about paying for this program in one form or another?

   [We will discuss together]

2. In order to implement the program, the majority of Florida voters would have to vote in favor of it.
3. Would you vote for or against the development of a Rapid Oil Spill Response Program if it would cost you a one-time fee of $50? Please note that the ongoing maintenance costs would be paid for by the active oil drilling companies in the Gulf of Mexico.

   For or against?

   Please tell us why you would vote for or against. *We realize there are good reasons to vote either way*. We are interested in knowing why, and what features of the program or payment made you decide to vote the way you did.

   [Why? We will discuss together]

Ocala Mall Intercept (March 19, 2011)

Overview

The intercept survey was conducted from approximately 10am to 3pm on Saturday, March 23rd, 2011, at the Paddock Mall in Ocala, Florida (www.paddockmall.com). This supplement contains the revised informed consent document that was signed by all participants and the materials. The informed consent document (next page) was signed before the participants were handed the materials to begin. The materials for this event (three pages following the consent form) consisted of a description of two hypothetical programs (A and B) and a summary sheet that compared these programs. Respondents were asked to read the information about the two programs and a summary and then proceed to an interviewer to discuss their answers to the questions on the final page.

Revised Informed Consent Document

CONSENT TO PARTICIPATE

Intercept Survey
UF IRB #2010-U-1245

The purpose of this survey is to obtain information from residents of Florida about two proposed federal programs that could make oil drilling in the Gulf of Mexico safer for the environment. These programs seek to minimize the ***environmental*** damage of another oil spill similar to the Deepwater Horizon of last April. There are other research efforts underway to examine the impact on the economy (tourism, jobs), health, and recreation. This research is only about the environmental impact.

I'd like to give you a two-page handout to read about these two programs and then have you answer a couple of questions from our research assistants. It will take about 15 minutes to complete. You must be at least 18 years old to participate. At the completion of the survey you will receive a $10.00 Paddock Mall gift card for your participation.

There are no risks to you for participating in this study. Your participation is voluntary and you do not have to answer any questions that you do not want to answer. You may stop the survey at any time. Your participation in this survey will be kept confidential to the extent permitted by law. Your identity will not be disclosed in any reports that are produced from this study.

You have been informed about the purpose of the study, your rights, and the fact that your privacy will be protected. You have received a copy of this form. You have been given the opportunity to ask questions anytime. By completing the interview, you voluntarily agree to participate. For questions regarding this study you may contact Dr. Mike Scicchitano at the Florida Survey Research Center toll free at 866-392-3475. For questions regarding your rights as a participant in this survey, you may contact the University of Florida's Institutional Review Board at 352-392-0544

_____ _____

Signature of Person Consenting Date

UF UNIVERSITY of FLORIDA
The Foundation for The Gator Nation

FSRC Florida Survey Research Center

Note: The forms signed by participants contained an IRB stamp indicating it was approved for use through June 29, 2012.

Program A

Program Description

Objective: Reduce the damage from another large oil spill in the Gulf of Mexico

A new two part federal program is being proposed. Part 1 would require additional equipment and procedures during the drilling process. Part 2 would establish a new Oil Spill Rapid Response program. Here's how the program would work:

1a. Require new blowout preventer technology. All Gulf of Mexico oil drilling rigs would be required to use new, state-of-the-art equipment designed to prevent oil spills should something go wrong in the drilling process. Each piece of equipment would have two backups that would be automatically triggered if needed in the event of an emergency.

1b. Require relief wells. Relief wells would need to be drilled at the same time the main oil well is being drilled. By drilling the relief well at the same time as the main well, spills would be contained more quickly and impacts would be reduced in those rare cases when both the main and back-up drilling rig equipment fails. Currently, when a blowout preventer fails, a relief well is drilled into the main well and used to pump cement into the main well sealing the leak. As with the Deepwater Horizon spill, the relief well can take months to drill while oil continues to spill from the main well.

2. Establish an Oil Spill Rapid Response program. A pair of "rapid response" ships would be designed and operated by the U.S. Coast Guard. These boats would be permanently stationed in the oil drilling region of the northern Gulf and would be able to reach any spill within a day. The boats would carry a variety of equipment designed to contain another large spill, similar to the Deepwater Horizon oil spill. The ships would also have submersibles and robotic equipment like those used to stop the Deepwater Horizon oil spill.

Program Funding. The establishment of this program would be expensive. The initial cost of the new blowout preventers, drilling the relief wells, and contributions to a Gulf Oil Spill Rapid Response Fund to pay for the Coast Guard ships would need to be paid immediately by the oil companies. It is anticipated that some of these one-time upfront costs will be passed along to the public in terms of higher fuel prices during the first year. After that, the oil companies will be required by law to pay the Coast Guard for the annual operating costs.

Program B

Program Description

Objective: Reduce the damage from another large oil spill in the Gulf of Mexico

A new two part federal program is being proposed. Part 1 would require oil monitoring stations around the active drilling region. Part 2 would establish a new Oil Spill Rapid Response program. Here's how the program would work:

1. Oil monitoring stations. Oil detection equipment would be placed every 10 miles around the oil drilling region in the Northern Gulf. The equipment would take oil measurements at different depths and send the measurements to satellites every hour. The equipment would be able to detect the presence of oil below the surface of the water and would help target cleanup efforts. With the Deepwater Horizon spill, only the oil on the surface was observable so that was the only oil targeted for cleanup. Underwater pockets of oil went undetected. With monitoring stations every 10 miles, large subsurface pockets of oil could be detected and targeted for clean up as well. In addition, the oil detection equipment would provide information both before and after a spill, allowing for an accurate measurement of the amount of oil that was spilled.

2. Establish an Oil Spill Rapid Response program. A pair of new "rapid response" ships would be designed and operated by the U.S. Coast Guard. These boats would monitor the data from the new monitoring stations and would be permanently stationed in the oil drilling region of the northern Gulf and would be able to reach any spill within a day. The ships would carry a variety of equipment designed to contain another large spill, similar to the Deepwater Horizon oil spill. The ships would also have submersibles and robotic equipment like those used to stop the Deepwater Horizon oil spill.

Program funding. The establishment of this program would be expensive. The initial costs of the new monitoring equipment and the two response ships would be shared between all taxpayers in the U.S. during the first year. After that, the oil companies will be required by law to pay the Coast Guard for the annual operating costs. The cost to you as a taxpayer would be a one-time federal income tax payment into a Gulf Oil Spill Rapid Response Fund.

Summary

The Oil Pollution Act of 1990 requires companies to pay for all cleanup activities if they are found negligible; that would not change under either of these programs. Responsible parties would still pay for the cleanup. But these programs provide a type of "insurance policy" by reducing the chance of major damages by another large spill and immediately implementing clean up organized by trained U.S. Coast Guard personnel. These programs would <u>not</u> prevent damage from a spill anywhere else in the United States or international waters because the required equipment and response ships would only be implemented in the Gulf of Mexico.

Please proceed to checkout to answer the questions on the next page

Program Comparison

1. Which of the two programs do you think would be more *effective* at lessening the impact of another large oil spill in the Gulf of Mexico?

   ☐ **Program A** ☐ **Program B**

   Why?

2. Each program would only be implemented if a majority of voters vote for it in the next national general election (November 2012). If one of these programs were going to be on the ballot, which would you *prefer* to see on the ballot if both programs would have the *same cost* to you if implemented?

   ☐ **Program A** ☐ **Program B**

   If the answer is different from their response to 1, Why:

3. If either program was passed by a majority vote, the cost to you would be an increase in fuel costs for one year of $75 for Program A or a one-time federal tax payment of $75 for Program B. *Would you vote in favor of the program you choose* for question 2 if it was on the ballot and would cost you *$75*?

   ☐ **Yes** ☐ **No**

   Why?

Orlando Focus Group (March 23, 2011)

Moderator's Script

Welcome and thank you for coming.

1. Find out their name and check it on the form.
2. Have them make a Name Placard for their seat.
3. Pay them and have them sign receipt.

Hello, my name is Bill Messina and this is Mike Scicchitano. I want to welcome you and thank you for coming. We are from the University of Florida. We are here to get your opinions.

Please note that you will not be putting your names on any of the handouts we give you and we will not associate names with any comments. What you tell us tonight will help us develop a survey that will go out to thousands of people across the U.S. so the information you help us with is really important.

We want you to feel as comfortable as possible. If any word or phrase is unfamiliar to you please feel free to ask for clarification. Also, please feel free to speak up, we want your honest opinions. Feel free to disagree with one another. There are no right or wrong opinions. Don't be afraid to ask questions at any time. We will be sharing some information with you, asking for feedback and discussion, and asking you to react to some ideas. Are there any questions now before we begin?

Let's start by talking for a moment about some issues facing Florida and the United States. Some may not be important to you, others may be.

Distribute Handout #1 and CARD A

On the first page is a list of issues facing the State of Florida. We would like for you to rate the importance of these issues to you. For each issue we would like to know if the issue is not important at all to you personally, a little important, somewhat important, very important, extremely important, or are you not sure? We've also put these responses on CARD A. Please circle the number that best corresponds to how important it is to you.

Answer A-1
Are there any you would add?

Please turn to the second page of the handout. The federal government spends tax money on many programs for many different purposes. I'm going to read a list of some of these programs. For each one, I would like you to tell me how important it is to you that money continue to be spent on each program.

Answer A-2

Are there any you would add?

These are just a few of the programs the federal government currently spends tax money on. Proposals are sometimes made for new programs; but the federal government does not want to start any new programs unless taxpayers are willing to pay the additional cost for them.

One way for the federal government to find out about this is to give people like you information about a program so that you can make up your own mind about it.

Your views are useful to decision makers in deciding what, if anything, to do about a particular situation.

In interviews of this kind, some people think that the program they are asked about is not needed; others think that it is. We want to know what you think.

Have you ever been interviewed before about whether the government should start a new program?

Answer A-3
Collect Handout #1

In the past, people have been asked about various types of programs. In this interview, I am going to ask you about a program that would decrease damages due to oil spills. The program I will describe is designed to limit the impacts of large oil spills in the Gulf of Mexico.

I will begin with some background questions on past oil spills. Then I will provide you with some important background information on the program you are evaluating today. Then I will ask you whether you think this particular program is worthwhile and why you feel the way you do.

Distribute Handout #2

First, I'd like for you to think about major oil spills that have occurred in the past. Please think about oil spills anywhere in the world that caused significant harm to the environment. During your lifetime, which oil spills come to mind as having damaged nature the most? Please list any that come to mind on this sheet including the location to the best of your knowledge.

Answer A-4
Collect Handout #2

By a show of hands, who mentioned the Deepwater Horizon oil spill that occurred in April of last year? (# _____)

Distribute Handout #3

We will discuss this more in a moment but for now I'd like for you to just think about the environmental impacts that may have happened. What was it about the natural environment of the Gulf of Mexico that you feel was most seriously damaged – if at all - by the Deepwater Horizon oil spill? Please write on the answer sheet for those of you that remembered hearing about this oil spill.

Answer A-5
Discuss
Collect *Handout #3*

Distribute Handout #4 and MAP 1

Mike is now handing out a map of the Gulf of Mexico.
The Gulf of Mexico shoreline is made up of sandy beaches and coastal wetlands.

Handout #4 contains two questions that I would like for you to answer

Answer A-6 – A-9
Collect Handout #4

Distribute MAP 2

MAP 2 shows the drilling regions in the Northern Gulf of Mexico. Each of the yellow dots on the map represents an active oil rig platform in the region.

As of 2009, oil production in the Gulf of Mexico accounted for about 90% of all US offshore oil production and 29% of all US oil production, that is, offshore and onshore.

As of 2009, Gulf of Mexico offshore proven oil reserves accounted for 19% of all US proven oil reserves. Proven oil reserves are those reserves claimed to have a reasonable certainty (normally at least 90% confidence) of being recovered under existing economic and political conditions, with existing technology.

Oil extracted from offshore wells in the Gulf of Mexico is shipped to refineries in Texas and Louisiana where it is refined into fuels such as gasoline, diesel, and heating oil.

Distribute MAP 3

Now please look at MAP 3. This is a map that shows the location of the Deepwater Horizon oil spill and how it affected the Gulf of Mexico.

The blue "X" on the map is the site where the Deepwater Horizon oil spill occurred.

The orange shading over the Gulf shows where surface oil was detected after the spill. The darker the shading the longer the oil was present in that location.

For instance, the lightest shading shows areas where surface oil was only present for 1 to 3 weeks, while the darkest shading shows areas where surface oil was present for 16 to 18 weeks.

The areas of the coastline that are black represent areas where oil spilled from the Deepwater Horizon made landfall.

Approximately 1,050 miles of Gulf of Mexico coastline were impacted by the spill. This coastline consisted of estuaries, coastal wetlands, and beaches.

Oiled areas can kill vegetation and accelerate erosion.

In addition to the surface oil shown on the map, large pockets of subsurface oil have been detected and shown to be a result of the Deepwater Horizon oil spill. A layer of black residue on the seafloor has been identified which could impact the food chain of the Gulf of Mexico.

Distribute CARD B

CARD B shows some of the species affected by the Deepwater Horizon oil spill and how they were affected.

The statistics shown are from the federal government Gulf of Mexico restoration program and were for animals recovered through November 2, 2010.

It is important to note that not all dead animals collected were visibly oiled and it is possible their deaths were due to other causes. Also, not all visibly oiled animals died. Some of these visibly oiled animals were collected alive, cleaned, and released back into the wild.

It is also worth noting that the actual number of animals affected by the oil spill is probably higher than what is reported on the card. It is likely that not all animals injured or killed due to the oil spill were recovered.

The bird shown in the upper right-hand side of the card is a Brown Pelican. The Brown Pelican is a recovering species and was taken off the endangered species list in 2009. It was one of the species most affected by the oil spill.

The turtle shown in the middle photo is a leatherback turtle. It is one of 5 species of turtle found in the Gulf of Mexico. All 5 species of sea turtles found in the Gulf of Mexico are listed as endangered.

The bottom image is of a bottlenose dolphin. Dolphins were the main marine mammal species effected by the spill. These dolphins are found throughout the Gulf of Mexico and are not endangered.

Although long-term effects of the Deepwater Horizon oil spill are not certain, past experiences with oil spills around the world provide some insights into how oil affects other species.

While adult fish might be able to avoid oil, fish eggs and larvae can be damaged or destroyed by oil.

With past oil spills some fish species that were negatively impacted did not show decreased populations until years after oil spills.

The Gulf of Mexico is home to species of crab, shrimp, oysters, clams, and mussels. These species can all be damaged and destroyed by oil in the water.

Now, was any of the background information confusing or unclear?

Was the information presented on the handouts easy to understand when combined with the information I provided?

Was there any other background information on the Deepwater Horizon spill that you would like to know?

Also, please feel free to make notes on this handout about anything that was unclear or confusing.

If Americans think it is worthwhile, a new program could be implemented to lessen the impact of another large oil spill in the Gulf of Mexico similar to the Deepwater Horizon oil spill.

This program would do three things.

First, it would help prevent oil spills from occurring.

Second, it would monitor for oil both near the surface and subsurface to help target cleanup efforts and measure the amount and movement of spilled oil.

Third, if an oil spill does occur, it would prevent the oil from spreading and causing additional harm to the environment and overall ecosystem.

Distribute CARD C

The program being considered has three parts as summarized on CARD C. Part 1 would require additional equipment and procedures during the drilling process. It would apply to

all oil companies actively drilling in the Gulf of Mexico. Part 2 would establish an oil monitoring program around the active drilling area. Part 3 would establish a new Oil Spill Rapid Response program.

Here's how the program would work:

All Gulf of Mexico oil drilling rigs would be required to use new, state-of-the-art equipment designed to prevent oil spills should something go wrong in the drilling process.

Each piece of equipment would have two backups that would be automatically triggered if needed in the event of an emergency.

Oil companies operating in the Gulf of Mexico would be required to drill relief wells at the same time the main oil well is being drilled.

By drilling the relief well at the same time as the main well, spills would be contained more quickly and impacts would be reduced in those rare cases when both the main and back-up drilling rig equipment fails.

Currently, when a blowout preventer fails, a relief well is drilled into the main well and used to pump cement into the main well sealing the leak.

As with the Deepwater Horizon spill, the relief well can take months to drill while oil continues to spill from the main well.

Next, the program would install monitoring equipment every 10 miles around the active drilling region of the Northern Gulf of Mexico. The equipment would detect oil from the sea floor to the surface and help to both identify large pockets of oil and identify movement of oil.

Lastly, a pair of "rapid response" ships would be designed and operated by the U.S. Coast Guard. These ships would be permanently stationed in the oil drilling region of the northern Gulf and would be able to reach any spill within a day.

The ships would carry a variety of equipment designed to contain another large spill similar to the Deepwater Horizon oil spill.

The ships would also have submersibles and robotic equipment like those used to stop the Deepwater Horizon oil spill.

Distribute Handout #5

We understand that we have not covered the effectiveness of the program, the cost of the program, or how it will be paid for. We will get to all of these shortly. We would like for you to answer these questions first. We will get to issues of cost, who pays, and effectiveness next, now we just want to know if you have any questions at this point.

Answer A-8 – A-9
Collect Handout #5

The establishment of this program would be expensive. The initial cost of the new blowout preventers, drilling the relief wells, installation of the new monitoring equipment and contributions to a Gulf Oil Spill Prevention and Rapid Response Fund to pay for the U.S. Coast Guard vessels would need to be paid immediately by the oil companies.

It is estimated that part of these one-time upfront costs will be passed along directly to the public in terms of higher fuel charges during the first year of the program.

After that, the oil companies will be required by law to pay the Coast Guard for the annual operating costs of the rapid response boats. The program would be re-evaluated after 10 years for renewal.

Distribute CARD D

We would also like to point out that the Oil Pollution Act of 1990 requires companies to employ safeguards and maintain their equipment but if found negligent, they are required to pay for all cleanup activities; that would not change under this program.

Responsible parties would still pay for the cleanup. But this program would provide a type of "insurance policy" by reducing the chance of major damages by another large spill. This program would <u>not</u> prevent damage from a spill anywhere else in the United States or international waters because the required equipment and response ships would only be implemented in the Gulf of Mexico.

We are interviewing people to ask how they would vote on this <u>program</u> if it were put on a national election ballot.

Distribute CARD E

There are reasons why you might vote for setting up this program and reasons why you might vote against it.

These are a few reasons why some might vote for such a program and some might vote against such a program.

Can you think of any other reasons?

Scientists believe that implementing the program would significantly reduce the impacts on the environment following another large spill similar to the Deepwater Horizon oil spill.

Distribute CARD F

CARD F shows some of the environmental impacts observed after the Deepwater Horizon spill and what scientists think the impacts would have been if the program you just read about had been implemented at the time.

If the Program would have been active at the time of the Deepwater Horizon spill it is estimated that oil spill impacts would have been limited to at most 25 miles of oiled coastline, 100 birds killed, 10 sea turtles killed, and 3 dolphins killed.

The number of most species it would protect is small in comparison to their total numbers.

Once again there are valid reasons one could vote for or against this program, we outline some of these on page three of this handout. Your household might prefer to spend the money to solve other social or environmental problems instead.

Or, the program might cost more than your household wants to spend for this.

If the program were passed by a majority vote in the next federal election (which will be in November 2012) you would pay for the program through increased fuel costs during the first year of the program?

Distribute Handout #6

While the oil companies operating in the Gulf of Mexico will be required to pay all of the costs of the program it is believed that some of the large upfront costs of implementing the program will be passed onto consumers in the form of higher fuel prices during the first year of the program.

I would like you to answer the question that corresponds to your answer to question B-1 on how you would vote with regards to the program being described. If you voted yes for the program answer B-3, if you voted no answer B-4, and if you were not sure answer B-5

Answer B-1 – B-5
Collect Handout #6

Now I would like to consider some of the information presented to you earlier and ask a few questions regarding how you felt about it. After you have answered, we will discuss.

Distribute Handout #7

Answer C-1 – C-8
Discussion
Collect Handout #6

Now I would like you to answer a few questions about your household's recreational activities. This is the last handout. Please answer the question in this handout.

Distribute Handout #8

Answer D-1 – D-6
Collect Handout #8

Now that we're almost at the end of the interview and you have been able to think a bit more about the situation, I'd like to give you a chance to review your answer to the voting question.

You were asked if you would vote for or against a program that would help prevent damages from future oil spills and would have limited the effects of the Deepwater Horizon oil spill as shown. (CARD F)

Distribute Handout #9

Answer D-7
Discuss
Collect Handout #8

There are different ways for people to pay for new programs to protect the environment.

One way is for the government to pay the cost. This will raise everyone's taxes.

Another way is for businesses to pay the cost (like the proposed program discussed here). This will make prices go up for everyone that uses the products of those businesses

Distribute Handout #10

Answer D-8 – D-10
Discuss
Collect Handout #10

Maps 1-3 and Cards A-G

CARD A

1. NOT IMPORTANT AT ALL

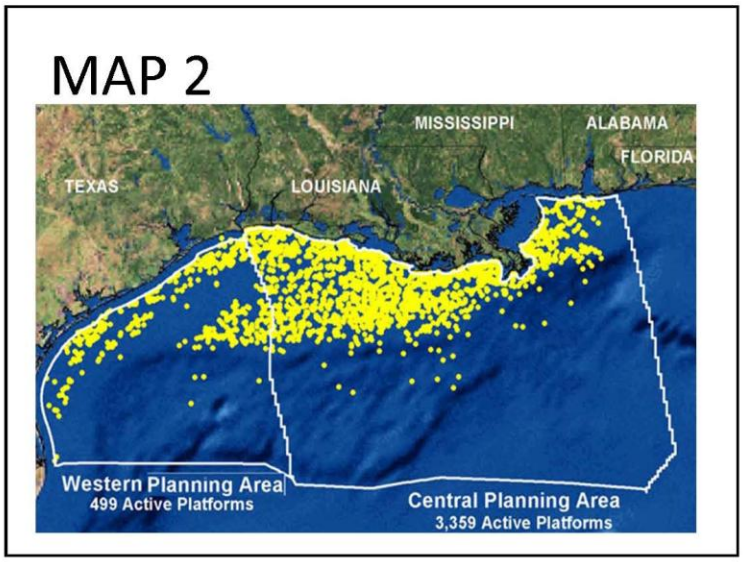
2. NOT TOO IMPORTANT

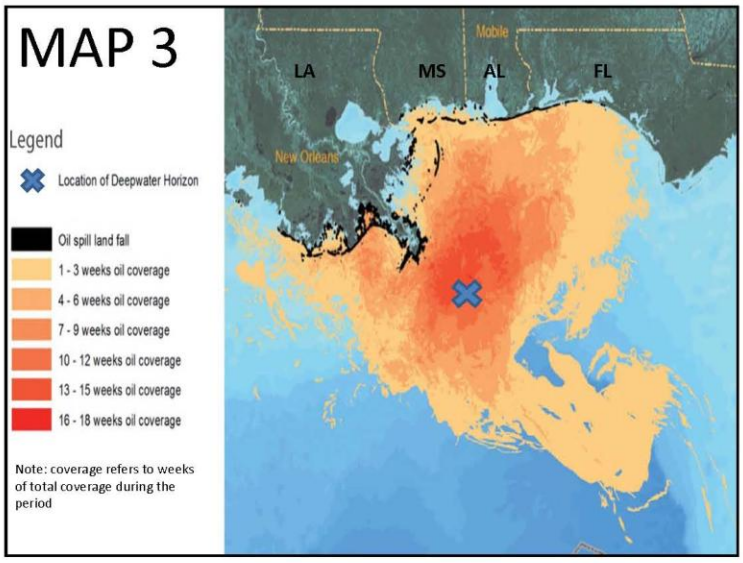
3. SOMEWHAT IMPORTANT

4. VERY IMPORTANT

5. EXTREMELY IMPORTANT

MAP 1


MAP 2
MISSISSIPPI
ALABAMA
FLORIDA
TEXAS
LOUISIANA
Western Planning Area
499 Active Platforms
Central Planning Area
3,359 Active Platforms


MAP 3
Legend
Location of Deepwater Horizon
Oil spill land fall
1 - 3 weeks oil coverage
4 - 6 weeks oil coverage
7 - 9 weeks oil coverage
10 - 12 weeks oil coverage
13 - 15 weeks oil coverage
16 - 18 weeks oil coverage
Note: coverage refers to weeks of total coverage during the period
Mobile
LA
MS
AL
FL
New Orleans

CARD B

Effects on Animals to 11/2/10

- Birds: 6,104 dead and 4,342 oiled collected during cleanup.
- Sea Turtles: 609 dead and 474 oiled collected during cleanup.
- Marine Mammals: 101 dead (99 dolphin, 1 sperm whale, 1 other whale) and 6 oiled collected during cleanup.

Brown Pelican
(off the endangered species list in 2009)

Leatherback
(all 5 Gulf species are endangered)

Bottlenose
(3 main nearshore Gulf species, 7 offshore)

CARD C

PART 1a. All Gulf of Mexico oil drilling rigs would be required to use new, state-of-the-art equipment. Each piece of equipment would have two backups that would be automatically triggered if needed in the event of an emergency.

1b. Relief wells would need to be drilled at the same time the main well is drilled. The relief well would be able to contain spills more quickly and reduce impacts in those rare cases when both the main and backup drilling equipment fails.

PART 2. Oil detection equipment would be placed every 10 miles around the oil drilling region in the Northern Gulf. The equipment would be able to detect the presence of oil below the surface of the water and would help target cleanup efforts. The equipment would also provide information both before and after a spill, allowing for an accurate measurement of the amount of oil spilled.

PART 3. A pair of "rapid response" ships would be designed and operated by the U.S. Coast Guard. These boats would be permanently stationed in the oil drilling region of the northern Gulf and would be able to reach any spill within a day. The boats would carry a variety of equipment designed to contain another large spill similar to the Deepwater Horizon oil spill.

CARD D

- The establishment of this program would be expensive and would need to be paid immediately by oil companies. The initial costs include the new blowout preventers, drilling the relief wells, and contributions to a Gulf Oil Spill Rapid Response Fund (RRF) for the new monitoring equipment and new ships.
- It is estimated that oil companies will seek to recover these one-time upfront costs by raising fuel prices during the first year of the program. After that, the oil companies will be required by law to contribute to the RFF for the annual operating costs. The program would be re-evaluated after 10 years for renewal.
- The Oil Pollution Act of 1990 requires companies to pay for all cleanup activities if found negligent; that would not change under this program. This program would provide a type of "insurance policy" by reducing the chance of major damages from another large spill. This program would not prevent damage from a spill anywhere else in the U.S. or international waters because the equipment and response ships would only be in the Gulf of Mexico.

CARD E

Reasons For:

- Prevent the deaths of numerous wildlife species including birds, sea turtles, and marine mammals.
- Protect Gulf of Mexico habitat including beaches, estuaries, and coastal wetlands.
- Protect Gulf of Mexico water quality, including in deepwater areas.

Reasons Against:

- Many species being protected are not in danger of going extinct.
- Your household might prefer to spend this money on other things, or not so much for this.
- You might think there won't be another large oil spill like the Deepwater Horizon.

CARD F

The following impacts were observed following the Deepwater Horizon spill:

- Oiled coastal areas: 1,050 miles
- Birds killed: 6,000
- Sea turtles killed: 600
- Dolphins killed: 100

If the Program would have been active at the time of the Deepwater Horizon spill it is estimated that oil spill impacts would have been limited to at most:

- Oiled coastal areas: 25 miles (1,025 miles protected)
- Birds killed: 100 (5,900 birds saved)
- Sea turtles killed: 10 (590 deaths prevented)
- Dolphins killed: 3 (97 deaths prevented)

CARD G

The following impacts were observed following the Deepwater Horizon spill:

- Oiled coastal areas: 1,050 miles
- Birds killed: 6,000
- Sea turtles killed: 600
- Dolphins killed: 100

Handouts 1-10

Handout #1

A-1. Importance to you (Florida Programs):

	Not at all	A little	Somewhat	Very	Extremely	Not sure
a. Improving education in Florida's PreK-12th schools	1	2	3	4	5	N
b. Reducing air pollution in Florida cities	1	2	3	4	5	N
c. Maintaining local library services	1	2	3	4	5	N
d. Reducing crime	1	2	3	4	5	N
e. Improving water quality	1	2	3	4	5	N
f. Finding ways to reduce taxes	1	2	3	4	5	N
g. Protecting Florida's threatened and endangered species	1	2	3	4	5	N

A-2. Importance to you (Federal Programs):

	Not at all	A little	Somewhat	Very	Extremely	Not Sure
a. Providing unemployment benefits	1	2	3	4	5	N
b. Providing homeless shelters	1	2	3	4	5	N
c. Providing FEMA funding	1	2	3	4	5	N
d. Protecting wildlife	1	2	3	4	5	N
e. Providing park rangers and facilities at national parks	1	2	3	4	5	N
f. Providing funding for new sources of energy	1	2	3	4	5	N
g. Protecting public lands from development	1	2	3	4	5	N
h. Providing reduced-fee school lunches	1	2	3	4	5	N

A-3. Have you ever been interviewed before about whether the government should start a new program?

_____ YES

_____ NO

_____ NOT SURE

Handout #2

A-4. During your lifetime, which oil spills come to mind as having damaged nature the most?

Handout #3

If remember hearing about the Deepwater Horizon oil spill:

A-5. What was it about the natural environment of the Gulf of Mexico that you feel was most seriously affected (if anything was affected) by the oil spill?

Handout #4

A-6. Have you visited any coastal area in the Gulf of Mexico in the last 12 months?

_____ YES

_____ NO

_____ NOT SURE

If YES:

A-7. What activities did you do during your visit? Please check all that apply:

_____ BEACH GOING

_____ BOATING (KAYAK, CANOE, SAILBOAT)

_____ SALTWATER FISHING

_____ SCUBA DIVING

_____ SIGHTSEEING

_____ RELAXATION

_____ BUSINESS

_____ OTHER (SPECIFY: _____)

_____ NOT SURE

Handout #5

A-8. Is there anything more you would like to know about how this program would work?

_____ YES

_____ NO

_____ NOT SURE

If YES:

A-9. What is that?

Handout #6

B-1. If an election were being held today, and the total cost to your household for this program would be an extra $75 in fuel costs during the first year of the program, would you vote for the program or would you vote against it?

_____ FOR

_____ AGAINST

_____ NOT SURE

B-2. People have different reasons for how they vote for programs such as this one. What about the program made you vote the way you did?

If FOR:

B-3. Would you vote for or against the program, and its $75 cost, if the program would only prevent harm to the ecosystem in the Gulf of Mexico and the environment, that is, it would not affect human health?

_____ FOR

_____ AGAINST

_____ NOT SURE

If AGAINST:

B-4. Why did you vote against the program?

_____ ISN'T WORTH THAT AMOUNT

_____ DIFFICULT TO PAY

_____ OTHER (_____)

If NOT SURE:

B-5. Why are you not sure about how you would vote?

Handout #7

C-1. At that time you voted on the program, did you think the harm from future oil spills in the Gulf of Mexico would be about the same as the Deepwater Horizon oil spill, a lot more, or a lot less?

_____ SAME

_____ A LOT MORE

_____ A LOT LESS

_____ OTHER (_____)

_____ NOT SURE

C-2. How serious did you consider this amount of harm to be?

_____ NOT SERIOUS AT ALL

_____ NOT TOO SERIOUS

_____ SOMEWHAT SERIOUS

_____ VERY SERIOUS

_____ EXTREMELY SERIOUS

_____ NOT SURE

C-3. When I described it to you, how effective did the program seem at limiting environmental damages due to another oil spill similar to the Deepwater Horizon?

_____ MORE EFFECTIVE THAN STATED

_____ ABOUT AS EFFECTIVE AS STATED

_____ LESS EFFECTIVE THAN STATED

_____ NOT SURE

C-4. When you decided how to vote, how much did you think your household would have to pay?

_____ MORE THAN $75 IN INCREASED FUEL COSTS

_____ RIGHT ABOUT $75 IN INCREASED FUEL COSTS

_____ LESS THAN $75 IN INCREASED FUEL COSTS

_____ NOT SURE

C-5. When you decided how to vote, how long did you think your household would have to pay the increased fuel costs?

_____ ONE YEAR

_____ MORE THAN ONE YEAR

_____ NOT SURE

C-6. Overall, did my descriptions try to push you to vote one way or another or let you make up your own mind?

_____ PUSHED ONE WAY OR ANOTHER

_____ LET ME MAKE UP OWN MIND

_____ NOT SURE

If you think it pushed you one way or another:

C-7. Which way did it push you? Was it to…

_____ VOTE FOR THE PROGRAM

_____ VOTE AGAINST THE PROGRAM

_____ OTHER (_____)

_____ NOT SURE

What made you think that?

C-8. When describing the program we stated the oil companies would pay the upfront costs of the program but would pass along some of the costs to consumers in the form of higher fuel costs during the first year of the program. At the time, how much of the costs did you think would be passed along to consumers?

_____ SOME

_____ MOST

_____ ALL

_____ NOT SURE

Handout #8

D-1. Has anyone in your household ever lived within 10 miles of the Gulf of Mexico?

_____ YES

_____ NO

_____ NOT SURE

If YES,

How long ago was that?

_____ CURRENTLY LIVE WITHIN 10 MILES OF THE GULF COAST

_____ LESS THAN FIVE YEARS AGO

_____ MORE THAN 5 BUT LESS THAN 15 YEARS AG

_____ MORE THAN 15 YEARS AGO

_____ NOT SURE

D-2. In the past five years, has anyone in your household gone saltwater boating or saltwater fishing?

_____ YES

_____ NO

_____ NOT SURE

D-3. Does anyone in your household like to identify different species of birds?

_____ YES

_____ NO

_____ NOT SURE

D-4. During this past 12 months, about how many times did people in your household visit the Gulf of Mexico?

_____ NEVER

_____ ONCE OR TWICE

_____ THREE TO TEN TIMES

_____ MORE THAN TEN TIMES

_____ NOT SURE

D-5. How often do you personally watch television programs about animals and birds in the wild?

_____ VERY OFTEN

_____ OFTEN

_____ SOMETIMES

_____ RARELY

_____ NEVER

_____ NOT SURE

D-6. Do you think of yourself as an . . .

_____ ENVIRONMENTAL ACTIVIST

_____ STRONG ENVIRONMENTALIST

_____ SOMEWHAT STRONG ENVIRONMENTALIST

_____ NOT PARTICULARLY STRONG ENVIRONMENTALIST

_____ NOT AN ENVIRONMENTALIST AT ALL?

_____ NOT SURE

Handout #9

D-7. At this point, would you vote for the program or against the program if it cost your household $75 in increased fuel costs over the next year?

_____ FOR

_____ AGAINST

_____ NOT SURE

Would you vote for the program or against the program if it cost your household the same amount of money ($75) but you would pay a different way?

_____ FOR

_____ AGAINST

_____ NOT SURE

Would you rather pay for this program through….?

_____ A TAX ON GASOLINE AT THE PUMP

_____ FEDERAL INCOME TAX

_____ EITHER ONE/DON'T CARE WHICH

_____ NEITHER

_____ NOT SURE

Handout #10

D-8. If you had to choose, would you prefer to pay for new environmental programs?

_____ THROUGH HIGHER TAXES

(local, state, or federal & sales, property, or income)

_____ THROUGH HIGHER PRICES

_____ EITHER ONE/DON'T CARE WHICH

_____ NEITHER

_____ NOT SURE

D-9. Generally speaking, how much confidence do you have in the U.S. Coast Guard?

_____ A GREAT DEAL

_____ SOME

_____ HARDLY ANY

_____ NONE

_____ NOT SURE

D-10. Generally speaking, how much confidence do you have in the federal government overall?

_____ A GREAT DEAL

_____ SOME

_____ HARDLY ANY

_____ NONE

_____ NOT SURE

Cocoa Focus Group (March 31, 2011)

Moderator's Script

Welcome and thank you for coming.

1. Find out their name and check it on the form.
2. Have them make a Name Placard for their seat.
3. Pay them and have them sign receipt.

Hello, my name is Bill Messina and this is Mike Scicchitano. I want to welcome you and thank you for coming. We are from the University of Florida. We are here to get your opinions.

Please note that you will not be putting your names on any of the handouts we give you and we will not associate names with any comments. What you tell us tonight will help us develop a survey that will go out to thousands of people across the U.S. so the information you help us with is really important.

We want you to feel as comfortable as possible. If any word or phrase is unfamiliar to you please feel free to ask for clarification. Also, please feel free to speak up, we want your honest opinions. Feel free to disagree with one another. There are no right or wrong opinions. Don't be afraid to ask questions at any time. We will be sharing some information with you, asking for feedback and discussion, and asking you to react to some ideas. Are there any questions now before we begin?

Let's start by talking for a moment about some current issues facing Florida and the United States. Some may not be important to you, others may be.

Distribute Handout #1

On the first page is a list of issues facing the State of Florida. We would like for you to rate the importance of these issues to you. For each issue we would like to know if the issue is not important at all to you personally, a little important, somewhat important, very important, extremely important, or are you not sure? Please circle the number that best corresponds to how important it is to you. Please just answer those on the first page. We will discuss after everyone has finished.

> Answer A-1
> We will know which ones are not important to you, but are there any you would add?

Please turn to the second page of the handout. The federal government spends tax money on many programs for many different purposes. For each one, I would like you to tell me how important it is to you that money continue to be spent on each program.

Answer A-2
Are there any you would add?

These are just a few of the programs the federal government currently spends tax money on. Proposals are sometimes made for new programs; but the federal government does not want to start any new programs unless taxpayers support and are willing to pay the additional cost for them.

One way for the federal government to find out about this is to give people like you information about a program so that you can make up your own mind about it. Your views are useful to decision makers in deciding what, if anything, to do about a particular situation.

In interviews of this kind, some people think that the program they are asked about is not needed; others think that it is. We want to know what you think.

Have you ever been interviewed before about whether the government should start a new program? Please answer the last question and return Handout #1 to Mike.

Answer A-3
Collect Handout #1

In the past, people have been asked about various types of programs. In this interview, I am going to ask you about a program that would decrease damages due to oil spills. The program I will describe is designed to limit the impacts of large oil spills in the Gulf of Mexico.

I will begin with some questions on past oil spills. Then I will provide you with some information on the program you are evaluating today. Then I will ask you whether you think this particular program is worthwhile and why you feel the way you do.

Distribute Handout #2

First, I'd like for you to think about major oil spills that you may have heard about. Please think about oil spills anywhere in the world. Are there any oil spills that you remember as having damaged nature the most? Please describe any that come to mind on this sheet including the location to the best of your knowledge.

Answer A-4
Collect Handout #2

By a show of hands, who mentioned the oil spill that occurred in the Gulf of Mexico in April of last year? (# _____)

Distribute Handout #3 to those who mentioned

For those that do remember, think about the environmental impacts that may have happened. What was it about the natural environment of the Gulf of Mexico that you feel was most seriously damaged – if at all - by the oil spill? Please write on the answer sheet in as much detail as you remember.

Answer A-5
Collect Handout #3

Distribute Handout #4 and MAP 1

Mike is now handing out a map of the Gulf of Mexico.
The Gulf of Mexico shoreline is made up of sandy beaches and coastal wetlands.

Handout #4 contains two questions that I would like for you to answer.

Answer A-6 – A-7
Collect Handout #4

Distribute MAP 2

MAP 2 shows the drilling regions in the Northern Gulf of Mexico. Each of the yellow dots on the map represents an active oil rig platform in the region.

Now I would like to discuss the oil spill that happened last April. The spill began on April 20th of 2010 when the Deepwater Horizon oil rig was destroyed in a fire while drilling an oil well approximately 50 miles southeast of the Mississippi River delta. The Gulf of Mexico was roughly 5,000 feet (or about 1 mile) deep at the drilling site. The sinking of the Deepwater Horizon oil rig caused oil to spill out of the riser, the pipe that connects the well at the ocean floor to the drilling rig on the surface. The spill lasted until September 19th of 2010 when the well was permanently capped. In all, about 205 million gallons of oil spilled into the Gulf of Mexico making the Deepwater Horizon oil spill the largest in U.S. history. For comparison, this spill was about 18 times larger than the Exxon Valdez oil spill in Alaska in the early 1990s.

Distribute MAP 3

Now please look at MAP 3. This is a map that shows the location of the Deepwater Horizon oil spill and how it affected the Gulf of Mexico. The blue "X" on the map is the site where the Deepwater Horizon oil spill occurred.

The orange shading over the Gulf shows where surface oil was detected after the spill. The darker the shading the longer the oil was present in that location. For instance, the lightest shading shows areas where surface oil was only present for 1 to 3 weeks, while the darkest shading shows areas where surface oil was present for 16 to 18 weeks.

The areas of the coastline that are black represent areas where oil spilled from the Deepwater Horizon made landfall. About 1,050 miles of Gulf of Mexico coastline was impacted by the spill. This coastline consisted of estuaries, coastal wetlands, and beaches. Oiled areas can kill vegetation and accelerate erosion.

In addition to the surface oil shown on the map, large pockets of subsurface oil have been detected and shown to be a result of the Deepwater Horizon oil spill.

Due to the lack of a Gulf wide monitoring system, the large size of the area affected (both on the surface and in the water column), and the changing wind patterns and ocean currents, there is no way to know with a reasonable degree of certainty how much oil remains. The use of dispersants and the natural ability of the oil particles to break down also complicate any measure of remaining oil.

The breakdown of the oil into microscopic particles and the settling of some oil onto the sea floor also have the ability to impact the ecosystem and the food chain of the Gulf of Mexico.

Distribute CARD A

CARD A summarizes how the three main types of animals – birds, turtles, and marine mammals – were affected by the Deepwater Horizon oil spill and shows three particular species of concern. As I read and share information with you and you look at the card, please feel free to make notes on any of the handouts about anything that was unclear or confusing.

The statistics shown are from the Gulf of Mexico Restoration Program that was created after the spill. It is a federal government program that sought to recover all noticeable distressed or dead animals following the spill and the numbers were for animals recovered through November 2, 2010.

Note that not all dead animals that were collected were visibly oiled and it is possible their deaths were due to other causes. Also, not all visibly oiled animals died. Some of these visibly oiled animals were collected alive, cleaned, and released back into the wild.

The actual number of animals affected by the oil spill is, however, probably higher than what is reported on CARD A because it is likely that not all animals injured or killed due to the oil spill were recovered. With the Exxon Valdez spill 37,000 dead birds were recovered but scientists later estimated the death toll between 100,000 and 300,000 (between 3 and 8 times higher).

In total there are 28 different species of marine mammals in the Gulf of Mexico and all are protected under the Marine Mammal Protection Act, including 6 species of whales that are listed under the Endangered Species Act (although only one, the sperm whale, maintains a resident population in the Gulf). Two species of fish are threatened or endangered, the Gulf sturgeon and smalltooth sawfish. Another 13 species of fish and sharks are considered "species of concern." Adult animals might be able to avoid oil, but eggs, larvae and young can be damaged or destroyed by oil.

Although long-term effects of the Deepwater Horizon oil spill are not certain, past experiences with oil spills around the world – such as with birds following the Exxon Valdez - provide some insights into how oil affects other species. For example, some fish species did not show ill effects from the oil spill until years later.

> Was any of the background information confusing?
> Was the information presented on the handouts easy to understand?
> Was there any other background information on the spill that you would like to know?

If Americans think it is worthwhile, a new program could be implemented to lessen the impact of another large oil spill in the Gulf of Mexico similar to the Deepwater Horizon oil spill. A group of University scientists has proposed a program that I'm going to explain to you and ask for feedback. This program would do <u>two</u> things.

First, it would <u>monitor</u> for oil both near the surface and subsurface to help target cleanup efforts and measure the amount and movement of spilled oil.

Second, if an oil spill does occur, it would prevent the oil from spreading and <u>causing additional harm</u> to the environment and overall ecosystem.

Distribute CARD B and CARD C

Here's how the program would work:

First, oil detection equipment would be placed every 10 miles around the oil drilling region in the Northern Gulf. These are the moored profilers. In addition, during routine monitoring the rosette sampler would be deployed at each profiling station at least once per month to take samples at different depths. The samples would be immediately analyzed on board specially designed U.S. Coast Guard ships, which I will describe in a minute. The equipment would be able to detect the presence of oil below the surface of the water and would help target cleanup efforts. In addition, the oil detection equipment would provide information both before and after a spill, allowing for an accurate measurement of oil spilled.

Second, there would be five U.S. Coast Guard ships outfitted with the detection equipment and staffed by personnel trained to analyze and interpret the water samples. The ships. would be permanently stationed in the oil drilling region of the northern Gulf and would be able to reach any spill within a day.

To respond to a spill, the ships would carry booms and skimming equipment to contain surface spills. The ships would also have submersibles and robotic equipment like those used to stop the Deepwater Horizon oil spill.

Distribute Handout #5

We understand that we have not covered the effectiveness of the program, the cost of the program, or how it will be paid for. We will get to all of these shortly. We would like for you to answer these questions first.

Answer A-8 – A-9
Collect Handout #5
Discuss

The establishment of this program would be expensive. The initial costs of the new monitoring equipment and the five ships and their clean up equipment would be shared by all taxpayers in the U.S. After that, it is anticipated that the oil companies will be required by law to pay higher lease fees to fund the ongoing operating costs for 10 years. The cost to you would be a one-time federal income tax payment transferred into a Coast Guard Oil Program Trust Fund. After 10 years the program would be evaluated to determine if it should be continued.

Distribute CARD D

We noted that the Oil Pollution Act of 1990 requires companies that are found negligent in a spill to pay for all cleanup and restoration activities; that would not change under this program. Responsible parties would still pay for the cleanup.

This program would provide a type of "insurance policy" by reducing the chance of major damages by another large spill for at least 10 years. This program would <u>not</u> prevent damage from a spill anywhere else in the United States or international waters because the required equipment and response ships would only be implemented in the Gulf of Mexico.

At this time, we are interviewing people just like you to ask how they would vote on this program if it were put on a national election ballot. There are reasons why you might vote for setting up this program and reasons why you might vote against it. CARD E provides a few reasons why some might vote for such a program and some might vote against such a program.

Distribute CARD E

Can you think of any other reasons? If so, please add them to your card.
Discuss

Scientists believe that implementing the program would significantly reduce the impacts on the environment following another large spill similar to the Deepwater Horizon oil spill.

Distribute CARD F

CARD F shows some of the environmental impacts observed after the Deepwater Horizon spill and what scientists think the impacts would have been if the program you just read about had been implemented at the time.

If the program would have been active at the time of the Deepwater Horizon spill it is estimated that oil spill impacts would have been reduced by 95% due to the rapid detection and response at sea.

The number of most species it would protect is small in comparison to their total numbers, with the exception of the endangered species; that is, the sea turtles, sperm whales, gulf sturgeon and smalltooth sawfish.

At this point, I'm going to ask you to consider whether you would vote for this program. Please remember there are valid reasons to vote both for and against the program as we saw on CARD E. If the program were passed by a majority vote in the next federal election (which will be in November 2012) you would pay for the program through a one-time federal income tax withholding that would go into the dedicated trust fund you read about earlier.

Distribute Handout #6

Please answer the first page and then answer the one question on the second page that corresponds to your vote.

Answer B-1 – B-5
Collect Handout #6

Now I would like to consider some of the information presented to you earlier and ask a few questions regarding how you felt about it. Please check one response for each question. After you have answered, we will discuss.

Distribute Handout #7

Answer C-1 – C-5
Collect Handout #7
Discuss

Now I would like you to answer a few questions about your household's recreational activities.

Distribute Handout #8

Answer D-1 – D-6
Collect Handout #8

Now that we're almost at the end of the interview and you have been able to think a bit more about the situation, I'd like to give you a chance to review your answer to the voting question.

You were asked if you would vote for or against a program that would help prevent damages from future oil spills and would have limited the environmental effects of the Deepwater Horizon oil spill as shown.

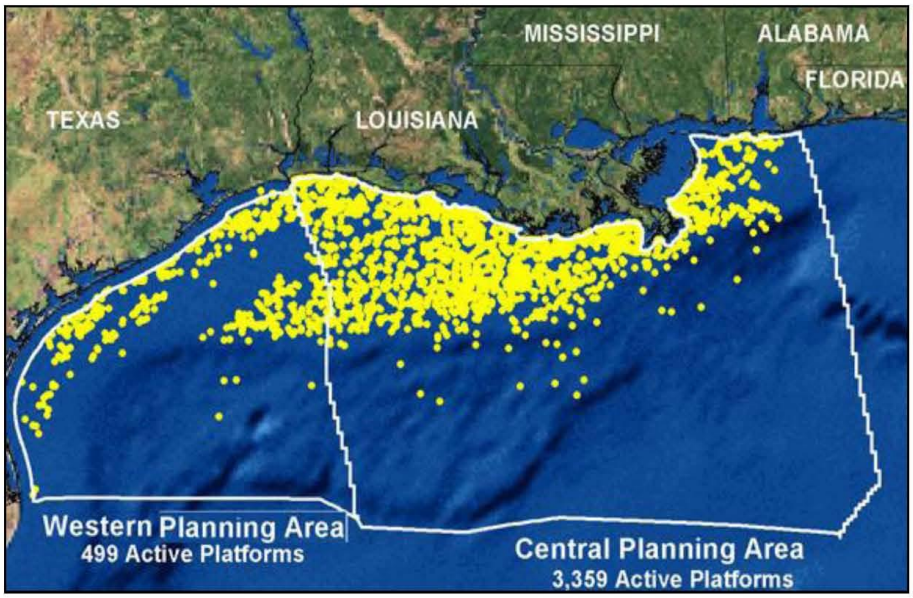
Distribute Handout #9

Answer D-7 - D-9
Collect Handout #8
Discuss

Maps 1-3 and Cards A-F

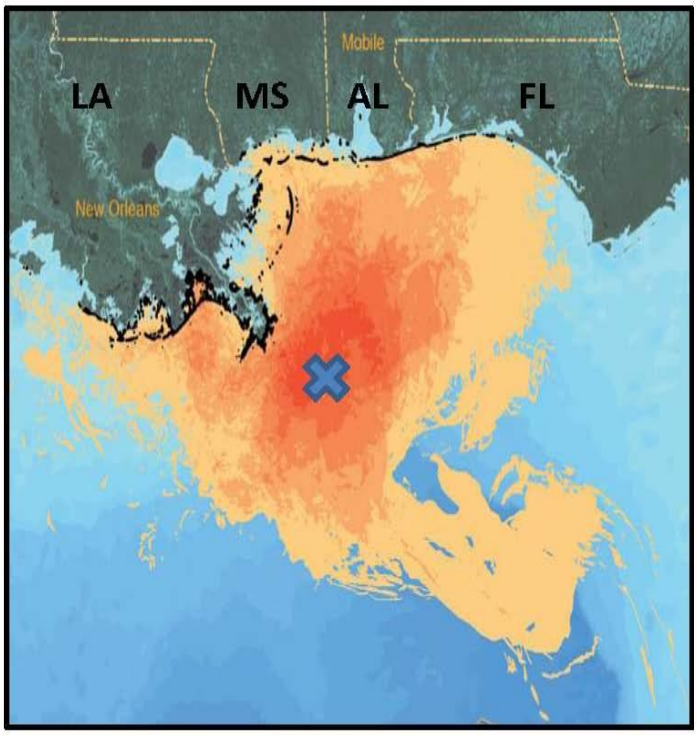
MAP 1

MAP 2



MAP 3

Note: coverage refers to weeks of total coverage during the period



CARD A

Animals collected during emergency cleanup to 11/2/10

- Birds: 6,104 dead and 4,342 oiled
- Sea Turtles: 609 dead and 474 oiled
- Marine Mammals: 101 dead (99 dolphin, 1 sperm whale, 1 other whale) and 6 oiled

Brown Pelican
(off the endangered species list in 2009)

Leatherback Sea Turtle
(only turtle species threatened, other four are endangered)

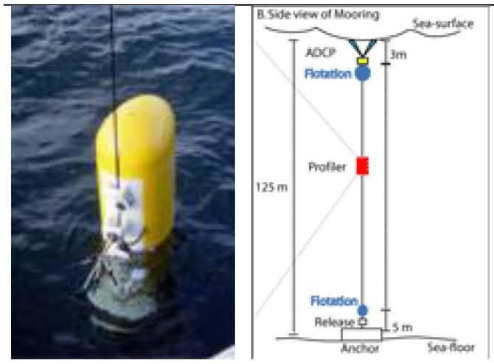
Bottlenose Dolphin
(3 main nearshore Gulf species, 7 offshore)

CARD B

- The U.S. Coast Guard would operate a fleet of five ships designed to transport and deploy oil detection equipment (e.g., profilers and samplers; see CARD C) and clean up equipment (e.g., booms, skimmers, submersibles and robotics). At least one ship would be able to reach any spill within 12 hours.
- The oil detection equipment would be deployed on a continuous basis at 10 mile intervals around the active oil drilling region in the Gulf of Mexico. The equipment would detect the presence of oil at all depths and concentrations that would help target cleanup efforts and provide an accurate measurement of oil spilled.

CARD C

Moored Profiler:



Once anchored by a cable, the profiler takes repeated basic measurements (such as density that can identify oil) up and down the water column, even in very deep water.

Rosette Sampler:

The most commonly used water sampling device is the "rosette". It is a framework that holds 12-36 sampling bottles clustered around a cylinder.

CARD D

- This program would be expensive to establish. The new vessels and equipment would need to be paid for in the first year.
- Your cost would be a one-time federal tax withholding payment into a Coast Guard Gulf Oil Program Trust Fund.
- The ongoing operating costs would be paid through higher lease fees required of oil companies operating in the Gulf.
- The program would be evaluated after 10 years to determine if it should be continued and perhaps expanded to other regions.
- SUMMARY: The Oil Pollution Act of 1990 requires companies to pay for all cleanup activities after a spill. This program would provide "insurance" by reducing the chance of major damages from another large spill.

CARD E

Reasons For:

- Prevent the deaths of numerous wildlife species including birds, sea turtles, and marine mammals.
- Protect Gulf of Mexico habitat including beaches, estuaries, and coastal wetlands.
- Protect Gulf of Mexico water quality, including in deep areas.
- Other:

Reasons Against:

- Many species being protected are not in danger of going extinct.
- Your household might prefer to spend this money on other things, or not so much for this.
- You might think there won't be another large oil spill like the Deepwater Horizon.
- Other:

CARD F

Impacts observed from the Deepwater Horizon oil spill:

- Oiled coastal areas: 1,050 miles
- Birds killed: At least 6,000
- Sea turtles killed: At least 600
- Dolphins killed: At least 100

If the Program would have been active at the time of the Deepwater Horizon oil spill, scientists estimate that the impacts would have been limited to at most:

- Oiled coastal areas: 50 miles (1,000 miles protected)
- Birds killed: 150 (At least 5,850 birds saved)
- Sea turtles killed: 25 (At least 575 deaths prevented)
- Dolphins killed: 5 (At least 95 deaths prevented)

Handouts 1-9

Handout #1

A-1. Importance to you (Florida Programs):

	Not at all	A little	Somewhat	Very	Extremely	Not sure
a. Improving education in Florida's PreK-12th schools	1	2	3	4	5	N
b. Reducing air pollution in Florida cities	1	2	3	4	5	N
c. Maintaining local library services	1	2	3	4	5	N
d. Reducing crime	1	2	3	4	5	N
e. Improving water quality	1	2	3	4	5	N
f. Finding ways to reduce taxes	1	2	3	4	5	N
g. Protecting Florida's threatened and endangered species	1	2	3	4	5	N
h. Eliminating growth management restrictions	1	2	3	4	5	N
i. Increasing mass transit projects	1	2	3	4	5	N

A-2. Importance to you (Federal Programs):

	Not at all	A little	Somewhat	Very	Extremely	Not Sure
a. Providing unemployment benefits	1	2	3	4	5	N
b. Providing homeless shelters	1	2	3	4	5	N
c. Providing funding for FEMA (Federal Emergency Management Agency)	1	2	3	4	5	N
d. Protecting wildlife	1	2	3	4	5	N
e. Providing park rangers and facilities at national parks	1	2	3	4	5	N
f. Providing funding for alternative sources of energy	1	2	3	4	5	N
g. Protecting public lands from development	1	2	3	4	5	N
h. Providing reduced-fee school lunches	1	2	3	4	5	N

A-3. Other than today, have you ever been interviewed before about whether the federal government should start a new program?

_____ YES
_____ NO
_____ NOT SURE

Handout #2

A-4. Which oil spills come to mind as having damaged nature the most? Describe where and when the occurred the best you can remember.

Handout #3

If remember hearing about the April 2010 oil spill in the Gulf:

A-5. What was it about the natural environment of the Gulf of Mexico that you feel was most affected (if anything was) by the oil spill?

Handout #4

A-6. Have you visited any coastal area in the Gulf of Mexico in the last 12 months?

_____ YES

_____ NO

_____ NOT SURE

If YES:

A-7. What activities did you do during your visit? Please check all that apply:

_____ BEACH GOING

_____ BOATING (KAYAK, CANOE, SAILBOAT)

_____ SALTWATER FISHING

_____ SCUBA DIVING

_____ SIGHTSEEING

_____ RELAXATION

_____ BUSINESS

_____ OTHER (SPECIFY: _____)

_____ NOT SURE

Handout #5

A-8. Is there anything more you would like to know about how this program would work?

_____ YES

_____ NO

_____ NOT SURE

If YES:

A-9. What is that?

Handout #6

B-1. If an election were being held today, would you vote for or would you vote against the establishment of a Coast Guard Gulf Oil Program Trust Fund to pay for this program if $75 would be withheld from your federal tax return for 2012 (i.e., paid in 2013)?

_____ FOR

_____ AGAINST

_____ NOT SURE

B-2. People have different reasons for how they vote for programs such as this one. What about the program made you vote the way you did?

If FOR:

B-3. Would you vote for or against the program, and its $75 one-time federal tax payment, if the program would only prevent harm to the ecosystem in the Gulf of Mexico and the environment, that is, it would not affect human health?

_____ FOR

_____ AGAINST

_____ NOT SURE

If AGAINST:

B-4. Why did you vote against the program?

_____ ISN'T WORTH THAT AMOUNT

_____ DIFFICULT TO PAY

_____ OTHER (_____)

If NOT SURE:

B-5. Why are you not sure about how you would vote?

Handout #7

C-1. At that time you voted on the program, did you think the harm from future oil spills in the Gulf of Mexico would be about the same as the Deepwater Horizon oil spill, a lot more, or a lot less?

_____ SAME AMOUNT OF HARM

_____ A LOT MORE HARM

_____ A LOT LESS HARM

_____ NOT SURE

C-2. How serious did you consider this amount of harm to be?

_____ NOT SERIOUS AT ALL

_____ NOT TOO SERIOUS

_____ SOMEWHAT SERIOUS

_____ VERY SERIOUS

_____ EXTREMELY SERIOUS

_____ NOT SURE

C-3. CARD F described how effective the program would be at limiting environmental damages from another oil spill similar to the Deepwater Horizon. Do you believe the program would be . . .

_____ MORE EFFECTIVE THAN STATED

_____ ABOUT AS EFFECTIVE AS STATED

_____ LESS EFFECTIVE THAN STATED

_____ NOT SURE

C-4. You were asked to vote on a one-time payment in a 10-year period. When you decided how to vote, did you think your household would have to make the federal tax payment . . .

_____ NOT AT ALL

_____ ONE TIME

_____ MORE THAN ONE TIME

_____ NOT SURE

If "Not At All", Why?

C-5. Overall, did my descriptions try to push you to vote one way or another or let you make up your own mind?

_____ PUSHED ONE WAY OR ANOTHER

_____ LET ME MAKE UP OWN MIND

_____ NOT SURE

If you think it pushed you one way or another:

Which way did it push you? Was it to…

_____ VOTE FOR THE PROGRAM

_____ VOTE AGAINST THE PROGRAM

What made you think that?

Handout #8

D-1. Has anyone in your household ever lived within 10 miles of the Gulf of Mexico?

_____ YES

_____ NO

_____ NOT SURE

If YES,

How long ago was that?

_____ CURRENTLY LIVE WITHIN 10 MILES OF THE GULF COAST

_____ LESS THAN FIVE YEARS AGO

_____ MORE THAN 5 BUT LESS THAN 15 YEARS AGO

_____ MORE THAN 15 YEARS AGO

_____ NOT SURE

D-2. In the past five years, has anyone in your household gone saltwater boating or saltwater fishing?

_____ YES

_____ NO

_____ NOT SURE

D-3. Does anyone in your household like to identify different species of birds?

_____ YES

_____ NO

_____ NOT SURE

D-4. During this past 12 months, about how many times did people in your household visit the Gulf of Mexico?

_____ MORE THAN TEN TIMES

_____ THREE TO TEN TIMES

_____ ONCE OR TWICE

_____ NEVER

_____ NOT SURE

D-5. How often do you personally watch television programs about animals and birds in the wild?

_____ VERY OFTEN

_____ OFTEN

_____ SOMETIMES

_____ RARELY

_____ NEVER

_____ NOT SURE

D-6. Do you think of yourself as an . . .

_____ ENVIRONMENTAL ACTIVIST

_____ STRONG ENVIRONMENTALIST

_____ SOMEWHAT STRONG ENVIRONMENTALIST

_____ NOT PARTICULARLY STRONG ENVIRONMENTALIST

_____ NOT AN ENVIRONMENTALIST AT ALL

_____ NOT SURE

Handout #9

D-7. At this point, would you vote for or would you vote against the establishment of a Coast Guard Gulf Oil Program Trust Fund to pay for this program if $75 would be withheld from your federal tax return for 2012 (i.e., paid in 2013)?

_____ FOR

_____ AGAINST

_____ NOT SURE

D-8. Did you receive a federal income tax refund or pay additional federal taxes for 2009 or 2010?

_____ I RECEIVED A REFUND IN 2009 OR 2010

_____ I MADE A PAYMENT IN 2009 OR 2010

_____ I DON'T KNOW

_____ I PREFER NOT TO ANSWER

D-9. Generally speaking, how much confidence do you have in the U.S. Coast Guard?

_____ A GREAT DEAL OF CONFIDENCE

_____ SOME CONFIDENCE

_____ HARDLY ANY CONFIDENCE

_____ NO CONFIDENCE

_____ NOT SURE

Jacksonville Focus Group (April 7, 2011)

Moderator's Script

Welcome and thank you for coming.

Hello, my name is Bill Messina and you've met Mike Scicchitano. I want to welcome you and thank you for coming. We are from the University of Florida. We are here to get your ideas about public policy and programs in particular. We are interested in your opinions and thoughts on a questionnaire that is being developed that will be given on the phone and online, which is why I'm reading to you today. Eventually all the material I present to you, invited survey respondents will have to either read or hear independently.

We are holding meetings like this around the state to get as many opinions as possible. You were selected from a random dialing of telephone numbers of people that live within 15 miles of this spot. The people that agreed to help were then screened to help get a sample of people that are representative of the general population of people in this area. So it wasn't because of your name being on any kind of list; it was purely because someone at your phone number answered the phone and, for example, you were in an age group that we wanted represented.

Please note that you will not be putting your names on any of the worksheets we give you and we will not associate names with any comments. What you tell us tonight will help us develop a survey that will go out to thousands of people, so the information you help us with is really important.

We want you to feel as comfortable as possible. If any word or phrase is unfamiliar to you please feel free to ask for clarification. Also, please feel free to speak up, we want your honest opinions. Feel free to disagree with one another. There are no right or wrong opinions. Don't be afraid to ask questions at any time. We will be sharing some information with you, asking for feedback and discussion, and asking you to react to some ideas. Are there any questions now before we begin?

NOTE: All CARDS listed together when handed out, should be stapled together on the left side to read like a book. Multipage HANDOUTS should also be stapled together.

Let's start by talking for a moment about some current issues facing Florida and the United States. Some may not be important to you, others may be.

Distribute Handout #1

On the first page is a list of issues facing the State of Florida. We would like for you to rate the importance of these issues to you. For each issue we would like to know if the issue is not important at all to you personally, a little important, somewhat important, very important, extremely important, or are you not sure? Please circle the number that best

corresponds to how important it is to you. Please just answer those on the first page. We will discuss after everyone has finished.

> Answer A-1
> We will know which ones are not important to you, but are there any you would add?

Please turn to the second page of the handout. The federal government spends tax money on many programs for many different purposes. For each one, I would like you to tell me how important it is to you that money continue to be spent on each program.

> Answer A-2
> Are there any you would add?

These are just a few of the programs the federal government currently spends tax money on. Proposals are sometimes made for new programs; but the federal government does not want to start any new programs unless taxpayers support and are willing to pay the additional cost for them.

One way for the federal government to find out about this is to give people like you information about a program so that you can make up your own mind about it. Your views are useful to decision makers in deciding what, if anything, to do about a particular situation.

In interviews of this kind, some people think that the program they are asked about is not needed; others think that it is. We want to know what you think.

> Have you ever been interviewed before about whether the government should start a new program? Please answer the last question and return Handout #1 to Mike.

> Answer A-3
> Collect Handout #1

In the past, people have been asked about various types of programs. In this interview, I am going to ask you about a program that would decrease environmental damages due to oil spills. The program I will describe is designed to limit the environmental impacts of large oil spills in the Gulf of Mexico. Please note that this survey effort is focused only on the environmental impacts There are other efforts underway to estimate the human impacts such as on recreation and tourism, including jobs, and those may be very important to you, but this one is solely about the environment so please try to focus on this one aspect of impacts from oil spills.

I will begin with some questions on past oil spills. Then I will provide you with some information on the program you are evaluating today. Then I will ask you whether you think this particular program is worthwhile and why you feel the way you do.

Distribute Handout #2

First, I'd like for you to think about major oil spills that you may have heard about. Please think about oil spills anywhere in the world. Are there any oil spills that you remember as having damaged nature the most? Please describe any that come to mind on this sheet including the location to the best of your knowledge.

Answer A-4
Collect Handout #2

By a show of hands, who mentioned the oil spill that occurred in the Gulf of Mexico in April of last year? (# _____)

Distribute Handout #3 to those who mentioned

For those that do remember, think about the environmental impacts that may have happened. What was it about the natural environment of the Gulf of Mexico that you feel was most seriously damaged – if at all - by the oil spill? Please write on the answer sheet in as much detail as you remember.

Answer A-5
Collect Handout #3

Distribute Handout #4 and MAP 1

Mike is now handing out a map of the Gulf of Mexico. The Gulf of Mexico shoreline is made up of sandy beaches and coastal wetlands. Handout #4 contains two questions that I would like for you to answer.

Answer A-6 – A-7
Collect Handout #4

Distribute MAP 2

MAP 2 shows the drilling regions in the Northern Gulf of Mexico. Each of the yellow dots on the map represents an active oil rig platform in the region.

Now I would like to discuss the oil spill that happened last April. The spill began on April 20th of 2010 when the Deepwater Horizon oil rig was destroyed in a fire while drilling an

oil well approximately 50 miles southeast of the Mississippi River delta. The Gulf of Mexico was roughly 5,000 feet (or about 1 mile) deep at the drilling site. The sinking of the Deepwater Horizon oil rig caused oil to spill out of the riser, the pipe that connects the well at the ocean floor to the drilling rig on the surface. The spill lasted until September 19th of 2010 when the well was permanently capped. In all, about 205 million gallons of oil spilled into the Gulf of Mexico making the Deepwater Horizon oil spill the largest in U.S. history. For comparison, this spill was about 18 times larger than the Exxon Valdez oil spill in Alaska in the early 1990s.

Distribute MAP 3

Now please look at MAP 3. This is a map that shows the location of the Deepwater Horizon oil spill and how it affected the Gulf of Mexico. The blue "X" on the map is the site where the Deepwater Horizon oil spill occurred.

The orange shading over the Gulf shows where surface oil was detected after the spill. The darker the shading the longer the oil was present in that location. For instance, the lightest shading shows areas where surface oil was only present for 1 to 3 weeks, while the darkest shading shows areas where surface oil was present for 16 to 18 weeks.

The areas of the coastline that are black represent areas where oil spilled from the Deepwater Horizon made landfall. About 1,050 miles of Gulf of Mexico coastline was impacted by the spill. This coastline consisted of estuaries, coastal wetlands, and beaches. Oiled areas can kill vegetation and accelerate erosion.

In addition to the surface oil shown on the map, large pockets of subsurface oil have been detected and shown to be a result of the Deepwater Horizon oil spill.

Due to the lack of a Gulf wide monitoring system, the large size of the area affected (both on the surface and in the water column), and the changing wind patterns and ocean currents, there is no way to know with a reasonable degree of certainty how much oil remains. The use of dispersants and the natural ability of the oil particles to break down also complicate any measure of remaining oil.

The breakdown of the oil into microscopic particles and the settling of some oil onto the sea floor also have the ability to impact the ecosystem and the food chain of the Gulf of Mexico.

Distribute CARDS A1, A2 and A3

Card A1 shows the Deepwater Horizon oil spill's effect on birds. The statistics shown are from the Gulf of Mexico Restoration Program that was created after the spill. It is a federal government program that sought to recover all noticeable distressed or dead animals following the spill and these numbers were for birds recovered through December 14,

2010. The three species most affected were laughing gulls, brown pelicans, and northern gannets.

Note that not all dead birds that were collected were visibly oiled and it is possible their deaths were due to other causes. Also, not all visibly oiled birds died. Some of these visibly oiled birds were collected alive, cleaned, and released back into the wild.

Card A2 shows the Deepwater Horizon oil spill's effect on sea turtles. The statistics shown are also from the Gulf of Mexico Restoration Program. These numbers were for sea turtles recovered through November 2, 2010. Of the five sea turtle species found in the Gulf of Mexico, one is listed as a threatened species while the other four are listed as endangered species. In a typical year, less than 50 animals are recovered dead.

Again, not all dead sea turtles that were collected were visibly oiled and it is possible their deaths were due to other causes. Also, not all visibly oiled sea turtles died. Some of these visibly oiled sea turtles were collected alive, cleaned, and released back into the wild.

The last card, card A3 shows the Deepwater Horizon oil spill's effect on marine mammals. The statistics shown are also from the Gulf of Mexico Restoration Program. These numbers were for marine mammals recovered through November 2, 2010.

In total there are 28 different species of marine mammals in the Gulf of Mexico and all are protected under the Marine Mammal Protection Act, including 6 species of whales that are listed under the Endangered Species Act (although only one, the sperm whale, maintains a resident population in the Gulf). Again, not all dead marine mammals that were collected were visibly oiled and it is possible their deaths were due to other causes. Also, not all visibly oiled marine mammals died. Some of these visibly oiled marine mammals were collected alive, cleaned, and released back into the wild.

The actual number of animals affected by the oil spill is, however, probably higher than what is reported on these cards because it is likely that not all animals injured or killed due to the oil spill were recovered. With the Exxon Valdez spill 37,000 dead birds were recovered but scientists later estimated the death toll between 100,000 and 300,000 (which is between 3 and 8 times higher).

In addition to the information on the cards, two species of fish are threatened or endangered, the Gulf sturgeon and smalltooth sawfish. Another 13 species of fish and sharks are considered "species of concern." Adult animals might be able to avoid oil, but eggs, larvae and young can be damaged or destroyed by oil.

Although long-term effects of the Deepwater Horizon oil spill are not certain, past experiences with oil spills around the world – such as with birds reported earlier - provide some insights into how oil affects other species. For example, some fish populations negatively impacted by the Exxon Valdez spill did not start to decline until four to six years after the spill.

Was the information presented on the CARDS easy to understand?

Was any of the background information I read to you unclear?

Was there any other background information on the Deepwater Horizon spill that you would like to know?

If Americans think it is worthwhile, a new program could be implemented to lessen the impact of another large oil spill in the Gulf of Mexico similar to the Deepwater Horizon oil spill. A group of University scientists has proposed a program that I'm going to explain to you and ask for feedback. This program would do <u>two</u> things.

First, if another large oil spill does occur, it would quickly stop the spill and prevent the oil from spreading and causing additional harm to the environment and overall ecosystem.

Second, it would detect oil both near the surface and subsurface to help target cleanup efforts and measure the amount and movement of spilled oil.

Distribute CARDS B, C1 and C2

Here's how the program would work as summarized on CARD B:

First, there would be five U.S. Coast Guard ships specially designed to stop oil spills quickly and clean up any spilled oil. The ships would have submersibles and robotics onboard specially designed to deal with deepwater oil spills and highly trained crews to operate the equipment. CARD C1 shows a picture of the type of ship that would be used. The equipment would be similar to what was used to stop the Deepwater Horizon oil spill but would be updated based on what was learned from that spill; and unlike with the Deepwater Horizon response, would be operated by individuals specifically trained to use the equipment. The ships would also carry booms and skimming equipment to clean up any spilled oil. Four ships would be permanently stationed in the active oil drilling region of the northern Gulf. The remaining ship would be rotated in to allow for routine maintenance. At least one ship would be able to reach any spill within 12 hours.

The ships would also deploy and monitor oil detection equipment that would be placed every 20 miles throughout the oil drilling region in the Northern Gulf. The equipment would be able to detect the presence of oil below the surface of the water and would help target cleanup efforts. In addition, the oil detection equipment would provide information both before and after a spill, allowing for an accurate measurement of oil spilled.

The two types of monitoring equipment that are planned for use are shown on CARD C2. The moored profilers are permanently stationed in one location but continuously take measurements at different depths and transmit the information to satellites for immediate analysis. The rosette samplers can then be deployed to take water samples for additional analysis at any location. The samples would be analyzed on board the Coast Guard ships.

Lastly, the new program would identify the U.S. Coast Guard as the lead agency in addressing oil spill monitoring and clean up in the Gulf of Mexico. The designation would help to reduce the confusion and delay that followed the Deepwater Horizon oil spill.

Distribute Handout #5

We understand that we have not covered the effectiveness of the program, the cost of the program, or how it will be paid for. We will get to all of these shortly. We would like for you to answer these questions first.

Answer A-8 – A-9
Collect Handout #5
Discuss

The establishment of this program would be expensive. The initial costs of the new monitoring equipment and the five ships and their clean up equipment would be shared by all taxpayers in the U.S. After that, it is anticipated that the oil companies will be required by law to pay higher lease fees to fund the ongoing operating costs for 10 years. The cost to you would be a one-time federal income tax payment. After 10 years the program would be evaluated to determine if it should be continued.

Distribute CARD D

We noted that the Oil Pollution Act of 1990 requires companies that are found negligent in a spill to pay for all cleanup and restoration activities; that would not change under this program. Responsible parties would still pay for the cleanup.

This program would provide a type of "insurance policy" by reducing the chance of major damages by another large spill for at least 10 years, independently of any regulatory changes that might happen as a result of the Deepwater Horizon. This program would <u>not</u> provide additional prevention directly, or prevent damage from a spill anywhere else in the United States or international waters because the required equipment and response ships would only be implemented in the Gulf of Mexico. The "insurance policy" would, therefore, work indirectly to prevent damanges from another large spill that might occur in the Gulf of Mexico since deepwater drilling has resumed.

At this time, we are interviewing people just like you to ask how they would vote on this program if it were put on a national election ballot. There are reasons why you might vote for setting up this program and reasons why you might vote against it. CARD E provides a few reasons why some might vote for such a program and some might vote against such a program.

Distribute CARD E

Can you think of any other reasons? If so, please add them to your card.
Discuss

Scientists believe that implementing the program would significantly reduce the impacts on the environment following another large spill similar to the Deepwater Horizon oil spill.

Distribute CARD F

CARD F shows some of the environmental impacts observed after the Deepwater Horizon spill and what scientists think the impacts would have been if the program you just read about had been implemented at the time.

If the program would have been active at the time of the Deepwater Horizon spill it is estimated that oil spill impacts would have been reduced by 80% due to the rapid detection and response at sea.

The number of most species it would protect is small in comparison to their total numbers, with the exception of the endangered species; that is, the sea turtles, sperm whales, gulf sturgeon and smalltooth sawfish.

At this point, I'm going to ask you to consider whether you would vote for this program. Please remember there are valid reasons to vote both for and against the program as we saw on CARD E. If the program were passed by a majority vote in the next federal election (which will be in November 2012) you would pay for the program through a one-time federal income tax payment in early 2013.

Distribute Handout #6

Please answer the first page and then answer the one question on the second page that corresponds to your vote.

Answer B-1 – B-5
Collect Handout #6

Now I would like to consider some of the information presented to you earlier and ask a few questions regarding how you felt about it. Please check one response for each question. After you have answered, we will discuss.

Distribute Handout #7

Answer C-1 – C-5
Collect Handout #7
Discuss

Now I would like you to answer a few questions about your household's recreational activities.

Distribute Handout #8

Answer D-1 – D-6
Collect Handout #8

Now that we're almost at the end of the interview and you have been able to think a bit more about the situation, I'd like to give you a chance to review your answer to the voting question.

You were asked if you would vote for or against a program that would help prevent damages from future oil spills and would have limited the environmental effects of the Deepwater Horizon oil spill as shown.

Distribute Handout #9

Answer D-7 - D-9
Collect Handout #9
Discuss

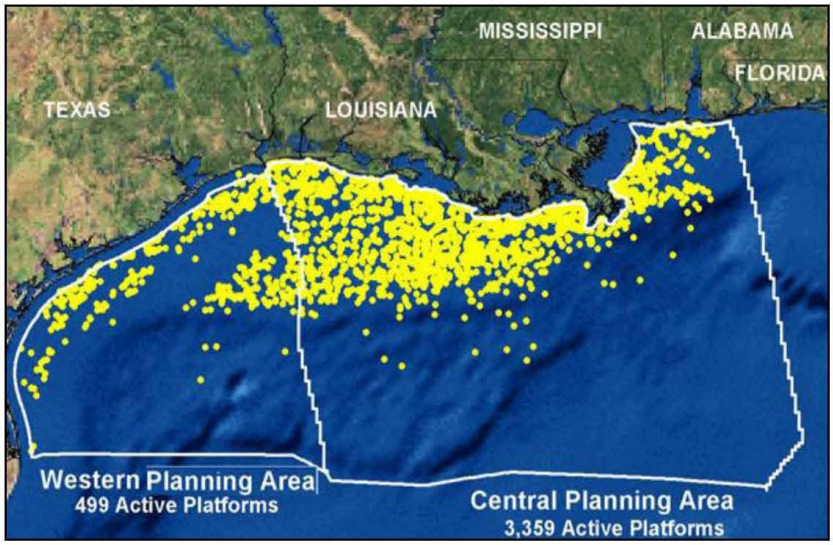
Maps 1-3 and Cards A-F

MAP 1

Coastal areas in the U.S. Gulf of Mexico

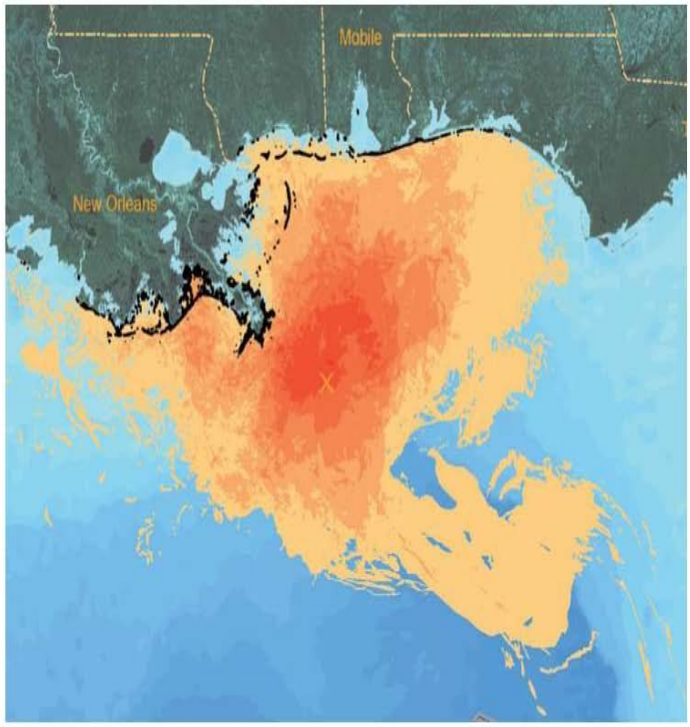
MAP 2

Active U.S. oil drilling regions in the Gulf of Mexico



MAP 3

Note: coverage refers to weeks of visible surface oil during the period



CARD A1

Birds collected during emergency cleanup to 11/2/10

- 6,045 dead and 3,125 oiled
- Three main species affected:

Laughing Gull (2,634 dead)
Not threatened or endanaered

Brown Pelican (556 dead)
Off the endangered species list in 2009

Northern Gannet (341 dead)
Not threatened or endangered

CARD A2

Sea Turtles collected during emergency cleanup to 11/2/10

- 609 dead (usually < 50/year) and 474 oiled
- 5 of 7 sea turtle species found in Gulf, all affected
- 1 species threatened (Leatherback). Remaining 4 species are endangered, including:

Green

Hawksbill

Kemp's Ridley

Loggerhead

CARD A3

Marine mammals collected during emergency cleanup to 11/2/10

- 101 dead (99 dolphin, 2 whales) and 6 oiled
- Marine Mammal Protection Act covers 28 species found in Gulf
- Three nearshore species of dolphins and sperm whales of primary concern, including:

Bottlenose Dolphin
Not threatened or endangered

Atlantic Spotted Dolphin
Not threatened or endangered

Sperm Whale (1 dead)
Endangered

CARD B

- The U.S. Coast Guard would become the lead agency to address future spills in the Gulf of Mexico. Under a new program, they would (1) continuously monitor oil detection equipment and (2) quickly stop spills and begin cleanup.
- Five new ships would be designed to maintain equipment to stop and cleanup spills (e.g., submersibles, robotics, booms, skimmers) and oil detection equipment (profilers and samplers; see CARD C1 and C2). Four would be active at any one time and at least one would be able to reach any spill within 12 hours.
- The oil detection equipment would be placed every 20 miles throughout the oil drilling region. The equipment would detect large pockets of oil at all depths to help target cleanup efforts and accurately measure spilled oil.

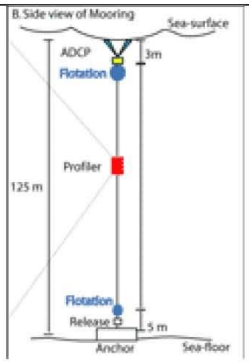
CARD C1

U.S. Coast Guard High Endurance Cutter:

This is one of the largest ships in the Coast Guard Fleet. Five of these would be outfitted with equipment to quickly stop and clean up oil spills occurring in the Gulf of Mexico. In addition, the ships would deploy and monitor oil detection equipment throughout the drilling region in the northern Gulf of Mexico.

CARD C2

Moored Profiler:



Once anchored by a cable, the profiler takes continuous basic measurements that can indicate oil at different depths, even in very deep water.

Rosette Sampler:

The most commonly used water sampling device is the "rosette". It is a framework that holds 12-36 sampling bottles clustered around a cylinder.

CARD D

- Your cost would be a one-time federal income tax payment in 2013 if a majority national vote passes in November 2012.
- Oil companies operating in the Gulf are expected to pay for the ongoing operating costs through higher lease fees.
- The program would be evaluated after 10 years to determine if it should be continued and perhaps expanded to other regions.
- SUMMARY: The Oil Pollution Act of 1990 requires companies to pay for all cleanup activities if they are found at fault. This program would, however, provide "insurance" by reducing the chance of major damages from another large spill.

CARD E

Reasons For:

- Prevent the deaths of numerous wildlife species including birds, sea turtles, and marine mammals.
- Protect Gulf of Mexico habitat including beaches, estuaries, and coastal wetlands.
- Protect Gulf of Mexico water quality, including in deep areas.
- Other:

Reasons Against:

- Many species being protected are not in danger of going extinct.
- Your household might prefer to spend this money on other things, or not so much for this.
- You might think there won't be another large oil spill like the Deepwater Horizon.
- Other:

CARD F

Impacts observed following the Deepwater Horizon oil spill:

- Oiled coastal areas: 1,050 miles
- Birds killed: At least 6,045
- Sea turtles killed: At least 609
- Dolphins killed: At least 99

If the program was active in April 2010, scientists estimate that the impacts would have been limited to at most 20% of those reported (excluding unknown and long term effects) due to thorough detection, speed of coordinated response and availability of needed equipment. As a result:

- 1,000 miles of shoreline would not have been oiled

Animals saved: 5,000 birds, 500 sea turtles, 85 dolphins

Handouts 1-9

Handout #1

A-1. Importance to you (Florida Programs):

	Not at all	A little	Somewhat	Very	Extremely	Not sure
a. Improving education in Florida's PreK-12th schools	1	2	3	4	5	N
b. Reducing air pollution in Florida cities	1	2	3	4	5	N
c. Maintaining local library services	1	2	3	4	5	N
d. Reducing crime	1	2	3	4	5	N
e. Improving water quality	1	2	3	4	5	N
f. Finding ways to reduce taxes	1	2	3	4	5	N
g. Protecting Florida's threatened and endangered species	1	2	3	4	5	N
h. Eliminating growth management restrictions	1	2	3	4	5	N
i. Increasing mass transit projects	1	2	3	4	5	N

A-2. Importance to you (Federal Programs):

	Not at all	A little	Somewhat	Very	Extremely	Not Sure
a. Providing unemployment benefits	1	2	3	4	5	N
b. Providing homeless shelters	1	2	3	4	5	N
c. Providing funding for FEMA (Federal Emergency Management Agency)	1	2	3	4	5	N
d. Protecting wildlife	1	2	3	4	5	N
e. Providing park rangers and facilities at national parks	1	2	3	4	5	N
f. Providing funding for alternative sources of energy	1	2	3	4	5	N
g. Protecting public lands from development	1	2	3	4	5	N
h. Providing reduced-fee school lunches	1	2	3	4	5	N

A-3. Other than today, have you ever been interviewed before about whether the federal government should start a new program?

_____ YES
_____ NO
_____ NOT SURE

Handout #2

A-4. Which oil spills come to mind as having damaged nature the most? Describe where and when the occurred the best you can remember.

Handout #3

If remember hearing about the April 2010 oil spill in the Gulf:

A-5. What was it about the <u>natural environment</u> of the Gulf of Mexico that you feel was most affected (if anything was) by the oil spill?

Handout #4

A-6. Have you visited any coastal area in the Gulf of Mexico in the last 12 months?

_____ YES

_____ NO

_____ NOT SURE

If YES:

A-7. What activities did you do during your visit? Please check all that apply:

_____ BEACH GOING

_____ BOATING (KAYAK, CANOE, SAILBOAT)

_____ SALTWATER FISHING

_____ SCUBA DIVING

_____ SIGHTSEEING

_____ RELAXATION

_____ BUSINESS

_____ OTHER (SPECIFY: _____)

_____ NOT SURE

Handout #5

A-8. Is there anything more you would like to know about how this program would work?

_____ YES

_____ NO

_____ NOT SURE

If YES:

A-9. What is that?

Handout #6

B-1. If an election were being held today, would you vote for or would you vote against the establishment of a Coast Guard Gulf Oil Program Trust Fund to pay for this program if $75 would be payable on your 2012 federal income taxes (i.e., paid in 2013)?

_____ FOR

_____ AGAINST

_____ NOT SURE

B-2. People have different reasons for how they vote for programs such as this one. What about the program made you vote the way you did?

If FOR:

B-3. Would you vote for or against the program, and its $75 one-time federal income tax payment, if the program would only prevent harm to the ecosystem in the Gulf of Mexico and the environment, that is, it would not affect human health?

_____ FOR

_____ AGAINST

_____ NOT SURE

If AGAINST:

B-4. Why did you vote against the program?

_____ ISN'T WORTH THAT AMOUNT

_____ DIFFICULT TO PAY

_____ OTHER (_____)

If NOT SURE:

B-5. Why are you not sure about how you would vote?

Handout #7

C-1. At that time you voted on the program, did you think the harm from future oil spills in the Gulf of Mexico without the program would be about the same as the Deepwater Horizon oil spill, a lot more, or a lot less?

_____ SAME AMOUNT OF HARM

_____ A LOT MORE HARM

_____ A LOT LESS HARM

_____ NOT SURE

Why?

C-2. How serious did you consider this amount of harm to be?

_____ NOT SERIOUS AT ALL

_____ NOT TOO SERIOUS

_____ SOMEWHAT SERIOUS

_____ VERY SERIOUS

_____ EXTREMELY SERIOUS

_____ NOT SURE

C-3. CARD F described how effective the program would be at limiting environmental damages from another oil spill similar to the Deepwater Horizon. Do you believe the program would be . . .

_____ MORE EFFECTIVE THAN STATED

_____ ABOUT AS EFFECTIVE AS STATED

_____ LESS EFFECTIVE THAN STATED

_____ NOT SURE

C-4. You were asked to vote on a one-time payment in a 10-year period. When you decided how to vote, did you think your household would have to make the federal tax payment . . .

_____ NOT AT ALL

_____ ONE TIME

_____ MORE THAN ONE TIME

_____ NOT SURE

If other than "ONE TIME", Why?

C-5. Overall, did my descriptions try to push you to vote one way or another or let you make up your own mind?

_____ PUSHED ONE WAY OR ANOTHER

_____ LET ME MAKE UP OWN MIND

_____ NOT SURE

If you think it pushed you one way or another:

Which way did it push you? Was it to…

_____ VOTE FOR THE PROGRAM

_____ VOTE AGAINST THE PROGRAM

What made you think that?

Handout #8

D-1. Has anyone in your household ever lived within 10 miles of the Gulf of Mexico?

_____ YES

_____ NO

_____ NOT SURE

If YES,

How long ago was that?

_____ CURRENTLY LIVE WITHIN 10 MILES OF THE GULF COAST

_____ LESS THAN FIVE YEARS AGO

_____ MORE THAN 5 BUT LESS THAN 15 YEARS AGO

_____ MORE THAN 15 YEARS AGO

_____ NOT SURE

D-2. In the past five years, has anyone in your household gone saltwater boating or saltwater fishing?

_____ YES

_____ NO

_____ NOT SURE

D-3. Does anyone in your household like to identify different species of birds?

_____ YES

_____ NO

_____ NOT SURE

D-4. During this past 12 months, about how many times did people in your household visit the Gulf of Mexico?

_____ MORE THAN TEN TIMES

_____ THREE TO TEN TIMES

_____ ONCE OR TWICE

_____ NEVER

_____ NOT SURE

D-5. How often do you personally watch television programs about animals and birds in the wild?

_____ VERY OFTEN

_____ OFTEN

_____ SOMETIMES

_____ RARELY

_____ NEVER

_____ NOT SURE

D-6. Do you think of yourself as an . . .

_____ ENVIRONMENTAL ACTIVIST

_____ STRONG ENVIRONMENTALIST

_____ SOMEWHAT STRONG ENVIRONMENTALIST

_____ NOT PARTICULARLY STRONG ENVIRONMENTALIST

_____ NOT AN ENVIRONMENTALIST AT ALL

_____ NOT SURE

Handout #9

D-7. At this point, would you vote for or would you vote against the establishment of a Coast Guard Gulf Oil Program Trust Fund to pay for this program if $75 would be payable on your 2012 federal income tax (i.e., paid in 2013)?

_____ FOR

_____ AGAINST

_____ NOT SURE

D-8. Did you receive a federal income tax refund or pay additional federal taxes for 2009 or 2010?

_____ I RECEIVED A REFUND IN 2009 OR 2010

_____ I MADE A FEDERAL INCOME TAX PAYMENT IN 2009 OR 2010

_____ I DON'T KNOW

_____ I PREFER NOT TO ANSWER

D-9. Generally speaking, how much <u>confidence</u> do you have in the U.S. Coast Guard?

_____ A GREAT DEAL OF CONFIDENCE

_____ SOME CONFIDENCE

_____ HARDLY ANY CONFIDENCE

_____ NO CONFIDENCE

_____ NOT SURE

Focus Group Transcripts

Pensacola Focus Group (February 8, 2011)[53]

M: Thank you all for coming, it's great to have you here my name is Bill Messina and I'm with the Food and Resource Economics Department at the University of Florida and this is Mike Scicchitano. Mike is the Director of the Florida Survey Research Center at the University of Florida and we are delighted that you ladies and gentlemen are here. We appreciate your coming and we will make this an interesting discussion session. What we are wanting to do here is just get your ideas, your thoughts, your input on how oil spills and the associated impact of the oil spills affect you. That's kind of what we're looking at…opinions, thoughts, beliefs, understandings…you know, there's no right or wrong answers to these questions. We're just trying to solicit some info but again I want to emphasize the important dimension of this is that we're talking about the environmental impacts in this particular study. We're going to hold meetings around the state, just like groups like this. We expect we may get some different perspectives??? than other parts of the state. There are other dimensions to the problem. For example, when you think about the oil spill, you can think about the impact of jobs, ???, recreation, commercial fishing…environmental issues as well. We're going to be concentrating on here this evening so we may touch on some of these others but this is the one we're really going to be trying to focus on this particular session this evening. We will be using some worksheets, handouts and worksheets. I'd like to collect them so don't put your name on them. We don't care whose name is used, comments…we are recording this but again it's just so we can go back and transcribe…because I don't want to have to worry about taking any notes. I mentioned to some of you all, we have the phone there. This is a multidisciplinary, multi-university study and we have faculty from Colorado State University, Appalachian State University, Ohio State University as well, are also involved. They're listening in on the phone, they shouldn't be….you should have your phones muted but I wanted you to at least be aware. And again your comments are not…the comments on the worksheet are not going to be attributed to anyone; your individual comments are not going to be attributed to anyone in particular. We're just trying to get as much input as we possibly can. What we're going to do is we're going to use this information to develop a survey that's going to go out to thousands of people throughout the state. Focus groups kind of help us to develop the surveys so this is really important what we're going to do this evening. So we appreciate you being here. I want you to be relaxed and comfortable, if you have any questions, please feel free to ask, if there's a term that's used that you don't understand, ask for further information…anything that we can do to make sure we all understand each other and get as much out of this particular session as we can. Ok, with that, I just want to throw the discussion open. If you were to describe the oil spill to someone who wasn't familiar with it, what would you tell them? How would you describe it? Any comments at all? Somebody coming in, you're from Africa or Asia and haven't heard all about it.

[53] Throughout the transcripts "M" is used to reflect comments by either moderator (Dr. Scicchitano or Mr. Messina, Bill or Mike, respectively) and "P" is used to indicate a comment from one of the participants.

P: It was the worst thing that happened to the Gulf coast as far as I can recall, besides the hurricane.

M: Mm-hmm.

P: The damage was unbelievable, the worst oil spill, one of the worst oil spills recorded in history, at least down here.

M: We'll talk about that later.

P: I've seen a lot of friends of mine that sat on the beach as the first patches were approaching shore and you could smell it and all that. We sat on the beach and we all said, things may have changed and it will never be the same as they were.

P: Right.

P: Or as we've known them all our lives.

P: Right.

P: You know, I'm 48 years old and we all grew up together and they have seen a whole new thing, right on the horizon.

P: I was in Indiana when it happened with my mom. And I was just talking to T and when it happened it had a severe emotional impact on me. I've lived in Florida for 37 years, 13 of those years on the Gulf coast. I have a hard time explaining to my mom, my mom was like, what's the big deal?

M: Different perspective?

P: Exactly, I said…it was very emotional for me. And the best way I could explain it was that …Florida is my home, I love my state, I love my beaches, I love the Gulf coast. Something that has happened could destroy that whole lifestyle. It may be destroyed and never be the same. And I was given different replies to that from people who are from that area. People said to me, well, so. I guess those people will just have to go live somewhere else and find something else. To which I replied, that's not an answer, those people, 7, 8, 9, 10 generations of people, they do not want to leave. So that's…it was very emotional for me.

M: Are there particular things you know about the environmental impact that you've read…we've all read something.

P: Well, the fish, the flounders and all that. It's hard to make myself eat them. It's difficult, we've been eating catfish.

P: I have little children and I don't want to let them get in the water just because you don't know what kind of effect that has…kids swallow the water and you don't know how much that's really theirs.

M: Showed some significant environmental impacts. Was there anything significant about this particular oil spill from previous oil spills that you might be aware of?

P: Well, right here in our house.

P: Our back door.

P: I supposed that makes it most different to us. (General agreement)

P: Back in the 70's there were a couple of oil spills that affected this area. There was one that Mexico's platform that was far worse, actually than the ??? but it didn't directly impact this area. But there were the tar spots and I remember going out to the beach and having the…you'd see these spots that were about 10-12 square feet in there. And then there was a tanker that had a big leak out there and that affected the shore but not much. And one summer's all you saw of either one of them. I haven't been out to the beach so I really don't know what the continuing impact is on it.

P: I kept hearing about the with the Exxon Valdez spill how 20 years later, they're still finding oil. It made me wonder what's going to happen here.

M: Very valid comparison, I think for many of us who can remember back to when …1989.

P: I was just going to say one thing, I think that there's a lot more data available now because of computers and everything, overwhelm a lot of us. We're seeing so much information that contradicts; it's overwhelming how much data we see.

P: Another thing, the thing that made me ??? the man, the second guy from the…was talking about every day on TV, seeing that gushing…that stuff and thinking that when you heard that these guys knew that something was wrong and they tried…the fact that this possibly could have been stopped. That this could not have happened and that is was the money or someone didn't do what they should have done. That anger, I felt so angry that people died and our way of life whether it's right here in our back yard or whoever's back yard, I was just angry and still don't feel how every much money BP's ending up having to pay out and whoever loses jobs related at the BP will ever be enough for the damage that's been done…and the public trust and whatever and all the loose things that have been done. They'll never get caught up or pay up for what they've done. And the environment and the fish that are dying…and like you say, it'll be there for 20 years. (General agreement) There're will never be enough money to fix that.

P: And of everything we have heard about, I can't help but wonder what we don't know about it as far as, the destruction of wildlife and the ecosystem and injured animals.

M: In terms of the size and scope of this….A you kind of got into it, how do you think this compares, and again none of us are engineers, I don't know, C, you may be. How do you think this spill compared to other spills, particularly in US history? Any ideas? Bigger or smaller, about the same?

P: Probably the largest one in the Gulf.

P: I don't know a lot about the size of other spills but it just seemed enormous to me.

P: When they compare the size of spills, the size of the state, then you know it's pretty big. I don't know how much oil is still out in the Gulf. I heard that billions of gallons are still out there unaccounted for?

P: I've heard that ???back into the water.

P: And that's the thing you hear, very different perspectives, too.

P: And I don't know how they estimate how many gallons…how do you figure that out? I don't know, I'm a nurse, I don't have to figure that out.

(General talking)

P: Well that had that ??? report recently, not knowing much about it and how it worked and all. They said they traveled 80 miles or so, southwest of the Deep Water Horizon's spill from the bottom and found approximately 100 square miles of oil just above the surface, sort of an o-ring.

P: Right.

P: But they didn't describe the thickness of it so we don't know the volume but still that much area of oil sitting on the cold, 6,000 foot deep Gulf of Mexico might really be there.

P: I saw on this news story where this guy was on the beach and he had a shovel and he said, let's just dig down 6 feet and see if we can find the oil. And of course, these cops were right there…you can't do that, no.

P: Why can't you do that? Dig that hole and see what's down there?

M: You mentioned the Exxon Valdez, anybody think of any other major oil spills in particular? You mentioned one on this item over there.

P: I know there's…in Africa they get big spills all the time. It's frequently over there but the worst things are the Valdez and the…

M: Well, ok, that's real helpful to get us started. I want to give you all a handout. It's got a series of slides on it. What I'd like you to do is try not to flip ahead. I want to go through

these one by one and we'll discuss them and make sure to see if they're clear, see if there questions, and kind of pass these around. And we'll talk about them, we'll go through all of them, they're power point slides, but we wanted you to have some handouts.

M: So this first graph is just a bar graph. It contains all the US oil spills, the Exxon Valdez, which X mentioned, and the Deep Water Horizon. And you can see the difference in size in terms of millions of gallons or barrels of oil. I don't know how you want to look at it. It's distinctly different in terms of scope and scale. That's not surprising because the Exxon Valdez was a tanker and you had an indication what the supply was, more or less, how many gallons were on there. And then the 2nd slide that you got on that page is a map. The map's from October of 2010 and it shows the areas of gulf waters that have oil on the surface and how long the oil was present. So, not surprisingly, in the center part, the oil was present longer than in the periphery. Where it got out there and then probably got… Most of the oil impact of the coastal zones of Florida, Alabama, Mississippi, and Louisiana. And you can see the black on the coastal areas and the barrier islands, that's an indication where the oil came ashore. In this graphic, light orange represents where oil is present for 1-3 weeks, where the darkest orange areas had oil for 16-18 weeks.

P: Surface oil?

M: Surface oil, this is just surface oil. So, any questions about either of those? Are they fairly clear? Any issues that aren't clear from the way that information is presented? Did the information on these slides seem fairly presented or neutral? It's one of a tragic situation that you try to present information as objectively as we can.

P: Neutral.

M: Now the top on the 2nd page with the top slide, "Effects on Cultural Habitats". A little over 1,000 miles of shoreline in the Gulf of Mexico was affected, estuaries, coastlines, beaches, all affected. And the problem with these areas, they can kill vegetation which accelerates erosion, cause further loss of coastal lands. There's all kinds of ramification impacts to these oil spills when they hit the shore. And that was particularly the case with the Exxon Valdez, because that was a relatively narrow channel. A lot more impact on the coastal areas, there, than in this particular case. Although this obviously substantial ??? Any questions about that?

P: This particular slide?

M: Next one, the "Effects on the Marine Environment", dead and dying coral reefs were discovered on the sea floor near the blown out well, almost certainly from exposure to toxic substances, according to marine biologists. Sometimes it's not always absolutely possible to prove but, all indications from some very capable technical scientists indicate that it's a result of the exposure to the toxins. Now you were talking about the subsurface,[ ], pockets of oil, ??? of oil, they're breaking down about 10% of that of the rate of the surface oils. The surface oil dissipates more rapidly than the subsurface pockets. That's one of the

things that we know. We don't know exactly where all the subsurface pockets are, we know they are not breaking down nearly as well as the surface oil.

P: Yes.

M: And they found a layer of black residue on the sea floor which has been traced to the oil spill and certainly can affect a food well. Small marine creatures that are bottom dwellers, the basis of the food chain and again how would you be affected by this?

P: The reproduction and everything else.

M: Absolutely. Any questions about those? Clear?

P: Clear.

M: Effects on animals, there's actually about 15,000 species, animal type species, in the gulf; about 8,000 in the region affected. And these are approximate numbers, about 2500 that could potentially be impacted but there are about 400 that they think are the most likely to be impacted. We're just looking at 3 general categories here, birds, sea turtles, and marine mammals. They collected over 6,000 dead birds and they found about 4300 oil birds that they collected during the clean up; that they tried to clean up. Some of them made it, some of them didn't. The number of dead birds probably exceeded that because there was no way they were going to find all of the birds that died at sea or might have been eaten by passing fish or something like that. Sea turtles, 609 dead, 474 oiled sea turtles were collected during the clean up. Marine mammals, there were 101 dead, 99 dolphins, 1 sperm whale. Another whale, and 6 that were collected in oil, were collected during the cleanup. Some of the oil ones will recover, some of the oil ones wouldn't, but again it's not possible to capture all of the damage to the animal species. Certainly, there were some significant impacts on the animal species. Is that fairly clear? 100% you think?

P: Is there any clean up going on now?

M: There is some remaining but not…the easiest things are ??? clean the shore line and animals and that sort of thing, except in a few instances, I don't think there's much of it coming to shore, is there?

P: I don't know. Almost every day there's a crew over there, at ASP Mains where I work, ??? almost always a small crew there.

M: So they're doing something.

P: I don't know if they're doing anything or not, but they're there.

P: We have a few…I know of a few mats off Corido Key and in Alabama, in Alabama, you know, west of the FloraAlabama line on Corido Key, they've got a pretty good clean up operation and you get into the Pensacola Corida side, I've witnessed a messy clean- up

operation but they are removing sand. Whether they're cleaning it or returning it, I not sure. But they are supposed to be returning sand or making sure we don't lose sand.

M: Now some of these species, there's a brown pelican photograph, it's off the endangered species list in 2009, but it's still…the populations are at risk. The loggerhead, excuse me, the leatherhead turtle, all 5 of those species are endangered and the bottlenose dolphin there is 10 basically species, 3 near shore, 7 off shore. The breadth and scope of these things are quite significant. Next slide, "Potential Long-Term Effects on Fish". Now the most sensitive stage of the life cycle is the fish eggs or the larval cycle. And they're often destroyed or damaged by not only the oil but by the dispersants that were used. Interesting, after the Exxon Valdez spill, they went 3-6 years before they really observed the impact of the fish population. So, it's not as though you see the impacts right away. There are some longer term effects, certainly, than many of the ??? like this. The Gulf is the spawning ground for many kinds of species including the blue fin tuna. The blue fin tuna population now is only about 10% of its historical level we have in the 1970s. That's not related to the oil spill but the blue fin tuna were spawning at the time of the oil spill. So that's certainly becomes an issue for the blue fin tuna which is a species that has some challenges in terms of its population. And then, this gets at something that you were talking about. A lot of commercially important species may not die, but the concentrations of oil may be increased through the food chain. The lower lever marine creatures that die as they eat more and more of these creatures that have oil contamination: the concentration in their bodies can also increase.

P: Some may just leave the Gulf. I know you go to the shore and while surfing, the oil is coming to shore. We had good waves, really, really good waves during the week that most of the oil was coming ashore and I looked at a big wave heading my way and I paddled toward it. You never blue sharks in close and a big blue shark about 10 feet long was in the wave that I was paddling after and then a big swell, really sluggish, and the wave went past him. He was in the trough of the wave and he stuck his face up out of the water and looked like he was gasping for air. Like that, and all I could think, I sure hope he follows the coast and finds his way out of here. And so, a lot of fish, may just leave the gulf if they can.

M Yeah, well, this next slide is "Contributing Factors to Gulf Oil Spill". Hurricanes and tropical storms certainly have the potential can impact the gulf oil spills. Human error, I think as we've seen in the case of the Deep Water Horizon…and the quantity and location of platforms in seaports. The northern Gulf of Mexico has over 3800 active platforms that produce 1.5 million barrels of oil a day. That's 65 million gallons per day. The numbers are very significant. And the gulf coast has 10 seaports that import 6 million barrels or 252 million gallons a day of oil. So, any time you have an operation with that scale and scope, the more facilities you have, the higher the risk of potential oil spills. Any questions on those? Are they presented clearly?

P: I think they're pretty simple.

M: Ok, location of active platforms, each one of those dots is an active platform. We said before that over 3800 active platforms. Look at the footnote, temporarily inactive. There's

3,000 well and 650 production platforms, there's 23,500 permanently inactive wells in the northern area. Huge number, huge number. Not all of them are even very well mapped. Some of them go back to the 1950s and they're not entirely sure where they are. Where they are physically, the companies that were responsible for them, they drilled them in the 1950's and may not be in existence anymore, so there'd be all kinds of questions. If one of those were to blow out, who's going to be responsible for them? And then an interesting statistics, in the little box on the right, there's been 163 spills over 50 barrels. Now granted, 50 barrels is not very large. But that's just in the 10-year period that should say 2001 to 2010. (I just noticed that typo) None of them, the Exxon Valdez was the second largest oil spill, obviously all of these are considerably smaller.

P: Well, why if they're …considered permanently inactive, if they're not going to be using them anymore, why don't they just somehow do away with them. What do they make them to this position in case they ever want to go back to them and use them again? Is that the purpose?

P: I think that's the general consensus. It may not be pumping enough oil now to be economically feasible but maybe down the road it will be.

P: Yeah.

P: Well the surface structures aren't there anymore.

P: Well in a lot of those cases they're not but in some cases they'll have a structure of some sort. Some of those structures on top of an oil well are not very large…just a large buoy that a ship can come and hook up to.

P: Yes.

P: And so in that case they might just leave something like that there.

P: It takes a lot of money to go in there and remove???

P: Well the 23,000 figure, there just caps there.

P: They won't uncap them?

P: Probably not because many of them have been capped.

P: So there's not a risk that they'll blow or anything? I mean there's a chance that they would. But it's not…if they've been out that way since the 50's, then…

P: You would hope.

M: Now you all can hang onto this although, if you see…if there are questions, issues, circle, mark on it, question mark, give it back to me, anything we can do to try to get this as clear as we possibly can. We'd like to ??? accurately as possible.

P: One question I got about that?

M: Yeah.

P: It doesn't address, the floating dock, those are…

M: Those are among the active platforms here. (General talking)

P: It's all endangered using the species list of 2009 but it is still off the master list?

M: It has not been added back. (Others talking in background)

M: So, it's fairly well presented? Neutral? Yes, no? Unfortunately up to now, there really haven't been any measures in place to stop the occurrence of oil spills. The purpose of this survey that we're going to develop as a result of these focus groups is to determine if there's citizen support for a new program to reduce the impact of future oil spills that still might occur in the Gulf of Mexico.

P: Particularly in Florida.

M: Would you generally be supportive of it without knowing any of the details at this point…
something that you would generally be supportive of?

P: Supportive of?

M: A program in play, and we'll talk about some specifics about it, but just generally, if someone said, we're thinking about developing a program to help minimize the future possibility of oil spills.

P: I would support it.

P: It would depend, if it stopped people from drilling, and we would have to import more, than that would drive the cost of gas up and I would be completely against that.

P: It would be counterproductive almost. I was just thinking people in Florida have to pay for it almost not ??? I say we fry the ones who were in charge of the last mistake and let that be a little motivation and help some of the greed not make their decisions for them.

M: In the case of these oil spills where they're identifiable to an individual corporation. The corporations…the laws are such, that the corporations have a tremendous financial responsibility. Now, somebody said it doesn't really compensate people for all the, in this

area here, for all of the detrimental impacts. There's no way that you can compensate anybody for all of that but…clearly there would be some financial impacts that go well beyond whatever remuneration that they could provide. Ok, for the rest of the focus group we're going to be talking about a proposed program (put it up here)…toss out an idea for a program, we're going to talk about how it would be funded, and then we're trying to get your input, say other issues related to these first two. So that's going to be the balance of the focus group here. I'm going to give you a worksheet now. Take a minute, it's about a page, read it please. This is one I'm going to take back, but don't put your name on it. If there are things that are unclear, mark them, question mark, circle, however you want to do it. We generally get very positive, very helpful feedback on something like this. So take a few minutes and read this. (Passes out papers) It proposes a program to reduce the damage from oil spills in the Gulf of Mexico. It's not the only idea, it's just one idea that's being proposed and considered that we're looking at in the context of this particular focus group study. (Background talking, can't hear) If you want to rewrite any statements, you can write them in the margin, to make them clear. If you have questions, comments, or critiques, be as specific as you possibly can.

(Silence)

M: It looks like most folks are done writing. Is there anything unclear about how this program would work? I mean obviously you can't describe in detail on one page, but we tried to lay out the basic framework and we are not advocating for or against anything like this. This is just something we're trying to toss out and get the response of regular people.

P: I want to know what it's going to cost?

M: We'll talk about that in a minute, for now, let's just look at the program itself. Funding is going to be key, obviously.

P: We need it.

M: But, we'll talk about that in just a minute. Does it seem like it'd be feasible? Would it be possible?

P: The funding should come from the people making all the money off it. They're putting us at risk, they should pay for the costs.

P: Yeah, but if they're going to pay for it, then they're going to have control over it, too.

P: Yeah, they're going to have control of it if they pay for it.

P: This says Coast Guard ships are going to be monitoring it.

P: Right, that means they're not going to pay for it. Coast Guard and federal government's got to pay for it. Whether they get the money back from oil companies, that's a different story.

P: Well, the oil companies have to pay for it, we'll ultimately pay for it, at the pump, anyways.

M: Well, you could argue that it's going to reduce their probability and it might but…oil companies seem to be able to pass through those kinds of things to the consumers pretty well. Is the program described pretty well? Do you have any things you think we haven't addressed and we should? Just scribble it in the margins, there. Was there any particular information that you didn't think was presented in a scientific way?

P: The only thing I didn't understand was what should be the ??? between state and federal waters.

M: Ok, that's a good question. I'm sorry I should have mentioned that. You read in most states, state waters go 3 miles out. In Florida, in the Gulf coast of Florida, because we've got the long shallow areas, our state boundaries actually go out to 9 miles.

P: So these are nautical miles.

P: So these go out 9 miles?

M: Yeah in Florida.

P: The Gulf states is 9 miles.

P: Is it all the gulf states? Because I read that Alabama, Mississippi, there were places there where it was only 3 miles.

P: It has dropped into the other states, yeah. But Florida is definitely not one of them.

M: It's definitely not because of the shallows that we have here. So that's the distinction here, the state vs. the 3 – 9 miles is an issue of where the state is…

P: Inside of that limit, the ships would not be responsible, is that what you're saying?

M: Not that they wouldn't be responsible, to respond, although they might not be able to physically but if it was too shallow.

P: I understand that part.

M: This is just for the monitoring, for purposes of the monitoring. They wouldn't be monitoring, there would be a larger buffer area along the Florida coast than there would in some of the other states. There would be a 9-mile buffer where they're trying to pick up and monitor. And it wouldn't just be for oil, it might be for dispersants and other trace chemicals in the water that would be indicative of the problems of the oil spill. You think

the program is possible? Do you think it would work? Again, funding aside, we'll talk about that in a minute.

P: I think it would be a very good program.

P: I have a couple of comments.

M: Ok.

P: And that is you know, you're talking about this oil that would go straight to this service and it seems like watching those dispersants spray, it might have made it easier to see what they were working on, fix it, and cap it. And it was also sending oil to the bottom so it would stay on the bottom. And I don't see anything in here about setting up some sort of vacuum systems that would (likeWalstream Corp. hoses or something like that) that long that they could actually send to the bottom and they could start sucking this stuff up from the bottom before it even arrives on the surface. I also remember there being a lot of talk about there was no manned submarines available, so everything was robotics. So if they would develop some manned submarines and have them on the ready to assist and serve, and have people down there and have these robotics work might be helpful.

P: Probably be a lot more money than it should for a submarine.

P: Yeah, they're not that bad. Australia has them, Japan has them. Other countries have them, they're really not that big, they're not (Jacques Cousteau had them!)

P: They're not to do the work, they're really just to monitor.

P: They're not to do the work, just really to observe and help see what's going on.

M: These monitoring stations would monitor the whole water column. In other words, they wouldn't just be monitoring the surface, they would be monitoring all along, trying to pick up. So they would catch the subsurface.

P: And then if you had crews that got good at these manned submarines and could use them fairly often, there would be ways for mapping the surface, the bottom of the gulf using sonar, laser detection, light hours, something like that. Which basically the laser could give a better feel for what weird structures are down there which might indicate that it's an old capped well or something like that. And then, we'd be able to know where they are better than we do now.

(Several agree)

M: Did you have something you wanted to add?

P: Well, the only thing I'm thinking is that this program seems to be a very, very expensive program for one purpose and I think that if we take that in a fiscal way, looking at it long

term, if you take that money and put it into prevention instead of detection, you're going to have a lot better return on your money.

M: OK, good point. Is there anything in particular that you think you can do to improve the program that we've laid out here?

P: I would like to safeguard against politics from getting involved.

P: Good luck (laughter)

P: If the word was out BP was saying it was their oil, and the people started heading out with their ships and their little inventions, to ???up the oil and all that, everyone was put to a halt and then we're handling it and I think that if you have a disaster like that, they ought to say, whatever you can do to get this oil up before it hits the beaches, let it happen. But you also need control, you can't just let people willy-nilly running around doing that because you'll have crashes, accidents, fires, all kinds of things.

P: Do I remember correctly the booms weren't all that effective? Particularly in the beginning until they changed the booms.

P: Well, the problem with the booms is if the water's fairly calm, the booms can be effective. But as you get the wave action, it washes over the tops of the booms so it's better than not having anything at all but depending on the water conditions, the booms may not be very effective in containing the oil, so that's one of the issues there.

P: We're very fortunate we didn't have a hurricane. (General agreement)

M: All right now we'll talk about some of the funding issues. How are you going to pay for something like this? Florida citizens would be expected to pay a share, what is that share, we don't know. That's far more involved question that we can get into for purposes of this study. But in terms of how to pay, what we've come up with are a couple of suggestions for a one-time payment for the citizens of Florida and for regional. If it's national, there's an argument given that a sizable proportion of US seafood consumed in the US comes from the gulf. There's an argument that people in Chicago have an interest in the health of the gulf ecosystem. So it's not just an issue for people living in Gulf coast and people living along the gulf coast of Florida, Alabama, or Mississippi, Louisiana, or Texas. We're going to talk about two different payment methods that we've come up with just as proposals. We want to get your input on some other ways to do it. And what we had thought about, we thought about others, but for the purpose of the focus group, we had thought it might be done as a one-time payment, a surcharge on federal income taxes, or a surcharge on property taxes. Those would be, both of them would be one-time payments. Reactions, ideas for other ways about going about it, that's what we're kind of looking for?

P: Income tax would get everybody would have to pay some.

M: Mm-hmm.

P: I mean every family has to pay taxes. Property taxes wouldn't cover it because a lot of people rent.

P: Property tax would be outrageous. Federal, it needs to be nationwide. (Background talking) We didn't cause it, we shouldn't have to pay to fix it.

M: Well now, it wouldn't be …Florida's not going to pick up the whole tab. It would just…somebody would have to decide what the share for each state is and how you would do that would have to be seen.

P: If there is a charge, I think is should be a blanket across the US. I haven't' been to get to the beach in the water for 5 or 6 years myself. Don't plan on going back, it's just not something I enjoy. Now I eat fish, you can look at me and tell, I like to eat but I don't see where it's more of our responsibility than it is anybody else's, other than the people who caused the problem.

M: Now in reality, renters are going to pay if the property taxes go up because presumably landlords would…(General talking) increase rents to offset, so that's something…directly, you might not feel right away but renters at some point are going to be picking up some of it as well. Other ideas on how to do it? We're looking for ideas.

P: It's gas taxes but I mean the users of fuel, little bit of gas tax would augment, I don't think you could have one funding source for this type of thing.

P: If you say gas tax right now, I think people would…

P: It'd be $4.00 a gallon in a couple of months.

P: I think it would be a result of whatever charge or surcharge or tax or anything that's assigned to this sort of program. I don't think you'll get anybody to agree to pay for it.

M: This is what we're looking for. We appreciate it.

P: I noticed several soldiers that have come back from the Middle East and one of them was stationed in Bahrain? A couple of years ago and he told me that's kind of like the Las Vegas from Saudi Arabia. That that's where a lot of your oil sheiks go to party and stuff and he's talking about Bentleys and Jaguars, Mercedes, all kinds of these exotic vehicles that we've never heard of…they'll have platinum or gold body plates and the interiors are completely encrusted with diamonds. All right, those cats make enough money, I don't see where we need to have tax. I think it all ought to come out of their hides but I don't know if it will ever go over like that. You can say that they can't pay for it because our oil, gas will go up. They're paying for it anyway, they're paying it off if we do pay for it. It's all so dirty anyway. I don't know what the right answer will be anyway. I think it's good to do something but…

P: We need to do something. (General agreement)

P: And I don't think Florida should have to bear the cost of everything considering that we have millions of tourists that come here every year all year long. And that the food from here does go to other parts of the country and they want that food.

P: Yeah, they want that vacation too. (General agreement)

P: I sometimes think through Homeland Security, they've got all these branches in the military, they're all great. If you had a plan that included also a portion of Homeland Security protecting ourselves from natural disasters and things like that become a function not only of Coast Guard in case of an oil spill, but Army, Air Force, Marines and some of the money that goes towards that. You know they invent all kinds of cool things, ways to deal with this and be ready in the Gulf of Mexico, off California, all over the place. And it gives great training to all the branches of the military.

M: Did you have something?

P: You said we just need to find a way to stop using fossil fuels?

P: Yeah. There are countries that do it, why can't we do it? It's money. It's all about money.

P: There's other countries that don't use fossil fuels?

P: There are other countries that do other things in addition to, it's not solely…

P: Brazil doesn't use very much. They've converted most of their automobiles to sugar cane derived ethanol.

P: I thought they had a fuel out of water, hydrogen, I think.

P: The cost of the power to do that, I think is still too much. Yeah, Brazil started an ethanol program back in the 70's. It's kind of ridden up and down with the price of oil. Most of their auto fleets now, a vast majority runs on ethanol but it's sugar cane not corn the way we do here.

P: I have a question, did Alaska come up with a program after their oil spill?

M: They did.

P: Who funded it?

M: I'm going to say I don't know. There is a program in place, I believe that this proposed program is a spin-off of sorts of the Alaska program but I don't know the details of it.

P: Do the gulf states have revenues from the companies like Alaska does?

M: I'm sure. Alaskan population is so small that the oil revenues on a per capita basis are a lot more substantial than it would be for the gulf coast.

P: They get a payment every year with their tax returns.

M: Yep.

P: I don't know what kind of money and what that's money, in the gulf states is tied to, it might be already…marked for everything else. (General talking)

M: Any other ideas for proposals or for ways to pay for it? This discussion has been exactly what we needed. I just wanted to make sure because I have one more discussion that I want to launch here, the third part of that one I just mentioned.

P: Look at this map. I don't see any active platforms in Florida. Is there drilling on the Florida part of the gulf?

M: There is no drilling off the coast of Florida as it is right now.

P: So if we're not getting any of the benefit of it, why should we have to pay for it?

M: Because I would argue that what goes on 30 miles west of here often goes to Alabama. It certainly has impacts, potential impacts on Florida. We've certainly seen it, we've seen oil on the beaches.

P: I would imagine the monitoring would go along with Florida coast gulf side. (General agreement)

M: Absolutely, yeah. Now how far down the coast would have to be determined.

M: Florida's at risk, whether we benefit from having oil, ??? I suppose there's tax and employment revenue.

P: An ounce of prevention is worth a pound of cure. We need to prevent oil spills.

P: Because tourism is big down here. (General agreement) It's not that big in the other states.

M: It's a little piece of Alabama, a piece of … the part of Louisiana is not like what you all have here in this part of the state with the beaches and tourism. Another idea?

P: We're trying to get them down here. (General talking)

P: I know the first time I stayed at a hotel in Florida when I didn't have a Florida address; I was paying a 15% tax. I said well, I think I'll go stay with my parents from now on.

M: Ok, good. Well, this is the last part. What we want to do is we want you to read a proposal on program funding. Again this is another one where we'd like your input. Scribble on it, say you like it, say you don't like it, say you're confused, whatever comments, observations, rewrites you want to do. And again, we'd like to get this back from you as well but no name on it. This is our worksheet two. (Passes out papers) And there are some questions at the end we'd like you to answer.

(Silence)

M: Ok, you can keep writing if you like. I'm going to go ahead and …first of all, was there any information that you needed or wanted before I answer these questions? Any information that you thought was lacking?

P: The household name, I mean is that going to cover the people that don't pay taxes, like 10 illegal Mexicans live in Pace where the one got killed in one trailer? You going to make them all pay $50 apiece? Are you going to make it even and justify that everybody is benefiting from our area economy.

P: Well let's face it, when they're illegal, they're illegal. There's a whole lot that are getting, that shouldn't be getting. That's a whole different issue. If they fall off the ladder and break their neck, we're stuck paying the hospital, we're taking care of all their medical bills. That's a whole different issue.

P: That's not that unreasonable of a price but I would not…if I had to pay $50 for my wife and two children out of my household, I've got a buddy at work that's got two young guys living with him, I think each one of them should have to pay $50 not just the house. It kind of depends on how it's handled.

(General agreement)

P: I think each social security number well…

(everyone is talking)

P: Do you feel $50 is an insurance coverage paying for this service?

P: Sort of but it's almost unjustified because somebody else should be paying for it.

P: I'd be out $50 a one-time fee is going to pay for a lifetime program unless you do it every few years because there are new families that start, every few years.

P: I think it's a good idea but again we did not the end results, we don't know what's going to happen. We don't know the results, we just don't know. The platform was supposed to be fail safe, it's not. So that proves that systems are wrong, people running it are wrong, safety factor's wrong, technology's wrong…unfortunately, it happened before and it can

happen again. We can do our best to do our safeguards and go over those things and make sure it doesn't happen again to the best of our ability.

P: But you still have to have a program like this for when those things happen.

P: Yeah.

P: They're going to happen so by saying yeah we understand there's a risk that's it's going to happen, you still have to…like insurance, we all know we're going to die…so you better put some money aside to bury your momma and daddy or whoever. Because if something happens, it's going to happen and a smart person is going to be prepared for it to happen. Yes, we've got to keep up the safety and we've got to make sure everybody knows this is what you do when these are the issues, things like it looks like it's going to fall apart or something's going to happen. You still have to have the framing and the people that know but a smart person will have a plan when those things go wrong, this is what we're going to do. This is the money we've got set aside for when it goes wrong, here's how we're going to clean it up. You still have to have a plan for when those things go wrong and whatever, $50 doesn't sound like a lot of money to me. But you've still got to have a plan and have money set aside for cleaning it up and you've got to have people, like we have emergency preparedness that we do in hospitals. We plan and we plan and we have fake airplane crashes so that all hospitals know that we've got all these ???airplane crashes and you've got 200 people coming. And then they'll say x of them go to Sacred Heart, and x of them go to Baptist, and you've got to know, you've got to pretend that these people are hurt and they're coming to your…you've got an onslaught of people coming to your facility and you've got to take care of them. And you've got to practice and you've got to practice and you've got to practice. If you never practice, how are you going to know if you're prepared to do what you've got to do? So you've got to have it, you've got to have something in writing. You've got to have a table talk discussions, play dates so everybody knows how to do this. So everybody's going to make mistakes, yeah, you've got to know this is going to happen, the uncertainty and everything.

P: It's all a bunch of ifs, so, but would they be able to meet the budget, over budget and things like that. I don't know.

M: Yeah, that's a lot more detail than what we're able to get into here.

P: So a one-time fee sounds good, but you all are talking about a lot of technology and a lot of materials and equipment that's being put to the Gulf that's not going to stay in 2 -4 foot seas. I mean it's got to run all the time. There's going to be crews on it, lot of equipment, lot of manpower, fuel…

P: And hopefully, if the plans ??? it's presented and people out there are saying, yeah, I don't mind paying, but I don't think $50…hopefully the people out there are going to understand. If you all say or whoever does it, they'll say, well it's going to be a one-time fee of $50. Hopefully, most of them will say, well a one-time fee of $50 times however many people who are in this state might not be enough. And you may be you've got to come back for a

few years. We know we said one time but …we might need to up the ante because now it's 3 or 4 years later. We haven't had an accident but you know like the economy and everything else, it's all gone up, now we need to…

M: So there's certainly a lot of capital costs, up front capital costs as well as the maintenance costs in something like this. There's no question about that and the budgets would have to be written out.

P: It's like anything else.

P: And if you do it one time, what about when new people move to Florida?

P: Maybe an impact fee.

(General talking)

P: I think it's a very good idea to keep our beaches safe and our wildlife, because that's our big attraction. It's beauty that could be gone forever. I think it's very sad to see it destroyed.

P: We need to do something to protect our beaches.

P: And is there another way we can do it, instead of putting big pipes in the water? Is there some kind of thermal imagery or some kind of distant checker that can be done from a satellite or something? I know that would probably be way more cost up front but if you knock down all the maintenance and 95% of the maintenance man hours.

P: This is just one example of a proposal? There are many different ways.

M: Sure. There's any of a number of ways that we can approach this. If you get some other ideas, I mean that's an excellent one. Maybe there will be something …

P: I don't understand the technology that's out there. If we can shoot around the corner and a bullet blows up, then we can do things like that, than how come we can't do something a little more cost effective on that?

P: Having the program in place would help prevent us spending large amounts of money later and losing jobs and having to wait in line for BP to pay up or make do. And you can't replace dolphins and pelicans after a while. How many more times can you go through this before it's extinct?

P: And how many months did it take them to cap that oil?

M: I think some of these issues will certainly be addressed in the aftermath of the Deep Water Horizon. But the reality is, the question is do we want to do some other kinds of things to help insure that maybe we can't insure that it won't happen but that we would be able to respond more rapidly.

P: I think that there are a lot of people that feel the way I still feel. I'm still very angry at BP and I would be resentful at having to pay but I would bite the bullet and pay 50 bucks. I would to prevent it from happening again.

P: And it seems to me like looking at it as a state, it's a great way to start but the project's so big, you have to have federal help, just about.

P: The problem I see trying to figure out a payment is that addressing whether it's every household or every citizen or whatever…I don't remember a fee like that ever being assessed in Florida or anywhere in my lifetime other than with vehicles and stuff like that. But the only way that a program like this is going to be funded to the level that it needs to be funded is a federal funding. And instead of deciding a budget and everything else, however they come up, whether they've got to raise taxes or whatever to do it, that's going to be something entirely different. I think it should be a federal budget, an item that has nothing to do with specific fees or costs or anything. The only way that I could think of with property taxes and stuff, is that you're always paying something on there. They always add to those lines on there and you're paying for the local fire department or whatever or stuff like that. They can do it that way.

P: That's a good idea.

P: I think you mentioned, maybe people in Ohio, maybe they like to eat seafood, so it may have to be done.

M: Well this is all part of the discussion; the discussion's all part of an analytical technique known as willingness to pay. People can say, I think that's a worthwhile goal, but I'm not willing to pay anything for it. Well then, it's not that high a priority for you. You don't have the willingness to pay, and then it's not a priority issue for you.

P: I would be willing to pay my…people with children, it's going to be assessed per person or household, so that would make a difference too.

M: Sure. Absolutely.

P: And I think until the economy recovers, a lot of people wouldn't think it was worth it.

M: Well, good. Any other questions, comments, observations?

P: Can something like this create jobs?

M: I'm sure aboard the ships, it would.

P: Well-paid jobs?

M: You figure these folks would have to be technologically…

P: The ships would be more like the cruise ships, where half the crews are civilians. Those guys don't get paid well.

M: Well, it might be they get extra training within the context of the Coast Guard. It could be done. There are several ways, but the reality is the training, the level of sophistication, you would presume that these ships would probably be doing some of the maintenance on the monitoring stations. There would be some pretty good well paid jobs, pretty technically well trained people that would have to be staffing these vessels.

P: I don't know if this is off the topic but what about the Sierra Club and different environmental groups that are about saving the environment? Do they have input into these types of programs and ideas on how to…or is that too?

M: I don't know how we will incorporate their input on the context of this study. I think there will be some input that will be solicited from them. Not necessarily in a focus group but it will probably be another way. I'm just not entirely sure what. I kind of have a little piece that I'm working on here with the focus groups so… well, this has been great. Unless there's any other questions, I would like the handouts. You can just throw them in the middle of the table and that way, I have no clue whose is whose. We thank you very, very much. You all see Mike before you get out of here. I've enjoyed it.

P: It was interesting, very interesting.

M: There are some more munchies, probably more drinks in the back there. Mike, anything else that we need?

M: I have receipts, I need to get you to sign receipts and I'll give you $50.

Tape off.

Miami Focus Group (February 16, 2011)

M: We'll go ahead and get started. Again, we've all met. But my name is Bill Messina and this is Mike Scicchitano. We're from University of Florida in Gainesville and we want to thank you all and welcome you all. We appreciate your being here. We've done these focus groups before, I think it's going to be pretty entertaining and interesting. But we couldn't do it without ya'll. So we appreciate your being here very much. Logistical things…University requires us to get these consent forms, which basically says that you're…what you're going to be participating in, it's voluntary, there will be some compensation. If at any point you want to stop, you don't want to participate anymore, this session is not very controversial. I mean it's just questions, which I figure is your input so if I could get each of you all to read through this and sign it if you're comfortable with it.

M: Take a seat, my name's Bill, Bill Messina.

P: Do you put the date?

M: You could. It's the 16th, yes.

P: I have to sign this?

M: Read through it, it's just a standard consent form. All universities not just UF, anytime you're involved with gathering information like this, they would require you to get something like this.

P: They would require you to get this for participation in the medical field.

M: For activities like this, it's not very significant, where they're doing medical tests and stuff like that, that's a real test form.

P: I send you back to school. (Laughter)

M: Well, again thank you all and welcome. I'm with the Food and Resource Economics Department at the University of Florida. It's part of IFAS. IFAS is the Institute of Food and Agricultural Sciences. We are the Land Grant University for the state, and the University that does, certainly more agriculture and a lot of natural resource research. Mike is actually a political scientist. He's the director of the University of Florida's Survey Research Center. So he's helping coordinate these and we thank you all for being here. What we're wanting to do tonight is to get some input from you all, ideas, thoughts, feelings, any kind of reactions, or interactions about the environmental impacts of the Deep Water Horizon oil spill in the Gulf of Mexico. That's what we're focusing on tonight. There are a lot of different dimensions to that but we're just looking at environmental tonight. If you hear, we are recording this with a little recording unit that Mike turned on. And this is part of a big project, in fact, there are scientists from Ohio State University, Colorado State University, and Appalachian State University, will probably be calling in or may have already called in as well as a couple of our faculty members in Gainesville. So, just want you to be aware. If you hear beeps and stuff coming from the machine, it's just recording. Your comments and observations, though are all going to be anonymous, your names won't appear anywhere. Comments that you make won't be attributed to you, the focus group is used to gather information to help us do a better job developing, a survey that we're going to be doing later on. And it's going to go state wide. And these focus groups, we did one in Pensacola last week, Miami this week, for Miami – Ft. Lauderdale. We're going to do Tampa next week and then we're going to be doing Orlando, Panama City, and then somewhere else down here in South Florida. We're not sure where it's going to be, down in Miami – Dade or up in Palm Beach county. So we're going to do 6 of the focus groups and we're going to use that information to prepare the survey that we're going to send out. It's part of this project. When you're talking about things like the oil spill, there's lot of ways, obviously, to look at it. You could look at it in terms of jobs, in terms of impacts on tourism…I thought I was going to have a chalk board readily available…(Paper rustling) Just tack this on the back here to help us keep in mind when you think about it in terms of impact on the jobs,

tourism, hotels, restaurants, and shops. You can think about it in terms of recreation, fishing, those kinds of activities. You can think of commercial fishing, all of those are legitimate. We're going to be doing focus groups on those aspects separately. What we're focusing on tonight is the impact on the environment of the oil spill. I want you all just to feel comfortable. Interact, throw out any ideas that you have, we're looking for your opinions, so there's no right or wrong, some of you have probably read more about it than others so the information that you have…Everybody's got comments that we want to hear tonight. If you have questions, if I use a term that you're not familiar with, please feel free to stop me and ask. You all can disagree with each other, there's nothing wrong with that. We want to get some good dialogue going tonight and don't be afraid to ask questions at any time. With that as my little background, anything else?

P: No.

M: Ok, first question, I'm going to ask a series of questions, we're going to use some handouts, and I would like them back from you at the end of the session because we can incorporate your handwritten notes into the thing. But if someone were to ask you, someone from elsewhere in the United States or somebody from overseas were to ask you about the oil spill, how might you describe it? What might you use to…?

P: Horrific to the sea life out there. Losing the manatees and all those birds that come in loaded with oil and they're just dying by the …it's terrible.

M: Right.

P: You expect it, you've got to expect it. I mean you go south and then you repeat yourself. We had the Valdez. (General agreement) We're stupid as you say, if we don't know. I mean we are stupid, you think if the big corporations like to fix things for us. They wouldn't do nothing. They do what is in their interest but with the minimum effort it was white lie. If you get killed, who cares, right? Because the corporation, they are really, they're here for the taking. If they were, we cannot even say good but at least attentive to the….what could have happened, you know they say, we are disclosing things, we are disclosing things, they didn't do anything in relation to the disclosing. They weren't prepared. It's like if a fireman goes to a fire without the truck with the water. But they weren't prepared for the long time because you don't build a business like that because the business costs millions, trillions, and you don't put…even if you destroy your basin, I don't care if you destroy yours but if you destroy other people's water and you destroy the environment, than for 20, 30, 50 years it won't be the same. You cannot even pay for it. And so that's the problem, is the corporation. I would give most of the problem to the CO of the corporation, to the guy…somebody must be responsible and if you investigate….but if they did it now, right now, today, if you look at the news, there's an example of one of the countries that they destroyed, Uruguay on the news. But they paid millions and it was the highest, the court allowed the people to get 15 billion or something like that, the highest in the world, the payback. But they destroyed the place for nearly 100 years, the people die. I think one is to be fair and square. We have 3 Mile Island, you remember what happened in 3 Mile Island?

P: Sure.

P: So is the government, right? If the government is not watching these people, they don't care, not like you don't care for a child, the child is going to make all the mistakes he wants because it's free. Plus you pay people behind the door, these people say don't come and expect, dot, dot, dot. 3 Mile Island, the same, for years and years, they say nothing's happening, the government, nothing happening, nothing happening. And suddenly, no, we did a mistake, like the Pope in the Inquisition. If you go to Italy, you killed 40 million people because you said they were witches. And now one Pope says now, I'm sorry. There is no sense if we're a good society, if we want to be kind and we are not a baby anymore and we have to follow the rules. And the people who don't follow the rule, pay because it's not for you. It's for your kids, for the kids and your kids, for all over, for your society. What do want to help people like that walking around because people spilled stupidity in the world. And there's another thing I want to say, if I may. I don't want to interrupt any one. The other factor is this … The corporation, I forget even the name, they drop something that is chemical into the water, then it disperses the oil, they say they eat the oil… they eat the oil is garbage. I want to know what the result is what they eat, the side effect of what they eat in time and the side effect of what was put inside. Then it's going to drop to the bottom of the water, not 2,000 feet. I know what fish are there at 2,000 feet. They have only flounder because 2,000 feet there is too much pressure. When there is pressure, they can't catch anything. So the pressure may be 10 psi or 20 psi, no pressure, right? Very few fish will stay there, maybe shrimp and crabs, maybe. I don't know because you need the biology person to tell. I tell what I know, so what happened? This deposit on top of the soil of the sea is like sand, right? They say they eat but I want to know because it's the same story they repeat again, what is the side effect of this eating? What is it going to be in 20 years? And what sort of fish they can get contaminated by your eating because the fish breathes from the gill. If you go to the forest and you burn, you breathe the smoke and the smoke is going to affect your system. And these people are what you call, I'm not telling you the chemical because they want to keep it secret. I don't telling you the side because it's sort of simple to know the side effect. You can take from the bottom of the sea some of this, like a square block, right, put it on the swimming pool with the salt water, not the same pressure, because we cannot match the same pressure, but see exactly what the chemical is. You know the transformation of the chemical, I don't mean the chemical they dropped, they won't tell you. It's like the Coca-Cola secret. They won't tell you because it's like a …, the Army knows what the secret is but other people don't. Probably because that system is to destroy oil on when they go to war. You know when they go to war, they probably destroy the oil by putting in this germ. And this germ, they go inside the oil, the oil well, whatever, without the burn, and they just drop this germ and the oil that comes up is destroyed by this germ. So it's probably many times a secret, this one, what they think most likely.

M: Maybe a trade or corporate trade secret, too. Let me get some input from some other folks here.

P: Actually, I don't think we've seen the final impact. (Others agree) of this whole thing. I think there's still going to be a while.

M: Mm-hmm.

P: We are calling some areas close by are probably suffering already. The impact, the negative impact of the environment, some of the parts that are further from there are probably not as much, but we will have a bigger impact and probably won't be able to see the final impact until maybe years, maybe 10 years. (General agreement)

P: I think 100s of years. (General talking) I don't think somebody's going to be here more than 10 years anyway. (Laughing)

M: More than 10 but maybe not 100, right?

P: That makes a big difference.

P: Well, we don't know that, though because we're not scientists.

P: That's what I'm saying, we need the scientists to give us.

P: Well, common sense will tell you, the way it was done…You don't have to be a scientist to know.

P: Those will evolve is going to be in uncertain years.

(General agreement and talking)

P: But if you think even then, that I'm against plastic bags. Europe just changed plastic bags. If plastic bags can last in land for 200 years. If a plastic bag, wherever you take it from, Wal-Mart, 200 years. We don't even know. That's why we need the scientists, the biologist can give the answers mathematically.

P: Yes, we always do.

P: Look at the mahi, mahi. What is the damage? And the other thing, excuse me for interrupting, I talk too much but I like to talk (General talking and laughing) I cool off a minute but as I was saying…I forgot it now.

P: It was devastating, especially to the …mainly people on the west coast. I mean we were lucky over here, hopefully it doesn't get to this area. It just affected like you went over so many ranges of people. And I'm a beach person and I like the outdoors and everything. So it was really a big effect and I was hoping it wouldn't get to this side being biased to this coast.

M: Sure.

P: It was sad to watch the people that make a living out there.

M: What other…did you read about any other environmental impacts of it? You talked about the birds, you talked about the fish.

P: The fish especially, the seafood, even though we were in an enclosed… I personally, and I'm no scientist or anything, but I think eventually with time, that thing has to fall underneath the water for miles and miles and miles. Probably years before it will probably get to even further than we can think of, not only Florida but somewhere south, west or where ever.

M: Many, many questions.

(General talking)

M: With all the disbursements that were let go, even some of the people letting them go off their boats, ended up in the hospital. So you've got to realize that is a very deadly chemical. (Talking and agreement)

P: It's a deadly airborne than it's definitely deadly and at sea. And if you don't think that's it's in our ocean, it's definitely here. It's here because you can hit certain spots and see certain things. And you know even our reef, look at our reef. Our reef's suffering still and it's going to get worse before it gets better. And I'm sure that the scientists can even let you know, those disbursements are already down here. As long as it's been and with the currents, the currents move a lot faster than we think. (General agreement) And we've got to realize this, this isn't like a core, they don't stop.

M: You all mentioned the Exxon Valdez, some of you, can you think of any differences between this one and the Valdez?

P: Because the Valdez when it leaked down to the ground, we knew exactly how much amount of volume was there, we knew exactly what sort of damage because once you have the amount, I'm not a mathematician but I'm not completely gone. Once more or less, you know the quantity then you can even control that quantity in closing, more or less. It was the damage that was incredible because it was cold water there, if I'm right. And it was very, very difficult to get there and to do…at the time, because it was very far. But when they said that it was an accident, I wouldn't say it was an accident because you see when you say it's an accident, you say well, even all these petrol tankers they move up and down, they move up and down, and every other one. And you say this should post not to our insurance because they say with our insurance we pay. They should post to a quantity of security that is like the atomic bomb. You have security on that atomic bomb but you don't need it around. If you look at the Atlantic, we have the cargo ships and they come up and down. It's most of…lots of them with oil, like cargo and oil ships. And they don't have the security we think. If they get the oil spill, then we're going to have the same problem. The problem with this one was the pipe line, it was a compressed oil spill. Compressed means the power of the oil, it was like, he broke everything and it's like if you have oils that…it's going to be tough to close it. But he should have…someone dived without their license. For me, these people, no matter how much they excuse themselves, they don't have any excuse.

No matter how much they say, they did this, they have this security, no, you're not. You have to do it before. It's like when you build a house, you don't build the house to crumble. The next day a little bit of wind come, it comes down. Everything they did, they didn't want to invest the money for security. It's like a plane crash because they don't have maintenance. I would catch those people. You've got to have the security and the security is to be: one other thing then they, the government agencies they expect these things that lose for the money all the income. That's a big problem.

M: [ ] had something she wanted to say here.

P: Yeah, the company in this case, do they have any plans to continue to, control is not the word, to continuously improving the possibility of the seafood, the fishing, and all that that is in the water, testing it to see…that's how they can tell how the environment is getting better or worse.

M: There are some tests that look like they're going into place, but what we're actually going to talk about at the end here is; we're going to propose a system to help guard and monitor for future reference and that sort of thing.

P: Right, it's important. Not what they did, they should learn from that.

M: I think the whole oil industry's going to learn a lot from what went wrong with the federal investigations and that sort of thing.

P: Well, the thing about the back-up systems, they say they have two back-up systems. And neither back-up system was even tested. So why …if they have back-up systems, why not have ten and just keep them tested one at a time. You go from one to ten. And just keep using this, ok, shut that one down, use this one. And just periodically make sure that they keep on testing them. Because that's the only way that far down in the ocean, like he was saying, that is a lot of pressure and in actuality, there's a lot more sea life than you think there is down there.

P: They might be blind.

P: Like you say, there is flounder, and there is a sting ray

P: There's a lot more sea life than you think there is. There's literally thousands and there're actually huge

P: And of course that would impact also the humans because we eat that or we buy…

P: Now how many people think of this? How many people actually give a great deal of thought to this? There's so many people that are indifferent.

M: Seafood sales in Florida did go down rather dramatically afterwards.

P: Yeah.

M: And Florida Department of Agriculture tried to get a promotional campaign going that seafood is safe.

P: Oh, we had that in Boston…I'm from Boston and we had a long time cleaning up Boston Harbor in cleaning it up.

P: I think it's shrimp, mainly

M: I think a lot of the shellfish and even some of…

P: A lot of it's the greed, too. There's so much money in the oil industry that it's easy to say Monday morning quarterback, it all happened and hopefully it won't happen again. But they don't…a lot of these companies, there's so much money in it, unfortunately they slack on the precautions. And it takes lives, we're not just talking about the environment, we're talking about people who were killed on that…that were working there.

P: Yes, that was terrible

P: If people, excuse me for interrupting, if people will get killed eventually from the side effect of this, we don't know. And the fish that …we say fish but the fish that may die, we don't know. If we think about fish, the fish they may get polluted. Like now, there is a lot of pollution about the mercury in fish. You know the mercury, they get you crazy. So, that's what I said we need the biologist, this is the moment and this is the quantity of toxins that they have now. And then we hope that in the future, they're going to decrease. But right now, I think with this new stuff that you mentioned, that everybody mentioned that; this chemical that they put, we have 2 factors with that chemical. That chemical eats the oil and then it comes out to the surface, yellowish. We think with the light, it goes up to the atmosphere and then when it rains it comes back again in a different position. I don't know what sort and this is the problem.

P: The thing what got me is where they were saying they're testing the fish by fishing, opening the fish up and smelling them. That's…

M: There's a lot more sophisticated tests going on, but they actually did quite a bit of work at UF and a number of institutions. And you can tell a lot by the different odor, it was amazing how sensitive your nose is to pick up odors and scents that aren't supposed to be there. So, not great scientifically technical but the biologists are also working on it, too.

P: You get the picture…

M: We'll look at these in just a minute. Just a couple of other questions. We mentioned Exxon Valdez. Can anybody think of any other major oil spills?

P: They had some close to England like a big tanker there.

M: I was thinking more along the lines around the US here.

P: US, I don't know. I think they had some problem but not a big spill in the Gulf of Mexico before. They had a couple of…

M: We'll look at them later. How would you, just guessing, how would you rate the size of the Deep Water Horizon spill relative to the Exxon Valdez? We'll look at some data in a minute, but I just wanted to…anybody have any ideas?

P: Ten percent of the Valdez. I mean 10 percent, the Valdez was 10 and this one is 90. Maybe 100, maybe more than 100, I don't know.

P: I would say more, personally I would say more because they said they couldn't even calculate that much. And that's…

P: What does it mean, 260 million?

P: See that's what I mean, they kept calculating and even the size (General talking) Even the scientists said it was wrong. You can't count that much.

P: No, but they were showing if he's right or wrong, in the middle of this spill, 400 million…I was watching every day. Four hundred million or some million of the gallons, they had a computer, right? And then they just said that the computer was false at the beginning.

P: I'm going to say 98%.

M: Well, we've got some statistics here, I've got a handout here. There's 4 pages, 2 slides per page. What I'd like you all to do is take a look at them, if you have questions, we'll discuss them. If there's something that's not clear, scribble on it, circle it, question mark "what's this?". If there's a better way to write something here, or a clearer way to do it, we'd like to get your input on this. So take a few minutes if you would and then answer some of the questions that we've talked about here.

P: Is this one set or one for each?

M: One for each. Scribble all over those things but don't put your name on it. Feel free to write all over them if you need to.

(General talking)

P: It looks worse on paper.

P: I'm not reading familiar things. I don't remember much, I didn't get too involved. And the one of 1979…

M: We'll talk about that in just a minute, that's an interesting one.

P: It's pretty close, I mean from 79 to 2010. I don't think we probably gotten over this one by the time the one in 2010 is probably going to be affected.

M: You're probably right.

(Silence, reading)

P: That's the thing about the ???

M: We'll talk about it in just a minute so just mark on there if you've got a question or something doesn't make sense.

P: Wow, when you read the statistics, this is horrible. Wow.

M: Well you've probably had a chance to look through it. You can keep writing as we're talking here. Was there any of this information in particular that was new to you?

P: Well, the vastness of this.

P: Thousands and thousands of miles.

M: Isn't that amazing?

P: And I'm looking at the locations of the spills and they're right on top of each other.

P: You know where they stop? They stop at the Florida border.

M: But that doesn't mean that Florida's not impacted by these…

P: Thousands of miles, what's affected, I didn't realize it was that many miles.

P: I'm watching this, this is amazing.

M: Did you, in terms of if there's questions about things that are unclear, you can mark that on the pages, was the information presented in a more or less, a neutral way, an objective way?

P: Yes, it was neutral.

P: Yes.

P: Folks in BP might not agree.

P: I mean it's hard to be real positive on the words, on the other side, I mean on the other side it's until we get some type of ultimate type of energy….I don't know what the answer is. It's a pretty negative effect on everybody. So I don't know how much positive you can get from these.

P: Especially when you see them making like I said, making these millions of dollars, these companies are still making, even after this, I'm sure making a lot of profit.

M: They had a quarter when they didn't do so well then profits picked up after that.

M: Well unfortunately, and hold on to these, we'll come back to these right at the end. But up to now, there really hasn't been very many measures to stop the occurrences of these oil spills. And we're going to be developing a survey to determine if there's citizen support for a new program to reduce the impact of future oil spills. That's fundamentally what we're trying to get at, in the Gulf of Mexico. That's what we're looking at primarily now. So would you be supportive, in general, of a program without knowing details at this point. We're going to get into details, but generally would that be something that you all would be supportive of in some sort of program to try to reduce the impact of oil spills? (General agreement)

P: Of course.

P: Yes.

P:Definitely

P: We are all for it, if they wake up.

M: Well, we're going to …take the …

P: I just want to say something…if it impacts some of us…like medicine, it's good for one thing. and it damages another.

M: Well, that's and that's what we're trying to get in to some of that.

P: I think they have the technology. The problem is the big corporations didn't put the technology out before. They have a lot of technology, they can stop it. They can stop it fast. Even when they start saying they can suck it up, they have that special vacuum and they tried to do the trick with this vacuum, but it wasn't a proper…

P: It was just so deep.

P: And the volume

P: But they can still do it because…

P: It wouldn't be very efficient.

P: First the subsurface plumes, you've got to find them.

P: They can do it. The problem is that they were not prepared for all this, that's it. Even for the depth. But if they built at that depth, because you saw what they did in that depth. They built everything on that level, like he said, like build the well and have two or three channels, then they going to go to the same well. Two of them, they lock, but one can take the stuff away. What do you call it? It's slab… If you're going to fight the pressure at least they do it every…If you go to a center, where they do gasoline lines, they have 2 lines and it can be closed and the other one open. It's not…you know they can do it. Because you see it when they try to do all these tricks to put the cap on. One blew off you remember, right? And then eventually, they succeeded because they had the technology. The technology is there. Even with a hurricane coming, and they still put the…

P: I guess they don't want to spend the money.

P: …at the beginning.

P: And down at the bottom here, on the last page, I mean it probably doesn't even get into the news. Is that what you're saying? There's been 163 spills greater than 50 barrels?

M: In the gulf. Most of those are relatively small, with the Deep Water Horizon is clearly the largest. (General talking) The other big one was the Ixtops over in Mexico, the middle one that we looked at in the bar graph. I'm old enough that I should remember that, I didn't remember anything about that at all. Now it was off the Mexican coast so it probably didn't get as much press in the US. There probably would have been a lot we could have learned from that but I'm not sure because it was off the Mexican coast and Mexican government probably didn't have the resources to put toward it or the wherewithal to force the corporation involved to monitor the sea life. But that's one of the things we got at was in the Exxon Valdez case, there were 2,3, 5, 6, 10 years down the road, we were seeing impacts that came up.

P: We were really lucky too that we didn't have any hurricanes at that time. (General talking) So weather wasn't too bad. The squall wasn't too bad.

M: Yeah, I heard it was rough a couple of days but a hurricane would have brought that oil…no telling where that oil would've gone.

P: Has this affected our reefs?

M: I, as an economist haven't been involved in that. I know they're monitoring whether or not any of it has reached the reefs in this part of the state, I don't know. I don't believe so, but I'm not terribly sure.

P: But in Louisiana and Texas, yes?

M: Certainly Louisiana, you look at that map and you can see the barrier islands and the coastal areas. (General talking) Mike's a political scientist. Neither of us are biological scientists so there are going to be some others who are involved.

P: Has our Everglades been tested?

M: It is being tested right now and the last I knew they had not seen any, in Southwest Florida, they really hadn't seen much impact from either the disbursements or the oil that was measured. But how many places can you measure? Which, this is actually a good transition for us. Because what we want to do for the rest of the focus group now; we're going to describe a program. It may not be the best program but we're going to describe a program and get you all's reaction to it. First, we want to describe, we want to talk about funding as kind of the second element. So if you get comments, I'll give you something to read that describes it. We'll talk about funding and then whether or not you would support it. So, this is the next…

P: Funding is the money you make, the money you…

M: But how would it be funded. Because it's going to be expensive….

P: I have a good idea.

M: Well, hold on to it till we get to the funding part. First hear the program…

P: Somebody's going to hate me but I have a good idea.

M: Well, that's ok.

P: …to make the cash.

M: This first page just describes the program. Again if there's something that's not clear, scribble on it, circle it, mark it with a question.

P: So it's the damage already done, not so much to stop it?

M: Well, you read through it, you'll see this is designed, it'll be designed to monitor problems, both from Deep Water Horizon and future spills, but also to address the spills themselves.

P: What I don't understand is oil, I know people that they actually pay, not to pump their oil, you know what I mean? And they pay them once a month. And our government does this, I mean they get fat checks once a month.

M: That's kind of outside the scope of…

P: No, I understand that but if they're pumping out of the ocean but yet we're oil rich and our lands. And they've been doing this for 50 years. Why even…I don't comprehend that?

M: I can't offer you any insights on why they allow that. No questions it would be perplexing. I don't know.

M: Go ahead and scribble on it, make some suggestions on how we could write it better.

P: Is this equipment available now or is this part of the research?

M: Most of …I mean, knowing what we know about Deep Water Horizon, there's a much clearer indication of what we need to effectively address these problems. And most of the technology is there.

P: It is.

M: The monitoring stations, from the monitoring stations to the equipment that would be in the vessels…the cost associated with them.

P: But the company who dig up the oil should pay for everything.

M: Well and there are federal regulations…

(everybody talking)

P: I read something, we talk about it, I read something and it didn't make sense because they say only if found negligent are they required to pay for all clean up. But before you are found negligent it means you didn't do what you're supposed to do. And it doesn't make sense. And the other company, the company pays less money to ensure this program, when they're the only one. But they're the ones to make the early warning not you, not the government.

P: You want it to be proactive, right?

P: Exactly, they say only if you are found negligent. You should be up front, everything up front. It doesn't make sense, actually you don't need the money. You need them to do the work, because they're the one that's going to make the profit. And they've got to make the peace, I don't know how much they get but it's like what they did in Uruguay. They went there and they dig all the oil they could, they pull their foot out of the earth, and now they pay 15 billion but they made all these people die, what you going to pay for?

M: I want to hold off for right now on the discussion of the funding. We'll come back to that. But a couple of questions, is this a fairly clear explanation and if it's not, mark on there, what do you think needs further explanations.

P: What funding is your need, for what?

M: We'll talk about that. Well, you've got the funding for all the monitoring stations and the vessels, the 2 vessels they're talking about.

P: This doesn't go to the company of the …

M: We'll talk about it , if it's…what I'm looking for now is, is it reasonably clearly described. And if there's any information that you think needs to be developed more, sections that need to be rewritten. Does the program, do you think it's feasible? Does it sound like something that's possible?

P: I really don't think that people still want those disbursements put in their waters. I'm just going to be straight out honest on that.

M: That's absolutely what we want.

P: You're talking about…just in the first paragraph, I have no agreement with none of it. That's just…you're going to have…I can understand you're going to have these things.

M: The monitoring stations?

P: The monitoring stations, ok at the end of every 3 – 9 miles.

M: The reason…the difference between 3 – 9 miles is the coastal waters for most states are 3 miles.

P: They're going to contain oil at the surface?

M: The monitoring stations will monitor for subsurface spills too. As it is right now, we don't have any way of seeing where the…we see it at the surface, if it's under the water, we don't know where it is. And these monitoring stations would be monitoring in a water column so it might not be anything on the surface you can see but the report it would pick up…

P: It would be a contained surface then?

M: But then, ok, we've got to address something differently. You address the surface spills one way with the booms and the vacuuming and stuff like that. For the subsurface, I'm not sure that they really know exactly how to deal with that but they could start with some of the vacuuming techniques. But at this point, we just don't know where the subsurface plumes are. And that's what there monitoring stations, an advantage of these monitoring stations have. I'm not saying that this is the right program but the monitoring stations would not only monitor surface but it would also look at the water column all the way up to the top.

P: Like how deep?

M: All the way down. I mean how we have to have….

P: But 25 miles is not too deep. It depends on if there is a trough.

M: No, no it's every 25 miles between them, all the way to the bottom. And in 3 – 9 miles, it's not very deep there.

P: What I'm saying, even put more or less I don't know for certain, side of the sea. They have the reef, the 3 reefs, right? Because I do scuba diving, so I know more or less. And the first reef where the fish goes, second reef is like grouper or something like snapper. In between, the rocks, they (talking) about 30 feet. Now in certain places, it depends on the topography of the sea.

M: It's not 25 miles out. If you've got the coastline here, you'd have one here, and then this would be 25 miles and you have another one here, another one here, another one here, 25 miles and the distance off of the shore would be 3 – 9 miles.

P: But that's what I'm trying to say. It's very low,

P: very shallow

P: Shallow. And what I'm saying is when you reach there, you're going to be contaminated to already.

M: You've got these rapid response ships. The argument is that they may be able to react and respond. If you think the monitoring stations ought to be further out?

P: Yeah, further out, much further out.

M: Write that on your sheet there.

P: Yeah, you can write it, further out.

M: I'm not …

P: I will say for my point of view, 50 miles out.

M: Put that on your sheet.

(General talking)

P: You're talking of going anywhere from 1 mile to 3 miles down, correct?

M: Not in …3 to 9 miles off...I mean 9 miles off the coast of Florida is…

P: We're talking about down under.

M: 9 miles off the coast of Florida?

P: It would go all the way to the bottom.

M: Yeah, well, it's probably only 60 – 80 feet deep. That's why the state coastal area of Florida is 9 miles because that's kind of the shallow zone on the western side, on the gulf side. Not on the east coast.

P: How far are these oil things from the shore? Like how many miles?

M: 3 to 9 miles off shore (General talking)

P: No, I'm talking about the big…

M: They're all further off shore. I think the closest ones are probably 25 miles off the shore…(General talking)

P: What was this one? I don't even know how many miles.

M: This was a long one.

P: Panama City, you can see theirs from the beach.

M: And you can see…what you're seeing is the top of it. When you're on a ship, 30 feet up on a ship, you can see 12 miles to the horizon. But then something beyond the horizon…

P: I used to live there, and on a good ….on a clear day (General talking)

M: I think the closes ones are probably about 25 miles (General talking) Yeah, I think 25 miles off, but most of them are further off the shore than that.

P: I thought it was illegal to drill so close to shore.

M: In Florida, it's illegal, that's why on the map, you don't see any off the coast of Florida.

(General talking)

P: If this was already included, what would this have done with this spill?

P: They shut those down in the Panhandle.

M: That's an excellent question. And that's on our very next handout here. Excellent question.

P: Well, good.

P: My question is if they are 20 to 25 miles out, apart from…

M: Oh, you're talking about pushing it further.

P: I'm talking about these rigs…no, I'm talking about surrounding, my thing would be why don't you surround the things with these things?

M: Right, that's a good suggestion.

P: …instead of going here and going there. I can see surrounding it and then spreading out, I can see that.

(General agreement)

M: Maybe that's…write it on the sheet, that's an excellent suggestion. We'll pick that up. I can't write that down. In these focus groups, I'm not supposed to be writing things down. That's why we record it because we get more information. If I was trying to write it down, we'd be missing it like crazy, so…I see what you're saying. Just kind of surround the existing platforms and pick it up there.

P: It would be better. He's right.

M: That's a good suggestion.

P: So it got…before it reached 25 miles or 3 miles, you're going to destroy all the reef, automatically. Because even with the quick response, then, you say you have a quick response? You're already gone.

P: But it's still better than what's out there now, nothing.

M: Yeah, (General talking) there's really nothing out there right now. (General talking)

P: One enemy is better than another enemy.

M: All right since you gave us the perfect setup let me go ahead and hand out the 2nd handout here. This is…starts to talk about if the system was in place, what kind of impact would we have seen? And it starts to talk about, there's some questions at the bottom. I'd like you to answer them without discussion, just your initial reactions, and then we'll discuss the individual questions. Thank you for that transition.

P: Has anybody even started to design something like that?

M: At this point, we're…this is a project that was funded to look at the level, to determine the level of support among citizens in Florida. And it will be a national program, not something that's just funded by Florida. We're trying to gauge consumer interest. Does everyone have one?

P: What's it going to be funded by, the taxpayer?

M: You'll see, we throw out a couple of ideas.

P: I have an idea.

M: I'll talk about some, actually.

P: All of this bothers me because I work as a crossing guard at the school (interrupted by taped message)

M: Sorry.

P: Well, so the parents dropping off their children speed down the street there, they kill the ducks. I've watched five go in the last week. That hurts me so bad, so I've got 20 that cross on my crosswalk. And I go out there with my stop sign and I've crossed the ducks.

M: That's an indication of the value that you put on wildlife and the environment.

P: Yeah.

M: Certainly.

P: I think all those CEO's who have received all those nice bonuses should pay for this.

M: No argument there.

P: Let's make the CEO's pay.

P: Excuse me for asking, when you say, taxpayer, all Florida should be called residents and pay that? What do you mean by who should pay?

M: Let me just hold up, that will be the first question I address here.

You can keep writing, I'll just start the discussion up again here. Before we look at these specific questions, there's 3 fundamental issues, I think; the question of who should pay, how much should they pay, and how they should they pay. And those are huge questions and we're not going to reach any conclusions about what the best combination is here tonight. But what we want to focus on tonight is the citizens of Florida would clearly have a share that they should be paying. There's an argument that a large proportion of the

seafood that we consume in the United States comes out of the Gulf, that people in Minnesota, Indiana, Tennessee, and all over the country, all over the world…

P: You say all over the world, we're a multicultural society here.

M: It's a little tougher to enforce payments from people from other countries. (Background talking)

P: The thing is on that, I'm in agreement, but then again, I'm in disagreement because we didn't cause those spills. We personally did not. Them people are sitting back laughing at us. (General agreement) And we're sitting here, and they want…somebody along that line of $50, somebody's laughing and saying I'm getting a dollar of that 50. And because I'm still making money on that oil.

M: Maybe, we thought about some different mechanisms. One of the mechanisms, look through all of them here…

P: I don't see BP dropping their prices in gas.

M: Do we add, if we, the US Government, decides to charge BP so many cents per gallon, barrel or however you want to look at it like that…

P: BP can pay off our deficit, put it that way.

(General talking)

P: What I'm saying is that BP's got the money to pay our deficit off, regardless, I don't care if…a dollar's a dollar. Now you got here, you'll have been down here from Gainesville for I don't know how long. Go to every street corner, you've got somebody asking for a dollar, buddy.

M: That was kind of striking as I was driving around today.

(General talking)

P: So if you don't think that we don't know where a dollar goes, you go to a gas station and you've got somebody asking you for a dollar. You go to Wal-Mart, I don't care what store you go to, you've got somebody hanging out asking you for a dollar, bottom line. So to keep asking the citizens down here for money and money and money. That's like going to the church house and them saying, let me get your wallet. We take credit cards today. So to ask us to give and keep on giving, and we had nothing to do with those people that had that explosion. Ok, if they knew those things weren't working, which somebody knew they weren't. And they're laughing at us, sitting in those meetings, and it's all hunky dory. It's not hunky dory for us. Truthfully in our own hearts and I'm speaking of, I don't know what ya'll believe in, but I believe in…I work and I work hard for mine…

P: I live on Social Security, so 50 bucks…

P:…I still try to help others when I can.

M: Let me put…

P: …to turn around and keep taxing us when we're already taxed to death in the first place. Now I believe that if you can come up with a fund raiser, sure, there's millions of people who love fund raisers. You offer something, you offer to get, ok. But taxing people in a time like we're in, we're not out of no recession, everybody realizes this.

M: Do you think BP is going to tend to raise their gasoline prices…

P: Of course

M: …to reflect the payments that they had to make on this?

P: Of course.

P: It's going to hit us anyways.

M: Yeah, one way or another.

P: They're saying, this is what they're saying on the news. Oh the gas usage went down but the prices keep going up. That's kind of bogus. We're not using the oil but it keeps going up.

P: No matter what you say, you're going to pay for it one way or another, (General agreement) even if you don't agree with the 50. You're going to pay for it. It could be the oil, it could be raising the prices of your food, it's going to be somewhere. You're going to be hit somewhere no matter what.

P: If you throw some kind of benefit, would you rather go to a benefit and get something, or would you rather the government just keep taking yours? Think about that. I don't care if it's a chocolate bar, buddy, if you're going to pay $50 for that chocolate bar at least you're going to receive something and sit there (General talking) saying here's your bill, we want that at the end of the year. And we're going to keep that going for ten years, you see where I'm coming from? They're asking for ten years.

(people talking over each other)

M: I'm asking, just try to think about in terms of what we're presenting here.

P: It's not every year. It is $50 for the one year.

M: What we're talking about here is a one-time $50 and then at the end of ten years, the program would be evaluated.

P: How many people are in the state of Florida?

P: That's what I'm saying. Who's going to pay?

P: Is it 17 million?

P: 19 million.

P: But it wouldn't be kids and stuff. It would be taxpayers.

P: I still think the oil companies should pay.

P: Our kids', kids' kids will be paying.

P: The state of Florida it didn't do anything, Louisiana and Texas on the other side. I don't know if they get any benefit from the oil extraction those states as income.

P: They got compensated.

P: But what about before?

M: There's tax benefits…

(people talking over each other)

P: They got some income from the oil… and the fisheries. Now we pay for them, they got compensated, from what we saw in the picture, they [the oil wells??] are close to the land, like close to Texas. So they are ready, like if you're in the first line of fire. They're there, they got the benefit of taxing, they got the benefit of the company that gave them the money and they pay for the consequence of what the company does. But what I misunderstand here is that the taxpayer…this program is a state program, it's not a company program. Is this state going to put on this program?

P: A government program.

M: It's not necessarily the state. It could be federal.

P: It doesn't make sense because you try to protect something that makes money by itself. It should protect itself and you should make them protect it.

M: But do you think BP is going to be better at policing themselves or do you think the federal government….

P: No, no, you're talking about another thing. If you say policing, I say I can't pay the state to police (General talking) the government has to police themselves.

P: Well, think about, and I think you mentioned it. How you get it, you know we pay for a lot of things and we don't even realize. Like when you get your registration fees for car or a license? I know for a fact because I worked at the schools…like 50 cents of what you're paying is going for driver's education for kids to drive. So if on some bill that we get, a certain amount is going toward that, you'd be a lot more likely to…well, a lot of people wouldn't even know about it. But if you come out and say everybody's got to write a check.

(people talking over each other)

P: What I don't understand, if it was for marine life, I would pay $50.

P: That's what I mean.

P: No, no if it was but not to misconstrue facts, if you put the money for what we passed by here, the fish, the bird, and the land and everything, even $100. I would find a way to make people pay. I'll tell you which way. I would find all the boats that they go free, I say you are to contribute, like I got my car. If you want to protect the fireman, you put …you buy a new pack of cards, you want to protect the puma or the turtle, you put it…so I would say, you are a fisherman, all right. I say I don't give you a license because in Europe, you pay for the license of boat.

P: Yes you do.

P: No, I'm not talking about fish, I'm talking about pleasure. You don't pay any license for it.

P: I've always had to register to boat. And I had one when I was a kid.

P: I just changed my license and it cost me twenty-five bucks and that's just an address change. A year ago it was $10.

P: If it is for animals, all the animals, it's good that human beings provide for birds, for animals, because we have a good heart and because we care for animals. But if it is the state, the state that wants to protect the oil for us, then it should be the company that has to protect itself and we should expect them to do a good inspection and if they fail, we fine you too. They've got to make sure we do that, fine them and make them protect themselves, make them do more than what they're supposed to do.

P: A separate resolution; If you keep…we've got enough government as it is. They're so big and blown up, they can't come down and talk to us. I'm just being honest about that. If you did this on a private basis, now I would believe in a private basis because government doesn't trust government. You think the people would trust government with oil? No, that's oxymoron. If you go out there and talk to…

P: We're not talking about protecting the oil, we're talking about protecting the environment.

P: No its still the same thing. I don't mean to get off the subject but what did we go over and steal that man's oil for in the first place? We shouldn't have been over there, all right? Bottom line, ok. We went over there to steal oil and that was it. It ain't going to be no different here. It's just going to be, it's just to me…if you make it simple, it'll work. You get the government involved, they're going to take it or you can get a private industry which I'm sure there are plenty of them that would love to do this.

M: Well, let's say for example that there was a fund set up for the Coast Guard. And the Coast Guard became the entity that made it possible for maintaining the monitoring stations and for operating the ships. And there would be lots of different mechanisms. It could be something on your federal income taxes, it could be something like a surcharge on property taxes, it could be a surcharge on the oil and gasoline that we use or vehicle registrations. I mean those are the four different ways that we had thought about.

P: They've already doubled everything.

P: They've doubled everything, everything

P: You've got a better chance of getting the money that way.

P: They don't double my Social Security.

P: If we do a fundraiser, we have enough taxes.

M: The fundraiser, the problem with the fundraiser is that it would really be voluntary. And are you going to get somebody in Minnesota or Colorado or different places.

P: If you blew it up enough and go through the web site. It's going worldwide, you don't think people ain't got hearts?

P: It would be hard to get it from states like Minnesota and outside the area. Even though the fish might get to them, they are still going to balk. I mean it's the same kind of thing when they talk about hurricane national insurance. I mean everybody's paying for hurricanes, even the states that don't get hurricanes. (General agreement) So you're always going to get people that are going to balk at…paying more out than getting in. Just like we got, I don't know where the money's coming from, the other day Obama's 350 million for the Everglades. It's coming from somewhere, we're paying…I'm not sure if it's a line on some bill but it's how you collect it. I'm willing to do it in that kind of thing but I don't know.

P: Excuse me, but what about the Florida lottery. Don't we get a piece of that?

M: Florida lottery all goes to education.

P: All of it?

P: What about the gambling?

P: What about the Indians' gambling? They should provide too because they're making a lot of money. You know that, right.

P: The Indians are tax free.

P: Gambling is all over now.

P: The only way to do it is as was said to put it as a tax that nobody knows.

P: A tax like on casinos.

P: Right, the only way. And then if you can get more money from the casinos paying for the wildlife. You should involve the casinos on the total amount of money. And you say, listen

(people talking over each other)

P: Everybody that is involved in gambling.

P: But they collect because they've got the casinos. The other ones they going to lose, I mean the Indians, they collect a lot of money.

P: What about all these places that have nothing to do with the Indians? And they have all kinds of gambling casinos? In Broward…

P: All casinos should pay.

(Everyone talking at once)

M: When you're talking about these…(Talking) Everybody thinks, almost everybody says there's a value, they value the environment, but if you're not willing to pay something for the protection of that environment, then you really… (Talking)

P: But you know what, what happens is that it gets before people are willing…we have to see something, that there is protection, yes, we are going to see it, whether we're going to see it, I'm not going to say the price of oil, no; but that the system works and that it's effective and that the consumer is…

P: I'm willing to pay if I see something.

P: Yes. I don't have a problem and if it's a one-time $50 fee for 10 years, it's not a problem. And I'm sure maybe 80% of the population will go for it. But we have to make sure because there's so much…excuse me, corruption now that look what happened with Jackson. We paid a half a cent for I don't know how many years to go to Jackson Hospital and they've been broke ever since they started collecting. They are completely bankrupt.

(people talking over each other)

P: Study this right here. What in government has worked yet? Answer that and you're on top.

P: I don't…what I'm saying is you want to see it first…

P: You put it in the government's hands and they mess it up. Bottom line. No, that's the bottom line.

P: Whether is government or private, everybody's out to try to make a buck.

P: But it doesn't matter. If you let government involved in it, what are they going to do? I mean they're squandering Peter to pay Paul for 30 years, just on Social Security, come on. (General talking) You're talking $50 for 19 million tax paying people. And you're going to hand this over to the government? Just ok, you can have this. You want to go party, go ahead. It's not a joke, it's a lot of money.

P: It would be by license or something, not every 2-year-old. People who are paying into something

M: That's why I said the idea of federal and the federal tax payer would be obligated to pay a certain amount.

P: Let them set up the program, the system that is going to work and then do $25, after the first year that the program is in effect and see the results. So that way you can bring it to the public and people would pay $25.

P: I would be in agreement if the government would fix one program, just one and run it correctly, I would agree with it. (Talking and laughing) If you've got senators up there saying hold up, we can't keep doing this, we're already messed up. Your grandkids, your great-grandkids, ain't even came out of the seed yet are in debt. It's not oxymoron here.

P: I think the oil company should pay.

P: The oil company should pay at least half

P; I think more than that.

P: I'm not saying that we as tax payers shouldn't pay. Maybe we should be directly involved to make sure that … I don't believe that it is going to happen

(people talking over each other)

P: It would have to be promoted with something already in place or that it's going to be in place soon, not something that's going to happen in years. (General agreement) People want to see results (General agreement) So it's going to be something that they're going to see in effect right away. That's the only way to buy in.

P: You've got to come up with a good one…I can see it's got to be done, don't get me wrong. I'm just …

M: How are we going to do it effectively?

P: Effectively is the thing. If you don't …I mean, who's going to watch over the government? Nobody. …. this is what they're going to come up with: they're going to come up with this over here then have 10 other entities watching that one while these are watching them. Come on. That's just a waste of money.

P: We try to reach the goal. What is the goal? The goal is to protect. What they promise…

P: Don't we have enough environmentalists and scientists?

P: No, they're doing research on something in outer space or something.

P: No, protect with this system.

(people talking over each other)

P: To my point of view, it's better to be close to the ring and have all the equipment that I said before that if something happened, you close it just like that.

P: Yeah, I agree. Just close it like it.

P: If it is at 25 miles to me already would destroy everything.

P: What would this cost or do they know?

M: They don't have the numbers yet. In terms of what a fair share would be, we're just trying to gauge…

(people talking over each other)

P: I believe that yes they would, bottom line, yes.

P: Yeah, especially now in the stores, supermarkets everybody's promoting the, conscious of it, … providing that the program or they system –we can see the advantage of it

P: I think people are willing if you do it the right way.

M: Mm-hmm. Was there, in terms of the material presented tonight, was there enough material basically for you to sit and think about and reach your conclusion, whether you agree with it or not?

(people talking over each other)

P: Just in my opinion, if you would actually have photos of what was actually doing and more, that you would be able to…it would get passed. I believe that with the public. Actually show the damage, what's this doing to the reefs, what's this actually doing….actual pictures, pictures, you know you really got to…

P: Well, this map, the marine animals

P: I didn't realize that was there.

P I didn't either.

P People don't know, they're involved in other things.

P: But here, you're showing healthy animals, you're not showing …You're showing the opposite and you're showing what's supposed to be. Show what's at the depths of the ocean, what people don't see. Know what I mean?

P: Showing that and then showing the equipment and what it's going to do to stop some of that.

P: Yeah that's a good idea.

P: …The only thing you're going to get from the majority of people is they're going to say, without thinking through it, is why aren't the oil companies paying for this?

P: Yeah, that's what I wrote down. She did too.

P: Exactly

P: I agree, I agree.

P: That's a good question.

P: I think it's going to come back to us, anyways.

M: Yeah, I mean if we force the oil companies to do it, BP's not going to pay our deficit, even though they could pay our deficit.

P: Well, here two years ago, we were paying $5.00 a gallon. It's like whoa.

P: Amen.

(everyone is talking at once)

P: That's because of the war there.

P: I think that the gas prices shatter me. I have to drive 20 miles 4 times a day. Everything is going up 10% food, clothes, everything. Gas will be $5 a gallon.

P: Well, they're talking about …before summer hits…it's going over $4.00.

P: In Europe it is $3 a liter, a liter is not so …

M: Let me ask you to do one more thing if you would. Go back to that handout with the power point slides, that's stapled together. If there's any slides on there that you thought were particularly good and helpful, put a star on it. And if there are any that you thought were unnecessary just mark an X through them. If you would do that, any of the slides that you thought were particularly helpful, put a star next to it or put great next to it. And if there're some you thought were unnecessary, just put an X through it.

P: What do you do if you want to do both, because my idea of promoting the actual photos of the damage?

M: Then mark, put photos of injured animals, rather than healthy animals or something like that. Because that's a good suggestion, not nearly as impactful as when you see…

P: When they put them on television, I was in tears, those poor animals.

P: We have knowledge of the Valdez. We miss couple of next time when you do the charts of the Valdez in relation to the wildlife recuperating, the fish recuperating.

M: The Valdez was really difficult because that was in a very narrow strait and it wasn't deep water like this. So the impact, I don't remember what this it was 4,000 miles of coast line or some crazy number like that. I mean, far more than this, because it was right there on the coast. It was just a couple of miles, not more than a mile off the coast of Prince Williams' Sound.

P: What I'm saying is the oil, even if it was deeper and far away from shore, the effect is the same when you reach the shore, on the animals and the wildlife. That's to compare what that oil did to the animal life and reef to this oil spill, you can get the measure between the two. It's the only way you can get it. Also…

M: There are a lot of scientists out there.

P: Yes, that's what I'm saying in Florida there are very good scientists. There're very good underwater scientists out there to check the reef. There is an incredible amount of science.

I saw them the last couple of times, they go and circle the reef, 80 of them. They spend about 15 days and they go check the quantity of fish found there, go back and then they have a big center.

M: There's a lot of biological scientists that are working hard and trying to figure out what the impacts are, there's the University of Florida that has a lot of them, like Marineland. Ft. Pierce, I forget the name of the research center, there's a big marine research center in Ft. Pierce, the name escapes me right now. And there are a tremendous number of scientists right now that are working very hard on it.

M: So we're working as economists to establish values; that's what we're trying to get at here. But that's pretty much everything. I would like to get all of your handouts back from you. If you want a copy of the power point slides, I have extra so I can give you them if anybody wants them. But I would like to get all the copies back.

P: Grazie. As we see on this picture here, it's about to happen again. I can guarantee you.

M: You know what's really interesting? All those wells, what there's 3800 of them, there are 23,000 capped wells and they don't even know where a lot of them are.

P: Exactly.

M: Wells that have been dug back in the 1950s and back then, they didn't keep track of where they were. (Talking) What this monitoring system would do is if one of those capped wells begins to leak, then…

P: Make the companies clean them up.

P: It'd pick it up.

M: Yeah.

P: That's something good, all that information is good to get to the people.

M: Well, we tried that actually in the Pensacola focus group and it ended up almost overwhelming the discussion, Deep Water Horizon.

P: Oh yeah. I mean if it got to the point where they tried to get money from everybody, you've got to give them all the facts.

P: Because as far as I know, the Horizon was one of the deepest drill that I know.

M: It's certainly one of the deepest that we had a problem with.

P: Usually they're about 200 meters, right?

P: 5,000.

P: This here was enlightening to me because there were so many facts I didn't know.

M: Yeah, that's…

P: …it's scary.

M: No matter how much you read in the newspapers, there's no way to absorb it all. And we tried to put together a nice overview so we appreciate your input. This is really valuable. This is going to help us develop a much better survey. So we thank you all. Have some snacks, have some drinks, everybody see Mike before you get out of here. So if I can just collect the handouts.

Tape off.

Tampa Focus Group (February 23, 2011)

M: All right, once again, my name is Bill Messina, and it's Mike Scicchitano. Mike runs the Survey Research Center at the University of Florida. I work with IFAS, the Institute of Food and Agricultural Sciences at the University of Florida and we're organizing focus groups this evening. What we're trying to do …we're going to welcome you and thank you for coming. We want to get your input and your feedback on how oil spills effect and their associated effects on the environment impact you. That's the focus of our effort tonight. We're interested in your opinions, your thoughts, your beliefs, your understandings. Different people have different levels of …have read different amounts on the big oil spill that we just had out in the gulf. And what we're looking at …what we want to concentrate on this evening is the impacts on the Florida Gulf Coast in that context, that includes the waters nine miles off the shore of Florida. That's considered the Florida Gulf Coast area, that's the state boundary, if you will, the nine miles around the coast. We do have other people listening in to this tonight, professors at the University of Florida campus in Gainesville, but no names are going to be associated with any comments and that sort of thing. We just want this to be an open discussion session. Everything's going to be anonymous. We're holding meetings like this around the state, we're trying to get input, as many inputs and opinions as we can. Again, I want to emphasize we're talking about the gulf ecosystem and environmental impacts. I want to get your input on how important a healthy coastline habitat is for the fish, for the animals, for the beach areas, not just now but also in the future, as well. And we want to make sure to keep our focus tonight…any time you talk about oil spills like this, there's lot of impacts. There's impacts on jobs, there's impacts on tourism. We're talking about impact on hotels and restaurants and shops, there's certainly that.

P: That's probably true for us all the way down through.

M: Talk about beaches, you're talking about commercial fishing…we're doing other programs to focus on these different aspects of the oil spill. We want to focus tonight is the environment. (Leave this up) This is going to be our focal point for purposes of tonight's, this evening's program. We want this to be an open session. We want you to feel comfortable, if there's any questions, if I use a term that you're not familiar with…raise your hand or just ask about it. Anything that you're not sure of …the input that we get from you tonight and from the other focus groups that we're going to be doing is going to be used to prepare a survey. We want to send all over the state, we want to send thousands of them around the state. So the better job we do at making sure that the material we've prepared is clear, the better it's going to be in terms of getting a survey instrument that really helps answer the questions that we're trying to get at, the importance of the environmental impact. Feel free to speak up, I hope we hear from everybody tonight at one point or another in the course of the conversation. We're looking for your opinions so there's no right or wrong answers. It's not like you have to worry about saying the right thing. We just want everybody to feel free to provide their input at any stage of the discussions. So, any questions before we begin? Ok, to start things off…let's say if you were talking with someone who hadn't been aware of the Deep Water Horizon oil spill that happened here, how would you describe it to them, how would you …what would you…what words would you use? How would you talk to them about this?

P: Catastrophic.

P: Devastating.

M: Absolutely.

P: Yeah, I'd probably say disaster.

(General agreement)

P: I would say it was greed, take a bunch of short cuts and then they put safety procedures that were available. Had they done that it wouldn't have been such a catastrophe. That's if you go back and try to find the underlying cause to it. We have 5 of the Deep Water Wells all over the world. There's only been 3 major accidents like that. Here in Mexico, and then one over in Europe. And then all of them through that faulty engineering…the company tried to take too many shortcuts to save a dollar and it cost them billions. (too soft to hear)

M: Yep. That's absolutely true. Good, what are the environmental impacts that you've heard about or read about or been concerned about in the context of the Deep Water Horizon?

P: Prices of oil went up.

P: Price of my shrimp went up.

M: Supplies went down; prices went up, no question about that.

P: My son runs a major establishment on the coast and their business is off. They've been off for about 3-4 months. It's just now starting to pick back up because, unfortunately, a lot of people make decisions on what they perceive the facts as being and not necessarily what the facts are. Like they would get called about all the oil off the coast…we don't have any oil down here. It's all in Louisiana and Mississippi. But people didn't come to Florida because of perceptions of the news media that there's oil everywhere.

P: I'll give you a perfect example. A friend of mine on the internet recently posted a diatribe against the federal government because they were trying to help the shrimpers in Louisiana by buying up the excess that they are catching that people don't want to buy and selling it back in the commissaries to our troops. And this particular person is very, very angry that we are "poisoning" our troops. He's deathly afraid that we're feeding them contaminated seafood and part of me would like to say, oh (name deleted) you're being insane, but the other side of me is saying, ok, we really don't know the long-term effects of what that disbursement did. We really don't know if we are eating contaminated food or not, and future generations of contaminated foods.

P: Let me get a point of thought on that. How long have they been drilling in the Gulf of Mexico?

P: Too long.

P: And if there's a certain amount of oil seepage that's going to get into the water, ok? And this permeates all over, it affects all the sea food chain, and I'm 77 years old and I haven't heard of a mass epidemic of people dying from eating sea food.

P:...but believe it or not, it's not the oil we're afraid of, benzene. Let me list a couple of them, they don't come right to the top of my head. Any disbursement that they sprayed by the thousands of the gallons, benzene, mercury, the other one that starts with c that we're all afraid of, arsenic, etc., chemicals that normally you can't use without have a license. You don't want it in your waters, etc. I wouldn't use it anywhere near my garden, etc. And yet this is what they used and they tell us, oh it's to help it make it go away. It didn't clean up anything. It helped hide it and drop it to the bottom faster. It's not the oil we're afraid of, it's everything else they dumped in the water to hide the problem. Ok, there's a thousand little animals, little different species that swim at the very bottom that we can't even get down there to see how it's affecting them. Even our best submersibles don't make it all the way to the bottom. So we have no idea, we can say what it will do to the food chain for 10 years, 5 years, can we say what it'll do to the food chain for 50 ? How many people have actually done a study that runs that long? And the answer comes back, we don't know. So people are scared, you kind of can't blame them. I do understand your point that the oil itself has never really come up and killed anybody, but then again, go ask the…I'm not going to get the name right of the tribe…but when the Exxon Valdez occurred, there was an entire tribe of Indians that was nearly wiped out from that because they said, oh, we're all fine, and yet when you look at it 30 years later, there's cancer riddled through these people, there's all types of lymphoma, that was never seen in their tribe before that oil spill. And it didn't come from the oil. It came from what they used to clean it up. They had to completely

change their way of life. I hope the shrimpers in Louisiana, the fishermen in Louisiana, we don't want to change our way of life. My husband and I have been trying for 5 years to go home, the place I want to live is on the water. You can't even reach my house other than by boat.

P: Do you use the internet?

P:…all the time.

P: I won't dispute what you're saying because I don't know, I'm not a doctor, I haven't been there. But if you give me a point at something, I'll find you 10 ways for and against this on the internet. And normally when something adverse happens, keep in mind that the news media wants to sell news to get the ads in the paper.

P: I believe you. They write…

P: They write a lot of things that's hypothetical, that's not really germane to what's going on. So unfortunately as average people, we're fed this thing and then we have to decide to accept it or reject it based on how it's done.

P: We're mentioning the effects of the environment?

M: Yes. [ ], you mentioned Exxon Valdez and [ ], you mentioned the one off the coast of Mexico. Any others that anyone has heard of that have affected US waters?

P: There was a small one that occurred right after the big one in the bayous in Louisiana and that actually affected my home people more than the big one did.

M: Depending on where it was located?

P: Yeah, because it was central to our inland shrimping and nobody really gives a rat's tail for it because it's inside the bayous and not where the commercial fishermen go. But it's where all of us little people who do it on the weekends.

P: Well, I care because I like shrimp.

P: Well, those of us at home catch our own and don't want to buy from a market and we go and do our thing, stock our freezers. It's a Cajun way of life is radically different from you guys.

P: You've got to understand this. Wild shrimp tastes entirely different from…

P: ….different from farm-raised.

P: All my neighbors are telling me not to eat the catfish that I catch in my lake because of mercury poisoning. That's not even related to the discussion…we already have people

afraid to eat seafood from just your general toxicity that's in the water now from pollution, years on years of commerce.

P: That's stuff's is just, if not worse, it's just as bad or worse, before that oil spill than it was after because of all the crap that was down there. Think about it, when they pull up the shrimp net, how much crap is in that net, along with the shrimp.

P: I went down in May of last year and worked my uncle's nets and let me tell you, even before the oil spills, it's a dirty job.

P: It's hard work, isn't it?

P: Oh yeah, but I love it. Like I said, the Cajun people are very different from most people. We don't see a grocery store but more than…just for staple items. The majority of our meats, the majority of our vegetables, we grow ourselves or we catch ourselves.

M: Well, getting back to the themes and stuff here. The oil spill, Exxon Valdez versus the Deep Water Horizon, versus the one in Mexico, any similarities or differences or do you remember anything about the Valdez? It goes back to when…long before you were born. (Laughter)

P: I remember the captain was drunk. And he had the wrong navigator.

M: That was actually up in Alaska. It was in the Prince William Sound, it was a tanker.

P: And while I don't dispute [ ]'s comment that the media does put their spin on things because that's basically what you're referring to, now- a -days in society, it's not what happened, it's how you spin it. But for Exxon Valdez, they tried to tell us repeatedly, oh, we cleaned it up quick, it was a very minor impact but again, like I said… you speak to the Indians who were living out there for years and years, living off the land, eating the seals, eating the whales; they had to change their entire way of life.

M: We'll look at some of the information.

P: They just lost a lot of wildlife they were accustomed to living off of.

M: We'll look at some of this later.

P: Another problem was they had the same blowout preventer, it had a faulty one…like the …the information is what it came down to.

M: Yeah.

P: I don't know how large…I think those things were…

M: How large? They're five stories tall. They're immense. Any idea, any indication how large the Deep Water Horizon was versus the Ixtox out of Mexico, versus the Exxon Valdez?

P: I'm not familiar with the one he's talking about in Mexico but I can tell you that the Exxon Valdez oil spill, as big as it was, imagine a can of Pringles to this little can of Pringles. This was Exxon Valdez, this was the full size can was the Deep Water Horizon.

P: That's the largest spill in the United States history.

M: It is. Actually Deep Water Horizon is about 20 times larger than the Exxon Valdez. Now the Exxon Valdez was in a narrow coastal, a narrow sound, a narrow strait of water. The impact on the coast was every bit as bad but then Ixtox off of Mexico was about ¾ the size of the Deep Water Horizon. So points of reference we're trying to get at.

P: Was that one a tanker or a well?

M: The Mexican one was a well. It was similar to Deep Water.

P: But the thing about the Mexican well is it wasn't as deep as the Deep Water was.

P: Don't know if I read correctly or not but from what I was told, no one had ever drilled that deep before the Horizon, never. So either the blowout preventer they had on it, they had no way of knowing it would work because from what I understood, it was over 100 miles deeper than they've ever been on the ocean floor before so they had no way of knowing…

(General talking)

P: The way they were trying to cap it was the same thing they were trying to use in China when they had the blow out there as Deep Water.

M: Yeah, Deep Water, Deep Water is one of the deeper ones but it's not the only one that's deep. All right, what I want to do now is to give you some environmental handout that's got some power point slides. I want you to read through them if you would, if there's anything that's not clear, mark it. I would like to get this back from you. Read through and we'll talk about that here in just a minute. Let's pass these around. What we're trying to do…these are graphics that we might use in the survey and we're trying to get people's input on how clear they are to make sure we've got our tracking…look through this, if you have questions, if it's not clear, mark it for us; that will help us in the future here.

Everyone reading

P: Gee, this depressed me.

P: Well, it's something I've always known all my life, that Louisiana has more of them than anywhere. I'm not going to use the words that my family uses about it, but we know we're

the chemical dumping grounds of the United States but that's a whole other thing but just looking at how many, yeah, depressed me.

P: There's thousands of them isn't it?

M: Yeah it is.

P: You know when you think about that, one of the most vague things about that spill was huge to begin with, after a few weeks, they kept saying, well it's in the gulf stream now, they said it was somewhere in Miami, then they came out and said it's in…it washed ashore in the…down to the Keys. They said oh no, that's different oil. The media did all they could to purposely push that oil to the Gulfstream to take it around the east coast, all the way around the trough in South Carolina.

P: I knew people in St. Augustine that were concerned.

P: Yeah.

M: The potential was there. We were, I guess, fortunate, it didn't do more damage to the Florida coast. But the potential was certainly there.

P: I know shortly after, I took my kids to the beach with basically the mental attitude; let's go before it gets bad, in case they don't get it capped and it gets covered. But if you take your favorite beach, at least we'll have at least one good family memory of the last time we went to the beach. And it just so happened to be the weekend they said it was algae and I'm not going to dispute the scientists and everything. They know more than I do, but we've seen algae in the water before and I've never seen it that gray and that exactly the same, those squiggly lines and the kids came up out of the water and they didn't want to swim anymore. They're like, "What is this? I'm all itchy." And I don't know if it was just the mental thought that it might be oil, it might be disbursement that drove them out. But I've never seen either of my daughters voluntarily get out of the water before I grab hold of them. And I couldn't get them back in the water. They wouldn't swim, they were afraid.

M: Well, looking at this handout here, on the first page, there are two different maps. Which do you think, I'd kind of be interested in your opinions on, which you think is the better of the two maps, if we're going to include graphics.

P: The second one. Because the graphics…to me it's easier to understand.

M: Do we have any votes for the first one?

P: I'm the weirdo; I like the first one because it provides more information.

P: Right, I like the first one, that's the difference.

(General agreement)

P: It's two different things. I like both maps. I agree with him that the second one gives you a clearer idea of how far it spread etc. It's more graphically eye catching. But I like the first one because it gives you more information.

P: The top one needs to be enlarged.

P: Yeah

M: Yeah, we could change our size and our graphs a little better on it. But we're just trying to present similar information in a slightly different way. We're just trying to get some feedback.

P: I wasn't sure what the surface oil circles are showing because…are there supposed to be dots like the other ones are dots? I wasn't sure if I could see any of those.

M: Yeah, we should probably blow that up a bit more.

P: Or are those referring to the dispersal, similar to the bottom half.

M: It's spots where light oiling, versus medium oiling, light tar balls, versus medium tar balls, spots along the coastal areas where that…

P: I was talking about the surface oil that has 1 – 10 days.

P: And more than 30.

M: Oh, it's not the circle, it's the color on that one.

P: but it's in a circle…

M: I see what you're saying. That's a good point. Ok.

P: The reason I like the second one, people make decisions when they first see something based on color. It's easy to simulate it and up here the problem with the graphic . This problem is if you stop and study it…but people do a glance thing, you know, our attention span is 1 – 2 seconds. And here they can grasp it in my opinion with the color variations, with the color key here.

M: Excellent point.

P: Just have some blue in the water versus

P: I think they're apples and oranges.

P: I agree.

P: I don't see how you pick this one over this one. They're telling you two different things, different information.

M: There's some…

P: Well, the top one does include some of the same information as the bottom. But the top one covers way more information. I agree with [ ] and I don't mean to insult anyone here, but I think that we all agree that 75% of the population is, if not illiterate, unaware and not…they're in instant gratification society. They don't want to have to ask questions, they don't want to have dig for information, they want to have it right in front of them immediately.

P: Don't confuse me with facts, my mind's made up.

(Laughter)

P: There you go. And from that aspect, those type of people would be more impressed with this.

M: Ok.

P: Overall impression and if anyone's interested in more information, those are the people who would to see the second one.

P: Exactly.

M: Great. That's good, that helps us a lot. Is there any information in any of the slides that seemed unclear?

P: Yes, at the risk of sounding stupid.

M: No, not at all.

P: Potential long-term effects, following the oil spill, the fish stocks were not observed for six years. Six years right after or six years post?

M: In the six-year period after, right after, it did not appear as though there were much damage to the fish stocks and then after six years is when they started seeing the mutated salmon.

(General talking)

P: And that's what I meant when I said that it was years down the road, before they found out what it really did to the culture that lived out there. Because the effects were not recent.

P: Right, because I read it as they waited six years before they started looking again.

M: They were monitoring it right away but they didn't …at first, it looked like, gosh, there's not going to much of any impact and then they…it was about six years later when they really started to see some changes in the …

P: It could read, they were not observed until six years later.

P: Actually as simple as damage to fish stock were not observable until after six years which implies that you were observing but you couldn't see it.

P: It actually went through several generations.

M: Exactly, that's what it was.

P: Sorry, I didn't mean to interrupt you.

P: That's ok. She was talking about mercury. The body cannot hold, contain too much mercury. But in the long term, over the years, just a little bit adds up and it will cause deformities, it will cause heart problems, it will cause death, mutation, and things like that. Like he said, as long as he's been living and eating, he's fine. But the generation coming up now might not be. The mercury could be building up in a little child. It they at the beach and there's mercury out there, they swallow it in the water? Mercury is going on the inside and it'll be years before, at least 20, that mercury builds up till it causes problems.

P: I'll give you a perfect example of aspartame, a very commonly used artificial sweetener. We're told oh it's safe, it's perfectly harmless, etc. The bottom line is legally and technically, if you're dumping it, you've got to have a chemical waste license because it's that toxic. And there are some people and again, it may be, as you say, the spin, can't say for certain, not the scientists. But there are people who are talking now that it's a second generation sterilization chemical. Which means you'll take it, you're fine, you'll have children. Your children may not be able to have children. Because you used that sweetener, not them. We don't know what those types of generational effects will be on the reproduction of the seafood. Then you look at, there is already a problem for the seafood industry in the sense that several other countries have been overfishing for years. Again, not to bring it back to Louisiana, and I don't want to make it an ethnic issue, but we have had many Vietnamese, many Asians, when they came in and settled in our country to evacuate from theirs. They don't want to follow our conservation rules. When they go out shrimping, they're running those boats 24/7. Our boys are fine, on 14 hour shifts and 10 hour sleep. They're out there for 24 hours and they pull up everything. They don't care if it's sellable or not. They sell it in their own communities. So we're already suffering from overfishing to begin with.

P: Isn't there some regulatory agencies there?

P: There's supposed to be but I'm going to be honest and tell you there aren't enough folks to check out those boats as they're coming in.

M: Let's kind of get back to what we were talking about here. Looking at these handouts, if we can…was the information presented in a neutral way, do you think? Or was it biased, one way or the other?

P: It's kind of hard not to be biased when you've got this big giant blob of oil in the center out there. As biased, no, I'd say you all presented it fairly. But it's kind of hard not to make a person make us biased against it when you looking at this giant blob of oil. Anybody disagree on that one?

P: I think it's not biased. It's just the facts.

P: It's just the facts, but it definitely makes us biased against.

P: On the flip side though, instead of saying 900 miles of Florida shorelines taking a spill, if you were say, the oil company, I can see that you would spin it the other way. You'd say however many miles were not affected by it. You can either say the fact two ways and this way's showing the negative which no matter how you state the fact it's still negative so…there is, somebody is going to perceive it as a bias. So I don't know how…if you put both numbers together or just spun it in a slightly different way.

P: Nobody would read it that way but to be honest, when I read it, it's like it's all bad stuff. But I'm concerned about this kind of stuff so it affects me that way.

M: Was this information new to you or was it most of the information that you were aware of?

P: It was new to me.

P: The effects on coastal habitats most of that was new to me, to the loss of life count, I'm going to be honest, I'm a horrible person and I started tuning it out because my husband was telling it to me every day, every day. Because he took this even harder than I did because he's from a long line of shrimpers.

P: I thought the loss of life was greater than that, I really did.

P: Me too.

M: I'm not sure that captures all of it because there's a lot of fish. (General talking)

P: It's in the newspapers, because you have to keep it in mind, they write our newspapers for a 5th grade education and it's down to about a 4th grade now, so you've got to read it with a…

(General talking)

P: …the lowest common denominators and unfortunately the things that society has in common, most of the time aren't the best traits, it's the lowest and worst.

M: Well, up to now, there haven't been any programs really out there or measures out there to stop the occurrence of an oil spill. There's some regulations that the oil companies may or may not be following. What we're trying to do is to develop a survey to determine if there would be citizen support for a new program to reduce the impact of future oil spills on Florida's Gulf coast. And again we're talking environmental impact on Florida's Gulf coast. That's kind of the focus of what we're doing right now.

P: Several years ago, there was talk on the news about the moratorium for offshore drilling being lifted…yada, yada. All I can say on that is when that talk went around, almost everybody I knew was dead against that. They did not want drilling anywhere near our Florida beaches. And I still hold that line. I grew up in Louisiana, I can tell you everything that it does bad for the state…. So on that way…

M: Even without there being any drills…

P: …I would like there to be some agency to look out for us, to make sure we're doing our best to have it done in such a way that it's not going to have such a large negative impact.

M: I mean even though there's no drilling off Florida's coasts, obviously the impact's …

P: …the trickledown effect.

P: Technically, there is an agency that's already watching over it.

P: Your point is look at all the regulations the oil company has now that they're supposed to follow, when the inspectors are on these rigs, if they inspect regularly, you're going to relieve a lot of these problems. We have enough regulations. We have enough inspectors, we have enough government oversight. It's just that it's not been implemented to where it's effective.

P: The problem with a lot of these regulations are that they were made back in the 1970 and that' what the problem is.

P: Not necessarily. They're evolved every 3 or 4 years in that business.

P: But a lot of these big companies are also actively policing themselves.

P: They do the same in the meat industry and come on, look at all the outbreaks of E Coli we've had now that we trust them to police themselves? You cannot trust them to police themselves. I read an article a week ago, just two weekends ago as a matter of fact, don't remember the newspaper because I was in a hotel at the time, down in Hollywood, Florida.

It was one of their local papers that the hotel provides in the morning. The culprit, we'll leave their names out of it, but they were alleging that a certain political influencer was pushing a committee to do it's best to weaken the EPA because it's interfering with commerce. I mean excuse me but isn't that the Environmental Protection's Agency's job to make sure the greedy suckers don't get so much…

(General talking)

M: In general, would you all be supportive of …we're going to propose a program, maybe not a perfect program, but we're going to propose a program and without knowing any details is that something that you all might be inclined to be supportive of? I mean obviously you'd have to see the details but is that something that sounds like it'd be pretty attractive and that would be worth at least considering?

P: I think most citizens of Florida would want to think that we have somebody trying hard to protect our beaches and our wildlife.

P: Just as long as it's not a government organization, it's a private organization, made up of say tree huggers and environmentalists, yeah, sure that'd be great.

M: Well what we're going to do now with the last phase of the focus group here is …we're going to propose a program, describe a program, we're going to discuss some funding arrangements, how would we fund something like this and then we're going to ask you to evaluate whether or not you would support the program that we're just tossing out here as an example. So in the first component, we just want to discuss the program. Let's hold our comments on funding till the second one. And we'll have time to discuss all three. As soon as we throw the program out, you'll start saying how are you going to fund it, and that becomes the second component. So we have another handout that describes a program, not the perfect program necessarily but we're throwing out an idea here that we want people to at least consider. There's a map on the second page there that shows you the coastal waters that would be affected by this program. So read through this, and again if there's points that aren't clear, scribble on it, mark on it, make suggestions. We'll talk about it but we'd also like to get some written feedback here too so we can incorporate that into our efforts.

P: Bill, on that, just a moment, sometimes we tend to forget if you're remember for two days, almost three days before that blowout, Halliburton was told that the mud wasn't sufficient by the engineers and the safety people and they kept coming and said it's not holding. So they had adequate warning they were just trying to save a dollar.

M: If there are things that aren't clear, you can circle it, put a question mark next to it, say what, if you want to rewrite a sentence, feel free to do that and we'll discuss it here in a few minutes.

P: What I didn't particularly understand here is that it says fish closure boundaries as of 6:00 PM eastern time, 15th of November, 2010, is that what the map is supposed to be?

M: But what we were actually trying to focus on…we probably should have taken that legend off of there. The green border there is the …that's the coastal part of Florida that would be protected in this program. So it's really not going to deal with the east coast either. It's the Gulf coast of Florida. That map is just to show the coastal areas that would be protected.

P: Now that you've said that, like scribble out everything I wrote.

(Laughter)

M: Sorry about that.

P: Am I the only one that is different?

M: I actually…we printed up the wrong one because we had changed that. We just adapted it, we added the green border to the west coast off Florida.

P: Yeah, it was just the lettering there.

M: Yeah. That's the new graphic we added to this focus group. Ok, feel free to keep writing or making things down and you can do it while we're discussing things here. Is there anything that's unclear how the program would work? I mean, obviously, it's a pretty complex program, we're trying to synthesis in one page here. We've tried to lay out the basic components. Things that aren't clear that could be made more clear? Something that could be described in a little more detail? Any suggestions on that or do you think it's pretty good the way it is now?

P: I think if we got any oil drilling on the coast, this would be very effective. But I think we've got the cart before the horse. We don't have the drilling.

M: Even though the potential exists for the oil from the Louisiana area that drifts this way.

P: Yeah, but don't forget the Gulfstream. The Gulfstream keeps most of it offshore. It depends on how far in or out it is that type of thing. But that's a real continuous belt of water and as you know it's almost a safety factor.

P: Would you agree or basically state that the thing that would actually push it close to us from another big spill, say we would have the misfortune to have had a hurricane during the season of that, none of this would do any good because you can't get the boats out there in the middle of the hurricane that's pushing the oil into us anyway. So as great an idea, it's one of those things that looks real good on paper but in practice how feasible is it really?

M: That was the next question. Is it something that seems like a reasonable program to implement?

P: If we drill, yes.

P: If they lift the moratorium and allow drilling in the area of our coastline, then yes, we need this.

P: I say no, there are other places that they should spend money than something like this.

M: Ok, all right. Of the information presented, is there anything that was presented that you felt was presented in a non-scientific way? Was it laid out fairly objectively whether you like it or not? What do you think?

P: I think it was objective.

P: It was objective.

M: So the question about whether it would be feasible to monitor, number one and whether or not it would be relevant before we start drilling off the Florida coast. Those are the two issues that I guess I'm hearing.

P: How many structures would it actually be? I mean I don't know off the top of my head the coast but actual mileage?

M: We're talking about every 25 miles…

P: Right, I don't know off the top of my head…

M: I don't remember what the coastal…800 miles or thereabouts?

P: Ok.

M: I think the area that's painted with the green line there. So you're looking at 3200…divided by 25.

P: Cool.

P: Every 25 miles, multiple 4 times 800.

M: Every 25 miles, you divide 800 by 25. So it'd be a couple hundred of them.

P: Ok, cool.

P: Well, I'm guesstimating for every 100 miles, there's four 25 miles in that. So if you're saying…

P: You need that many times…

M: Maybe we don't need them that close, maybe we need them closer. We were figuring (General talking) Most have…(General talking)

P: …there's 4 per 100 miles so, if there's 800 miles, there's 4 for…

P: 4 times 8, 4 times 8 is faster, I don't know, I ain't a mathematician.

P: 32 times 4 is not 800.

P: 200 times 4 is 800…

M: If it's 800 miles…

P: 4x25 is 100 is all we're saying. It's irrelevant.

(Laughter and talking)

P: You asked about bias on the other one? The program would be able to reach the spills in Florida's coast and commence cleanup of Florida waters where did they get would instead of could?

M: Mm-hmm.

P: That's stating it as if it's a fact as if you all are certain that it will work. That's a bit biased isn't it?

P: Yeah.

M: Good point, thanks. Ok.

P: Well, not to be the devil's advocate but if they were there and could prevent it, they could be notified in time, you get the necessary equipment ????? before it got to the coast.

M: The ships would have…they wouldn't just be monitoring vessels, they would have all of the equipment on them to immediately respond, everything from booms to submersibles, a lot of that equipment on there…

P: Like I said, should be able to stop it, because I'm sorry, no offense, the ships only takes one guy who's not doing his job to mess everything up and have it not get there…

P: (Can't hear comment)

(General talking and laughing)

M: There's no guarantees. I see what you're saying, that's a good point. Is there anything we can do to improve the program or alternative programs that you might want to throw out?

P: Being a true ???(46:49) I hate to see the word disbursement in that but it's accepted, we've already lost that battle.

M: Well, not necessarily. That's up for debate right now. There's a lot of evaluation going on.

P: Well, I'll be honest with you, I'll tell you I wouldn't be supportive of any program right now that advocated that it was going to use the disbursements. That was the biggest thing I was angry with the oil companies for because I feel the disbursement is really going to do the major long-term damage. Because now you're not just talking about things that might get stuck in some oil, you're talking about every bird that happens to dive down and take a drink of that water, every little animal that happens to come up to the coastline and eat. There are things that will eat out of the salt water, the salt water moves into the brackish water and move through and filters through and that's not necessarily going to get filtered out. So now it's going from the salt water to our coastals and destroying our brackish wetlands, moving into our fresh water supply. We don't know how far that's going to go.

P: There's always a chemical treatment in medicine. We spend so much on the cure and not so much on prevention. If you're going to have oil drilling and were attuned to spending more on prevention, preventing problems, while this would be ok, but if it's extensive or expensive, when you've got the funding part of it like that. We have the capability and we have the ability but you've got to educate people when they're advised to do something or not to do something. And this thing in Louisiana would have never happened if that had been the case, if they focused on prevention, rather than trying to cure it.

P: Not only that, if we held them accountable in more ways than just fining them and taking it out of their pocketbooks. If we actually made it a criminal offense to the people who gave the order to ignore the safety requirements, then maybe they'd have something to be afraid of. Maybe they'd stop doing it. But I'm sorry but how many times have we heard the insurance companies say, it's just cheaper to pay the policy and take the loss. A perfect example,???? pharmaceutical company, different topic but same example. They do all the testing, they know exactly how unsafe it is, but they get to police themselves. They just keep requesting another test, another survey, until they get the result they want. Then they go ahead and get the FDA to put it out in the market, it runs for 10 years, they make billions, than they get sued, get it taken off the market and they only lost 64 billion out of the 640 billion that they made out of it. To them, it's cost effective to eat the losses.

P: Did they invest in oil companies?

P: I'm sure they do. But you see my point, it's the same economic outlook.

P: I'd be interested in hearing about this program in addition to other programs, alternative programs than this. This seems interesting, but is there a better program?

M: Well one of the things that I think is going to happen is an outgrowth of the Deep Water Horizon is that the monitoring of the oil drilling, the oil industry is going to be considerable

stepped up, ramped up, probably going to be some efforts underway to make sure that the oil companies are in fact, following the regulations that are in place a little more closely. But this was…we were envisioning proposing this as kind of an insurance policy if you will. We all have insurance on our cars or hopefully we all have insurance on our cars and that's partly because of what we might do but really in more instances, it's what somebody else might do.

P: I thought they were able to track a lot of this oil spill from the air but how accurate were they in doing that?

M: That's another one of the things that I was going to mention here.

P: Those units would be expensive.

M: Well it would except the one thing we don't know is where the subsurface blooms are and there's no way to monitor that. And these monitoring stations would be monitoring for oil, for disbursements, for chemicals that don't belong there in the column all the way to the ocean floor.

P: They can't take that with satellites and photography?

M: That actually came up with another one of the focus groups and I don't know. I've not read anything and the group of us that are working on this have not read anything to indicate that there are very accurate ways to monitor the subsurface blooms by satellite. I mean if…

P: If they have satellites now over water, they could take the temperature at the base at the bottom all the way up with the satellite. Now with that technology, I don't know, maybe they might be able to take the underwater plumes or whatever it may be.

M: I'm not aware of any technology, you can do it by satellite obviously, that would be…that's one of the things…the surface water, the surface oil spills, they're easy to see and deal with. The subsurface plumes and that would be one of the things that this program would do that other programs that deal primarily with looking at the surface, contacts with the surface…one of the things we're talking about is the idea of the subsurface blooms, the fact that this proposed program, you'd be monitoring…the monitoring stations would be monitoring a column of water all the way to the bottom. So if there was a subsurface bloom approaching the coast of Florida that you couldn't see from the air or you couldn't monitor from satellite…

P: It'd probable do a better job with monitoring the quality of the water changing.

M: Well it would not just look for oil blooms, you would have some baseline studies of what the normal make-up of the water is…(Background talking)

P: So if you saw anything unusual..

M: Yeah, you could pick up anything that would be out of the ordinary.

P: Let me play devil's advocate for a moment. If this program is installed and it's all the way up the coast, what would happen to the navigational hazards that they present? Would people run into them, the pleasure boats, the fishing boats, shrimp boats?

M: I would imagine it wouldn't be any different than a navigational beacon or something like that.

P: But if you had that many of them, it's not that…

M: Every 25 miles, I don't know that…it might be …offshore. I'm not an offshore boater myself.

P: You would have to assume that there would have to be something rising from it out of the water to notify that it's there.

M: Sure, yes.

P: You can't just sink it under the water.

P: It seems to me that they'd go out there and steal them, put them on eBay.

P: You know you said if you're going to have something you can run right over it and you're going to have a big ship that you keep it 20 feet from the surface and you have a big ship that's going to be able to run through there so like a ship being kind of like?

M: Well it would come all the way to the surface and above the surface, I would think you would have to have some certain buoy or marker or….(talking) yeah, you'd have to have a light on it so it wouldn't tangle up at night.

P: Are plumes usually wider than 25 miles?

M: It can vary and I don't know that we really know exactly what the configurations of the plumes are, they're so difficult to monitor. You can send… a lot of the research that's been done has picked up plumes, whether they've been able to encompass the full scope of them. I think it has to do with ocean currents.

P: They tend to be long.

P: I was just wondering how many of them would move in between the sensors.

M: It could conceivably…

P: I'd say me and [ ] would find the idea interesting and worth considering. One absolute no, one on the fence, three not sure at all.

P: I'm sure.

P: Do you like it or dislike it?

P: Don't speak for me.

[Laughter]

P: I'm trying to give someone else a chance to talk.

M: Well that's what we want to get on to next a little bit. We want to talk about if there are reasonable ways that the citizens of Florida should pay for the cost to establish the program. And we thought of three ways that involve a one-time payment. You may or may not like them and that's what we want to discuss a little bit. The ongoing maintenance fees would be paid by the companies that are drilling in the gulf. But the way we're envisioning the proposed program, the one-time start-up cost basically would be funded by the citizens of Florida and I want to throw out some ideas on ways that it could be funded. And then we'll go with a last worksheet here. One of the ways that we thought about funding it would be a surcharge on property taxes, where a one-time surcharge, where all the monies would go into a trust fund that could be used to pay Coast Guard for the program. The Coast Guard would be the monitoring agency, they would be running the ships, they'd be running the monitoring stations and it would be funded, it would be added on to property taxes and go into a trust fund that would be used to establish this program.

P: This would be for every resident in the state of Florida?

M: Yeah, all the property taxes in the state of Florida.

P: Every resident who owns property.

P: That's not every resident, that's the landowners.

(General talking)

P: The east coast people, how happy are they going to be to dig into their property taxes?

M: The argument would be that in the worst case scenario, it goes down, it goes through the straits of Florida and it's up the east coast. And the Miami…it was interesting, I didn't know the Miami folks, we did Miami last week and …

P: I'm going to contradict this for a moment, from the economic benefit, if you had oil drilling; on the jobs and the economy, you would have a good economy in the state, not just on the east coast.

P: But we don't have oil drilling.

P: No, no, I said if we did.

P: Right. But we're doing this right now.

M: So it wouldn't be like…the residents would pay indirectly. If I'm renting and the guy that owns or the woman that owns my property…

P: I didn't say property owners.

M: Yeah, it would be property owners and so would residents would not be accurate when I said yes, it would be the owner of the property, there would be a certain charge and presumably that's going to come back to me in terms of higher rent.

P: Yeah, my granddaughter's not paying, she's not a property owner.

M: It would be, so… it would be kids, it would be my home. You could argue that I was paying or my wife, myself and my two young boys were paying it, I mean, it would be to property owners in the state. Another approach that we thought about was a surcharge on oil based fuel products like gasoline, diesel and oil. And a third way we thought about was a surcharge on vehicle registrations in the state of Florida. There might be other ways out there, what are your reactions to them? Do you like any of them? (Talking)

P: I don't like any of the three.

P: If the oil company's going to benefit when you look at their balance sheets, they've got billions of dollars of profit. Charge them if they're going to drill, charge them a surcharge to put a permit, and then so much a barrel and that ??? the whole thing and that leaves a surplus.

P: But the problem with that is they're not drilling in the state of Florida so the strait of Florida can't control what the company does.

M: I'm sorry, go ahead.

P: Well the idea is if it works.

P: Well, its hypothetical,

(Background talking)

P: It doesn't make any sense. Why would I pay for someone else to profit?

M: So the implication there is that there's no value to you of a pristine environment in Florida? I mean that's kind of what we're getting at.

P; Well, that's a good point.
P: Of course there is, but at the same time, I just want to say, if I'm digging in your back yard and I'm looking for whatever it is…and I'm making a profit off of you and then I'm going to turn back around and fine you, why should I?

M: The reason why this gets complicated from a legal standpoint is there's no title to the land…

P: There's jurisdiction…

M: Yeah, places where they're drilling for oil. That's what makes it unique to you digging in my back yard. That's one of the challenges. It's an excellent point and it's one of the challenges that we face. It's a common property out that way, you could argue that the US government has some say so but it's not like them digging in my back yard.

P: But most oil companies agree, to give you an idea, just go on Goggle BP-financials. Look at the billions of dollars of reserves they have all over the world. And they aren't the biggest one. If the oil company thought they could buy a lease from the US government to drill in a certain area and with that came a codicil they had to pay a surtax to the state of Florida, why they wouldn't bat an eye on it because it's to their benefit.

P: Yeah look at that and they whine. Look at when Exxon had that wreck, I don't remember the exact numbers, we're talking several years ago, so I'll make up a number out of the top of my head. Sixty-four record, 64 million in profits, they turned around and oh no, that's not true. It's really not as high as you think when you add in the cost of refining it etc. Excuse me, I run a business, you can't declare it as a profit without taking, subtracting what it costs you to get to that point to begin with, from it.

P: It should be the bottom line

P: Secondly, they don't tell you every dime that I spend, that I must spend to do, to run my business. If it's an expense that I cannot get out of, that it's necessary to do my business, such as all my employee wages and my materials, it's all tax write offable. They get the same deductions we little guys do. They get better deductions than we do. So how are you going to sit there and tell me that the 64 million wasn't really in profits? Profit is profit, it's pretty cut and dry.

P: No matter what, we're going to pay for it what they charge us for gas or property taxes.

M: I mean...

P: Rather than nickel and dime me, then I'd be willing to consider it. (Background talker)

P: It would have to go into the sales tax somewhere so that the tourists have to pay too.

M: Hold on a second

P: I wouldn't mind seeing some other alternatives. There's a lot of people who benefit in the state who don't necessarily own property.
M: Sure, any other ideas on ways to …

P: I think that's why you brought up registration and car registration…

M: Yeah, definitely, but there's people…my sister's husband's parents come down from Ohio, they don't stay 6 months to a year, that kind of thing.

P: Our state survives due to money from tourists so I don't mind getting a little more from them. Come to the beach. They probably go to the beach more than I do.

P: How about a hotel tax? That's …

P: They already spend this much, they don't mind spending a little more.

P: What's another 5 bucks?

M: Ok, I've got one more worksheet here. This is all great, this is really helpful. I've got one more worksheet that we want to do, we want to read a proposed implementation and funding program, again correct it, edit it, something's not clear, anything like that. We'd like you to read it and there's 3 questions at the end that we'd like you to answer. Again, don't put your name on any of this. We aren't interested in who's saying what, it's just trying to get your feedback, answers to 3 questions and then we'll go through those questions. So would you pass these out? This is the last worksheet of the night. I know my students like to hear that, last one.

Quiet-Reading

P: Bill, if it's not a military secret, what have you come up with the gene pool to call for these meetings?

M: Actually, at the end of that, I'll ask Mike to address that.

P: Ok, I was just curious.

M: I'm not even sure exactly how they do it. That's what Mike's shop does among with many other things.

P: He's producing while you working?

M: That's right.

P: I was just nosy minded.

M: We'll talk about that at the end if you take a minute.

P: See I was born nosy, I had a relapse.

M: Ok, continue writing, I don't want to cut anyone off or we can wait for another couple of minutes to go by. To begin with, was there any information that you needed or wanted extra before answering these questions? What kind of information?

P: I almost wanted to put need more information for every question.

M: Ok, that's…

P: I almost came up with something to write but I really need more information.

M: Ok, that's good. Any particular…

P: Who oversees the program? Is it this petrol…?

M: The way we would do it …

P: Obviously, the Coast Guard are involved.

M: The Coast Guard would be the oversight organization.

P: There's certain branches of government involved. Ok, so it's not just the state of Florida involved.

M: Correct.

P: I need more information.

M: There's any of a number of ways you can do it, but what we're envisioning is the Coast Guard would not only be the monitoring organization but they would also be the operational, part of it would be the operational bit.

P: So the government would be a part of it?

M: Oh yes. Although you could structure it so the state is responsible for it too.

P: Why would this only be Florida? Why would they not do this along the entire coast?

M: You could do it over the entire gulf coast. (General talking)

P: We just live in Florida.

P: I'm sorry I'm being facetious.

M: No, no you could do it for the entire gulf coast. The way we're approaching this particular focus group is just for Florida. But it certainly can be implemented for Alabama, Mississippi, Louisiana, and Texas as well.

P: We could be the sacrificial lamb-we could start it.

P: For the sake of argument, let's assume since we're the ones with the last clean beach left, they're trying to protect what's left. So we'll start with Florida since the rest are already contaminated, why waste your money?

M: What we're talking about here is a program, I think we're all on agreement that we feel like the environment in Florida is …

P: Being threatened?

M: …being threatened and it's important to us. The Deep Water Horizon is an example of what can happen potentially when companies don't do what they're supposed to do. So what we're trying to propose here is the idea of an insurance policy like I said to get your feedback. Maybe it's not a good idea, we're not selling this or any other kind of proposal, what we're trying to do is get input from you all in terms of how maybe we need to restructure this, or maybe we're barking up the wrong tree?

P: Basically somebody's come up with a bright idea and now they're trying to poll the ground and see if they can get the citizens to support the bright idea or is it a waste of their time.

M: This is not been, there's no government agency that's proposing this.

P: Yeah, somebody's got a bright idea and now they're trying to find out if it's worth their pursuing to try and get the funding and do everything else to finish the idea.

P: I don't think you'll ever get it passed.

M: Well that's the kind of feedback that we want.

P: I will say I think the average citizen would call it reactionary and unnecessary. And even if it was just a $50 ya'll cited, most people would have some excuse why they couldn't pay it. You could try and say, hey, you're a smoker, you spend that much on one carton in a week and it's still not going to make a difference to them. Because it's their money, they don't want to cut…people are like that, they don't like…you say raise the taxes, and trust me, I'm one of them…

M: Oh yeah, in this economy, it's tough.

P: I've been doing without that.

P: Nobody likes paying for insurance unless they need it. And a lot of people wouldn't pay for car insurance if they didn't have to have it.

M: I mean this economy in particular is more difficult than it would have been four years ago, five years ago in trying to convince people.

P: If it's just $50 than I would be for it but I don't think most people would believe that guarantee that…

P: Good point.

M: So the methodology that we're actually using this is willingness to pay. It's an analytical technique and for some people they think it's important. But if you're not willing to pay than it really isn't important to you. That's what the surveys will ultimately tell us, is there a willingness to pay on the part of the people either the state of Florida or the Gulf or the US to…

P: I said I would vote against even though I would help fund the program.

M: Mm-hmm. Why?

P: And I don't think you should be mandated.

M: So you think it should be voluntary?

P: Somewhat. I mean what if I wanted to give $500?

M: I don't think anyone would object. I've never heard anybody in federal government.

(Talking)

P: I don't think you should say you have to pay the fifty dollars.

M: Mm-hmm

P: I think you'd even have a hard time getting it on the ballot.

M: It might well be. It is something isn't something certainly would be implemented now.

P: So 50 years, then it won't be $50. I don't know how relevant this is. Our younger generation is a lot more eco-coconscious than we all are. And other than this fine lady here,

you don't have anybody representing the people who actually would be up voting after it took ya'll the 10 years to get the plan ready.

M: Well [ ] is pretty young.

P: That's not necessarily true.

P: There are 15,16, 18, 20-year-old kids who their teachers are pushing them to care. They are more aware of it than we are.

M: Are you willing to make a vote on something based on the interests of your children? I mean that's a question.

P: I'm one of the nut jobs that would actually be willing to pay the $50, like..

P: One aspect if you got it on the ballot. What exceptions would be made for it? You know most mandatory programs come out with exceptions a mile long that it doesn't apply to. If you had it, it'd have to apply to everyone with no exceptions, or it won't stand a chance. It would almost have to go on the ballot in a referendum so we could vote on it.

M: Oh yeah, I think it would definitely…

P: If you did a focus group just before I had to pay, then I'd come.

(Laughter)

M: What we're doing is we use this to help us develop the survey instrument. Like I said we're going to do six of them scattered around the state. There's a whole methodology on developing surveys that get try at the heart of the matter. So we're asking a whole series of really broad questions, all of that's synthesized.

P: I've got a question. In this one part here, that says if the program would have been active at the time, just some of the numbers that are in here where you're having 100% effective or 90% effective, there's no way of knowing that those would have been the numbers, you know that that would have caused. Trying to protect oil from hitting the coastline, there's nothing that's 100% effective. So putting something like that in there is…it just seems like you're trying to lie to somebody to get then to go that way.

P: Valid point.

M: Well that's exactly the kind of feedback we're looking for here is how we present the information.

P: Any time you present that, I'm going to take, honestly, the moment you tell me something's 100% guaranteed, I'm going to call you a liar. That's just like somebody walking up to me and telling me, you can trust me. You wouldn't need to tell me I can trust

you if you didn't consider yourself untrustworthy. It's a basic fact. When you're dealing with oil and water, there is no 100%, it's like trying to scoop it out with a spaghetti strainer, you're going to miss some no matter what. Throw some butter in a bowl at home. Try it in a bowl of water, melt it, try to get every bit of butter out of that water. You can't do it. There's still going to be some of it in there.

P: There's also some of that in the way they do that on TV on that oil spill. Every time I turned it on, somebody had a new method. (Talking)

P: Tampons worked great but they don't want to discuss that one either but there is no way you can say we're going to get 100% of …I agree with [ ] that (Talking)

P: It's says it's drastically reduced those numbers, that would be a little bit more true.

P: Those are projections based on having something and not having something. I don't think you said it's accurate as far as that goes.

M: Mm-hmm (General talking)

P: It says it's a guarantee that you can keep it all off our waters. Can you guarantee that? That's all we're saying, can you really? I'd love to see that number, I'd really love to be able to believe that but come on nothing's 100% effective! 99.4. something something.

P: Just some of the booms they were using to try to keep oil off the coast and if there's any kind of waves, they get torn apart, useless.

M: The booms were not particularly effective but they demonstrated that, we learned a tremendous amount from the Deep Water Horizon. A lot of it was maybe what doesn't work but I think there were some positive lessons learned.

P: That was the number one protection, every state in the coastal region invested in them, because they were assured that it was going to work and now pretty much in every state, they were useless.

P: Oh, you're talking about those little yellow plastic covers? Oh yeah, that was joke in Louisiana.

M: When you got that wave action, they weren't effective at all.

P: Yeah.

M: But they were all efforts to try to ameliorate the tremendous impact, no questions about that. So if most of you all voted the way you did because the information, there was some skepticism I guess, so the effectiveness of the program or the financial viability of the program, that would be it.

P: Yeah, pretty much. Like I said, I would vote yes but…

P: I think $50 is a small price to pay for something like that to protect the disasters.

P: If you guaranteed me $50 or less, I'd vote yes but I do agree with her point that there'd be a lot of people who don't want that mandatorily shoved down their throat.

P: So even if you go and approach somebody when you know they're giving a bunch of money back, like at tax time, when you know somebody's going to get 6 or 700 dollars at the minimum, you go and approach them for $50, at that time to pay for it and most people are willing to look out for …

P: That's what I said. And then you're looking at, I'm going to give you another voluntary aspect. I don't know how many people are as asinine as me about this but I am pretty asinine about this. There are charities that I support and as soon as they send me that envelope and it's got 3 boxes to check, $25, $50, or $75. My automatic reaction is you're not getting a dime from me because how dare you decide how much I should give? You don't know how poor I am, you don't know if my kid went without shoes this week or not. I don't like the idea of anybody telling me how much I have to give to make my contribution valuable to that charity.

P: But, Bill, back to your question, I think for this to be effective, it has to be enacted by the Legislature and then have to be put on the ballot and presented to the citizens accordingly.

M: Yep.

P: Then it's success and failure is going to depend on how it's presented.

M: Yep.

P: …and the benefits and features of it. And we've got enough people in Tallahassee that are very smart about writing the benefits and features of anything. And if they go into it that way, I think you'd get more people that…well a lot of people aren't going to like it, but more people will go along with it. But regardless of the amount, it would have to go through Legislature…a ballot issue.

M: This is not anything that any government agency is promoting. We're just trying to get at people's willingness to pay. Is this important, is the environmental quality to you? If it's important to you, ultimately, the survey that we put together is going to try to get at people's willingness to …

P: Well, I'll say and after the $50 I quoted, it's important to me. I honestly, am not going to say I'm the brokest person in this room but I betting I'm pretty close. I'm not going to point fingers to those I think are on my economic standpoint because that's just déclassé. But I'm pretty sure that I'm about as broke as we're going to get in this room and yet, I'd still be willing to pay as much as $100 a year. The problem is would I be able to pay it when they're

demanding I pay it? Would I be able to put my money where my mouth is, would I want to put my money where my mouth is, yeah I would. But you're talking to a very reactionary, political….I am like all the way out in the left field of eccentric when it comes to politics. Everybody who knows me will tell you don't get into a political discussion with me. I'll tell you that, ok, because I am very anti-government, I am sick to death of people who want to sit there and run their trap but nobody wants to give up a day's salary to do anything about the problem. I'm very much the put up or shut up type of person. Most people, they don't live the kind of life I live, I can honestly say, I've been sheltered to some extent. My husband does the work, I do the office work at home. I don't live in what they call the real world. I'm aware of that but I would tell you atrophy's killing the world. People just don't care enough anymore.

P: And what happens if you just don't pay?

M: These are all questions, if it comes and it's a property tax…(Talking) Yeah. That's all part of we have to take these things into consideration. That really pretty much covers what we want to cover. Are there any final questions, comments?

P: I'd like to know whose idea it was originally but I know you can't tell us that.

M: Well, no all we're really trying to do…is it's no one's idea, we're just trying to say is environmental quality important to the people of Florida and if it is, the way you measure that is are the people willing to pay for it?

P: Ok, somebody put some thought into the plan ya'll put here. Somebody's got an idea somewhere.

M: Well, it's a team of us, we were just trying to come with something. It's a team of us, it's actually not just…we've got people that have studied this contingent valuation (willingness to pay for environmental quality) on the project from Ohio State, from Appalachian State, and Colorado State. So we went out and tried to find some of the people that had done a lot of this work before and they don't understand the particularities that are Florida based. But we're trying to work together as a team to determine if there is a willingness to pay for environmental quality in the state of Florida.

P: So what you're doing is not right or wrong, it's research?

M: Exactly.

P: This is pretty much like the first step of actually trying to get something like this going. Envisioning this runs in a positive direction.

M: Exactly, if it turns out that people aren't willing to pay then that takes us one track or maybe we're at the end of the road. But if they are willing to pay, then we take the next step of the research.

P: I was just curious, is this a real program that's being proposed?

M: It's strictly created by a dozen of us…

P: Just to cause a discussion like this?

P: I'm sorry to hear that.

M: The reason we're doing it is we think there's an interest in doing something out there.

P: There's a lot of programs now that started just like this.

M: Yeah, exactly.

P: What's a possibility?

M: This is the first step in the process. If you would just throw your papers in the middle of the table, I will collect them. Everybody needs to see Mike before you leave, I want to thank you all for your participation and your contributions.

P: Bill, thank you, you've done a nice job.

M: Well, thank you.

(Everyone claps)

M: Thanks, this is exactly the kind of feedback we need, to point out weaknesses, how we address it. We really appreciate your input, it's very important, certainly for us in Florida and I think even for the Gulf area so we appreciate your comments. We'll hang around, Mike and I are going to be around, so if anybody has any questions, you want to talk about it a little more, have some drink, have some munchies and again see Mike before you leave.

P: Mike was going to tell us …

M: Oh that's right, Mike was going to say how he found ya'll.

P: I want to go on record I'm the accident, somebody cancelled and they had to call me as the fill-in.

P: Well, that's good.

M: I'm glad that you were there.

P: As for environmental, there are a group of young people at the University of Florida in Gainesville that are working towards trying to make Florida better and they're doing very good at what they're doing.

Tape off.

Orlando Focus Group (March 23, 2011)

M: See that was one of the things I wondered if we should spell out. That's what we tested so now we spell it out. That's the kind of input that we need. Are there any other Federal programs that you all can think of?

P: ???? one of the ??? question is, whether you might want to word it a little differently because you're saying providing the funds for new sources of energy and I don't know if it would be more appropriate to say something about funding for alternate sources of energy.

P: Ok, alternative.

P: Alternative versus oil and gas.

M: Thank you. That's a good point. Any other particular points?

P: I think I can add to that list, maybe, health insurance.

M: OK.

P: Benefits.

M: That's one that's gotten a lot of discussion in the last year or so.

P: Yes.

M: Good. Ok. Well these are just a very few of the federal programs that the federal government currently spends tax money on. Sometimes there are new proposals that come up, and the federal government, particularly in these budget times does not want to start new programs unless tax payers are going to be willing to pay the additional costs for them. One way for the federal government to find out about this is to give the citizens input on whether or not you think a program will be worthwhile so you can make up your mind about it. Your views are very useful to the policy makers and the decision makers in deciding what, if anything to do about a particular situation. And in interviews of this kind some people think that the program asked about is not needed, other people are going to think it's needed. And that's fine. That's the kind of input that we need. Just the last question on this particular handout. Have you ever been interviewed before on whether or not the government should start a new program? If you'd just answer yes or no or not sure as the last question on that. Fill that out if you haven't answered that already.

P: I'm assuming that you're talking about the ???

M: Yes sir. All right. I'm going to ask Mike to collect these. We're going to be handing out and collecting during the course of the evening here. In the past people have been asked about various types of government programs. In this interview we're going to ask you about a program that would be designed to decrease damages due to oil spills. The program I'm going to describe is designed to limit the impacts of large oil spills in the Gulf of Mexico. I'm going to begin with some background questions first on past oil spills, then we'll provide you with some background information on the program that's being proposed, and you'll be offering some evaluations on it. And then we're going to ask whether you think the particular program is worthwhile or not and why you think it's worthwhile or you don't think it's worthwhile. So that's kind of the process that we're going to be going through here. So if you want to go ahead and hand out no. 2 there Mike. Um, I'd like to ask you for some input now on which oil spills come to mind as having, come to mind at all, which ones were damaging to nature in your lifetime? These can be oil spills anywhere in the world that caused significant harm to the environment. If you just want to list them there by name and/or if you know the name where it occurred. If you don't remember any, that's ok too. And if you don't remember the name or the location but you remember a rough date.

P: What was the one last year?

P: The one that was Florida.

M: Deep Water Horizon was the one that was last year.

P: Ok.

P: Yeah, got to have a name for them.

M: Yeah.

P: What's it called?

M: Deep Water Horizon was the name of it. The oil platform.

P: Wasn't the Alaska the Exxon Valdez?

M: That's right.

P: That's a good one.

P: When the boat hit the bridge in Tampa was there an oil spill?

M: I don't know that there was much oil released on that. I don't recall there being very much oil loss or oil damage associated with that. That was largely structural.

P: But it still put a lot of nasty stuff in the water.

M: Sure.

P: I don't remember whether they breached the hull, because I think what happened is the ship above the water line is what hit the bridge and did the damage. I don't know that there was much…

P: How about whatever vehicles that fell down.

P: There was some of that. So it would be.

P: That was pretty nasty stuff.

P: Yeah.

P: ?? recycle a whole car, you know people buy cars, you've got to take everything out of it. It can't even be driven.

M: That's a good point. I hadn't thought about that. Ok. When you're done with that we'll ask Mike, did you have a question? How many remember the Deep Water Horizon from last year? Most of you.

P: I think that was the worst.

M: That was a lot worse than the Exxon Valdez. The problem with the Exxon Valdez was it was really close to the shore, so it actually, up in Alaska that was bad.

P: So it just shored oil.

M: Yeah, it smeared because it was really close to shore. Actually there was a big one off the coast of Mexico back in the 70's, but it didn't impact the US very much and the Mexican authorities weren't able to document damage because they don't have the research capabilities that we do. So that one was a big one, bigger than Exxon Valdez, not as big as Deep Water Horizon, but those are the 3 big ones that have impacted the US.

P: Wasn't there one, we're only focused on those that impact the US?

M: No, if you remember some from others…

P: Wasn't there one in the Mediterranean ?

M: One than impacted Spain. Most people don't remember that. Yeah. There was one, I don't remember how it ranked in terms of the amount of oil that was spilled.

P: So just put Mediterranean?

M: That would be fine.

P: Was that a super tanker that broke up in that one or something? In Spain?

M: I think it was a collision actually. I think it was.

P: So the quantity was limited to whatever the ship was carrying.

M: Yeah, like Exxon Valdez.

P: But it still only takes one drop of petrol to contaminate a million gallons of water. That's true. That's fact. History channel fact.

M: Wow! All right Mike, do you want to go ahead and collect those? We're going to discuss this more in a moment, but for now I'd like you to think about environmental impact. And Mike when you get those if you'd hand out no. 5 there. What was it about the natural environment in the Gulf of Mexico that you feel was most seriously damaged by the Deep Water Horizon? If anything at all. I mean you may not think it was that damaging. Mike's going to give you another handout here and if you'd just write some notes on that about the aspects, it says on the sheet, what was it about the natural environment about the Gulf of Mexico that you feel was most seriously affected, if anything was affected by the oil spill? This is a little dry. It's going to get more interesting here in a couple of minutes. What sort of things do you think about with respect to this question?

P: Wetlands up in Louisiana. Marine life.

M: Absolutely.

P: And they won't be able to get the oil out of those.

M: Those wetland areas?

P: Yeah. There's always going to be a digging there, there's going to be a layer that's going to be oil.

P: Life forms. Birds, fish.

P: Beaches.

M: Beaches.

P: Industry, tourism.

M: Absolutely.

P: Is that the natural environment?

M: It's not the natural environment. We're going to talk mostly about the natural environment, but the natural environment certainly effects tourism. It affects fishing, commercial fishing, and recreational fishing. All of those things are ??? related. Ok. Good. Mike if you want to go ahead. Any other comments?

P: ??? around like they sink ships now..

M: Artificial reefs.

P: For reefs.

M: Ok. Mike's going to, as soon as he gets those picked up, he's going to hand out a map of the Gulf of Mexico and another handout for you to fill out. We've got a map and a little questionnaire there, if you would take a look at the 2 questions on that handout, go ahead and answer them and we'll talk about that a little bit. Growing up here in Orlando I tended to hit New Smyrna and Cocoa rather than get to the Gulf beaches. But a lot of folks have particular places they like to go on the Gulf coast, so if you've visited any on the Gulf there and what activities you did. That's basically what we're looking for.

P: That's the side you get beach tar right?

M: I used to get it here when I was a kid. I can remember some places, in fact some of the hotels would have a little thing of mineral spirits.

P: Do you remember when was the last oil spill?

M: It was April of last year, was the Deep Water Horizon. April of last year, just about a year now. And when I was little some of the hotels would have kerosene and a rag and when you came up from the beach you cleaned your feet because they didn't want you tracking. But then I don't remember that once I got into high school and stuff.

P: Ships used to wash their ???.

P: I was wondering why there was such a consistent amount. It's like man if it's leaking why don't you fix it?

P: They were just using ??? They don't allow that anymore.

M: Ok. Mike you want to collect that and hand out map 2 for us?

P: They hand out gasoline and rags anymore. 9-11

M: You can hang onto that.

P: On the map are we supposed to identify the part of the map where we visited?

M: If you'd like to do that, mark it on there and we'll take that up as well.

P: I remember there was ??? Massachusetts.

M: Really? I remember that when I was younger and then when I got…

P: I didn't swim.

M: Well it's cold up there.

P: It was very cold but we went there sailing and I remember there was oil there.

M: Some oil there.

P: I was probably 7 or 8.

P: There's also, there were a bunch of ships that went down in the lower, all along the coast, and they say some of those are rusting through and letting stuff go?

P: Down here or up there?

P: All along the northeast coast.

P: I remember thinking oh, that ??? really smelly ??? Fishing, The main thing I remember about where Glouster was located it smelled terrible.

M: Did it really?

P: Awful from the fishing boats and all the fish. But we spent a week in Marble Head and it was kind of oily. But it was more of the yacht club, resort area and all that stuff so it didn't smell fishy.

M: There was some oil there.

P: There was some oil everywhere. I don't know if it came from the boats that were there or if it was washing.

P: It's hard to tell. There's an island off San Francisco, a fair amount of islands where the military used…

P: They still do. ??? ships are out there.

P: Yeah. They had their nuclear subs and were holding them out there too.

P: Really?

M: All right now, map 2 shows the drilling regions in the northern Gulf of Mexico and each of the yellow dots on that map represent an active oil rig platform. Those are just active rigs out there. As of 2009 oil production in the Gulf of Mexico accounted for about 90% of all US offshore oil production and 29% of all US oil production, which is offshore as well as onshore. Also as of 2009 Gulf of Mexico offshore proved oil reserves accounted for 19% of all US proven oil reserves. Proven oil reserves being reserves that are have within 90% confidence level of the oil being able to be recovered under current economic and political conditions with existing technology. Oil extracted from offshore wells in the Gulf of Mexico is shipped to refineries in Texas and Louisiana where it's refined into fuel such as gasoline, diesel and heating oil. Mike you want to hand out map 3 for us please? This is the stage where we talk about some background information.

P: I had no idea there were so many rigs.

P: Really.

P: And the way they talk about it on the news, like we've probably got to get one out there. There isn't one out there.

M: I had no idea until we started this project. I remember flying over years ago and seeing a lot. I had no idea it was that many. It's an incredible graphic right there. On map 3, map 3 shows the location of the Deep Water Horizon oil spill and how it affected the Gulf of Mexico. The blue X is the site where the oil spill occurred, and then the oil rig burned and sunk. The orange shading over the Gulf waters shows where surface oil was detected after the spill. The darker the shading the longer the oil was present in that particular location. The lightest shading shows areas where surface oil was only present for 1-3 weeks. The darkest shading shows where oil was present for 16-18 weeks. The areas in the coastline that are black represent areas where oil spilled from the Deep Water Horizon made landfall. About 1050 miles of Gulf of Mexico coastline was impacted by the spill. The coastline consisted of estuaries, coastal wetlands and beaches. Oiled areas can kill vegetation, and accelerate erosion. In addition to the surface oil shown on the map large pockets of sub-surface oil have been detected and shown to be a result of the Deep Water Horizon oil spill. A layer of black residue on the sea floor has been identified which could impact the food chain of the Gulf of Mexico. Mike's got another card here which we're going to distribute. This card shows some of the species affected by the Deep Water Horizon oil spill and how they were affected. The statistics are from the federal government, Gulf of Mexico Restoration Program and were for animals recovered through November 2, 2010. It's important to note that not all the dead animals that were collected were visibly oiled, and that it's possible that their deaths were due to other causes. Also not all of the visibly oiled animals died. Some of them were collected alive, cleaned and released back into the wild. It's also worth noting that the actual number of animals affected by the oil spill is probably higher than what was reported on card because it's likely that not all animals injured or killed due to the oil spill were recovered. The bird shown in the upper right-hand side of the card is a brown pelican. It's a recovering species that was taken off the

endangered species list in 2009, but it was one of the species that was most affected by the oil spill. The turtle shown in the middle photo is a leatherback turtle. It's one of 5 species affected by the spill. All 5 species of sea turtle found in the Gulf of Mexico are listed an endangered. The bottom image is that of a bottle nosed dolphin. And they were the main marine mammal species affected by the spill. The dolphins are found throughout the Gulf of Mexico and they are not an endangered species. Although the long-term effects of the Deep Water Horizon oil spill are not certain, past experiences with oil spills around the world provide some insights on how oil affects other species. While adult fish may be able to avoid oil, fish eggs and larvae can be damaged or destroyed by oil. With past oil spills some fish species that were negatively impacted did not show decreased populations until years after the spill. The Gulf of Mexico is also home to species of crab, shrimp, oysters, clams and mussels. And these species can all be damaged and destroyed by oil in the water. Now was any of this information that I presented confusing or unclear? Or do we have our script pretty good? Pretty good? Was the information presented in the handouts easy to understand combined with the information that I provided? Pretty straightforward? Ok. Was there any other background information on the Deep Water Horizon that you'd like to know?

P: Yes.

M: What?

P: How much is still down there?

M: That's the $64,000 question right there. No one's real sure of that. There's a coating on the ocean floor. There are the sub-surface pockets that no one is sure where they are of if they're still in existence or if they've dissipated. So that's a question that we'd all like to know the answer to.

P: If they're continuing studies and evaluations?

M: Absolutely. Absolutely. And they will be going on for many, many years. And all throughout the Gulf. There's a number of institutions, the University of Florida, the University of South Florida, a number of institutions just in Florida that are following this real closely, as well as LSU, you know universities throughout the Gulf. Over in Texas.

P: Prior to the spill was there any of that stuff going on?

M: The nature of the research has changed considerably. There was a tremendous amount of research being done on the Gulf and the Atlantic coast of the US as well. The Atlantic coast of Florida. But the type of research and the efforts to track oil spills, that's certainly getting a lot more emphasis now more than ever before and actually you can see that's part of what we're talking about here in this particular study we're doing right now.

P: During that spill they talked a lot about the Loop Current. Was there much oil that got into the Loop Current, none?

M: The Loop Current actually kind of goes up along the Texas coast, swings around the Louisiana/Alabama/Mississippi coast, down along the west coast of Florida and then through the Straits of Florida between Cuba and Key West and up the East coast. We were very fortunate in that not much of it got into the Loop Current. So for example the damage to, when you look on Map 3, you'll note that not much of the oil spill touched the Florida coastline other than up towards Pensacola and Panama City. It could have been a lot worse. We were probably lucky that the hurricane didn't hit because that would have probably distributed the oil and it probably would have gotten into the Loop Current. But when it was going on no one knew. I mean we didn't know whether we were going to be dealing with it in Key West or Naples or Tampa. All very uncertain. But not very much of it, as it turned out, got into the Loop Current.

P: Well it would have been helpful, when you were reading statistics for me to had had that in print in front of me, simultaneously.

M: Ok. All right.

P: Because, just the way my brain works…

M: If you get two forms of emphasis, you hear it verbally and you are reading it too that can transmit information.

P: Yeah. On processing a bit of information and thinking about it and you're already ahead on to the next statistic.

M: Ok.

P: And then I'm getting the jumbled in my brain.

M: Ok.

P: I've got a question on card B. Have there been any studies on what percentage of the animals that were found versus was percentage was actually harmed? Cause you have a sampling here where this is where humans found 6104 dead birds. Well that depends on how many humans are looking over how big an area to determine whether that's a statistical sample of how many.

M: We'll look in a minute here because we're going to look at some estimates of, there's normal attrition, birds are dying, fish are dying, leatherback turtles are dying from other methods and we'll look in a few minutes at some statistics that kind of compared…

P: My point was the sampling. Like let's say there was 20,000 dead, but because of the number of people employed, the area looked at, we found 6,104. Has there been any study to compare how good our sample is?

M: I don't know the answer to that. Most of the searches, obviously, were going to be in near shore waters, probably from Naples, or maybe not quite that far south, but the Tampa area certainly, up all the way around to the Texas coast there. But it was near shore waters. You're not capturing the birds that might have been oiled and drown and drug out to sea. So I don't know that there has been, I don't know the answer to your question in terms how big an area was sampled.

P: Because this appears to me, these are facts. These are 6,104 birds are dead. But I really have a personal feeling that it's many times that.

M: I think we can generally assume…

P: Yeah. And that's not reported in this.

M: Yeah, we want to try to fairly, we don't know. We don't know the answer to that and it's tough to say three times more than that were killed or 4 times more. I don't think anybody really knows how many more than that was killed. And rather than present information that we're not certain of we try to stick with the data and the information that we are aware of in terms of the number that were dead and the number that were oiled and that sort of thing.

P: But my point is that may need to be explained.

M: Ok.

P: Because the inference reading of this is , my buddies say I get into an argument and they say that wasn't very many birds dead. That's no problem. You know. And I think the impact is a lot greater than that.

P: Either that or you could put it's a statistical sampling or some type of disclaimer that it's an approximation; it's not an accurate…

P: Yeah, but to me it's not an approximation.

P: It does say collected.

P: They're just telling you their sampling.

P: Yeah.

P: Which is probably much more accurate with birds than it is with sea turtles cause they're further out. Birds tend to be a little closer to shore.

M: Some of those that were collected died; some didn't with all the species. But you're right, the leatherback turtles, you're not going to catch them.

P: Yeah, you're not going to find the turtles.

P: But a lot of this coast is remote so the guys go by in their powerboat drinking their coffee and they see one and then the next 8 hours they're going that way. Well there's a lot they missed.

M: Yeah, there was a lot of activity in the near shore waters but I'm sure it didn't catch anywhere near, or capture anywhere near the… Because when you look at the near shore waters there wasn't that much in coastal area real close to Florida there.

P: If you look at those marshes, humans in a boat they can look at a few square meters of that at a time and there are thousands of square meters that are oiled.

M: Yeah, the wetlands are.

P: Who knows what died in there.

M: Yeah. Good point. Good point.

P: No one's ever gone in there.

M: Ok, if there are any other notes that you want on any of these handouts that you want to sketch on there please feel free and we'll collect those up as well. Now if Americans think it's worthwhile a new program could be implemented to lessen the impact of another large oil spill in the Gulf of Mexico similar to the Deep Water Horizon oil spill. This program would do 3 things. First it would help to prevent oil spills from occurring. 2nd it would monitor for oil both near the surface and sub-surface to help target cleanup efforts and measure the amount and movement of spilled oil. And 3rd if an oil spill does occur it would prevent the oil from spreading and causing additional harm to the environment and the overall eco-system. Now Mike's got a card here he's going to hand out. Now the program being considered has 3 parts and they're summarized on this card. Part one would require additional equipment and procedures during the drilling process. It would apply to all oil companies actively drilling in the Gulf of Mexico. Part 2 would establish an oil monitoring program around the active drilling area, the area with those yellow dots that we looked at on the map earlier. And part 3 would establish a new oil spill rapid response program. And I'm going to take a couple of minutes now and describe how the program would work. All of the Gulf of Mexico oil drilling rigs would be required to use new state of the art equipment designed to prevent oil spills should something go wrong in the drilling process. Each piece of equipment would have 2 backups that would be automatically triggered if needed in the event of an emergency. Oil companies operating in the Gulf of Mexico would be required to drill relief wells at the same time the main oil well is being drilled. By drilling the relief well at the same time as the main well, spills would be contained more quickly and impacts would be reduced in those rare cases when both the main and backup drilling rig equipment security measures fail. Currently when a blowout preventer fails a relief well is drilled into the main well and is used to pump cement into the main well sealing the leak. As with the Deep Water Horizon spill the relief well can take months to

drill while oil continues to spill from the main well. Next the program would install monitoring equipment every 10 miles around the drilling region in the northern Gulf of Mexico. The equipment would detect oil from the seafloor to the surface so it would catch some of the sub-surface pockets which we really aren't able to capture very well right now. And it would both help to identify large pockets of oil and identify movement of oil. Lastly a pair of rapid response ships would be designed and operated by the U.S. Coast Guard. These ships would be permanently stationed in the oil drilling region of the northern Gulf of Mexico and would be able to reach any spill within one day. The ships would carry a variety of equipment designed to contain another large oil spill similar to the Deep Water Horizon spill. And the ships would also have submersibles and robotic equipment like those used to stop the Deep Water Horizon spill. So that's, in sum, a brief description of the program that we're talking about here. Mike is going to give us another handout here with some questions.

P: Who pays for it all?

M: That's what we're going to get into here in just a minute.

LAUGHTER

P: And the Gulf of Mexico is a U.S. possession?

M: It is not. That's the issue, one of the issues that we face, is there are 3-mile territorial limits, actually the territorial limits for Florida extend out 12 miles, but when you look on the map there's no oil rigs, Florida's effected by the oil rigs but there's no oil rigs off the coast of Florida because we don't permit it at this point.

P: Right.

M: But that's one of the challenging legal questions. What legal authority does the United States have to regulate and monitor oil drilling in waters that aren't part of the United States? So that's one of the legal challenges that we face in monitoring some of these things.

P: Aren't there leases that are issued for these

M: There are but the legal nature of the leases I'm not an attorney. Apparently they offer some challenges when it comes to requirements, what we can and can't force the oil companies to do or to pay up front basically.

P: Isn't there a 100-mile limit there?

M: The 3-mile limit, there's certain legal properties associated with that first 3-mile limit. And then there's 100-mile limit that affects fishing, some of the commercial fishing activities, but it's not like drilling on land. Drilling on land it's a much more defined legal setup than what we have when we drill in the Gulf. That's one of the things that I've

learned as we've gone through here. It makes it a little more challenging to certainly do the regulating that we want. So we'll talk, if you fill out no. 8, or excuse me handout no. 5 and then we'll discuss that. We understand that we haven't talked about the effectiveness of the program or the cost of the program, how it will be paid for. We'll get to that in a minute. But we'd like for you to answer these 2 questions first, issues of cost, who pays, effectiveness. Any particular items anybody wants to toss out there, other things?

P: Just on this part 3 which sounds nice, rapid response, I was just wondering if they were planning to have these ships with skimming capabilities.

M: They would have skimming, some skimming capabilities, the booms that they used with some measure of success as soon as the ocean waters got very choppy the booms weren't particularly successful, but they would utilize the things that they learned from the Deep Water Horizon spill, which is why submersibles and other equipment that turned out to be pretty successful, they would rig these ships with that kind of technology so that they would be able to respond quickly, which that was one of the problems that we ran into. Yes sir?

P: It says that all Gulf of Mexico drilling rigs. That means that all the old ones would have to be retrofitted?

M: That's what they're talking about doing. Actually going back and getting the old rigs retrofitted. Now the question is whether or not they would have to drill relief wells and we're not sure legally whether they can require them to drill relief wells. And for all those wells there's probably an equal number of old wells that have been capped off going back to the 1950s. We don't even know where they all are anymore.

P: Quick question. Do those dots represent any of those old wells?

M: No those are just active wells. Those are just active wells.

P: You mentioned that there are 2 backups. Do we know, do we have any information on those? Like 2 backups doesn't seem like a lot in recent news.

M: Well one of the problems, Deep Water Horizon had a emergency shut off that was not properly maintained.

P: Right.

M: So I think one thing that we can all be sure of is that, monitoring programs for the backup, the blowout preventers, are probably going to get a lot more rigorous in the near future. They are going to be monitoring the maintenance of those things more carefully. And what they're talking about is basically 2 blowout preventers; so a backup to that one. As well as, in addition to the relief well which would be, it would probably be almost drilled all the way down to it and then they would just be able to pump cement in there if they needed to block of the original well.

P: During the Horizon there was some talk about whether or not some of the detection went down far enough. Will these monitors, how far will these monitors go down to detect?

M: They are going to go all the way down to the ocean floor. Which is not, in most of the drilling areas is not, I mean Deep Water Horizon was one of the deepest out there at 5,000 feet. And a lot of those that are in near shore waters it's not nearly that deep. But the monitoring systems that they're talking about will take samples of the water from the sea floor all the way up to the surface. I don't know at what intervals, but at certain intervals, so that if there is a sub-surface plumb they would be able to pick that, and they do monitor, the Coast Guard ships would be equipped to receive satellite signals that are sent from each of these monitoring stations so they would be constantly monitoring for any anomalies or any differences they see in water quality. So there's some pretty elaborate technology being talked about here.

P: Was there a committee of experts to come up with this proposal and where did they come from?

M: This is a proposal now. And it has not been, all the engineering associated with it is not necessarily laid out. In other words they have not brought the numbers on what the costs would be to achieve and equip the ships that they want to. But there has been some input from a number of different experts in different fields, whether its hydrologic movement of water and the oil industry engineers and we're kind of doing some of the public policy assessments, just trying to get input. It's not very formal program at this point. But we're trying to see if there would be support for a program such as this to be investigated in more detail. That's kind of what we're looking at right now. If the survey research shows that there's not much support and willingness to pay then it's probably not going to go very far. So this is just very early stages. But indications are that the technologies could be adapted, incorporated into a couple. It would have to be brand new Coast Guard ships, specially trained crews and that sort of thing. There's been a lot of thought that's gone into it.

P: And a pair would be enough?

M: At this point, for the initial response, they figure if they can get 2 ships out there to respond to these kinds of blow outs initially, then bring in other ships as necessary. 2 wouldn't be sufficient if we had another major spill like that, but if they could get 2 out there in a day or so, quick response, they would probably, then with the relief well they could probably start pumping cement in the relief well very quickly. We learned a lot from Deep Water Horizon I think, in terms of what to do and unfortunately what not to do.

P: What concerns me is about getting government regulators involved and taking care of something like that is that government regulators have a habit of getting the mindset of we're the experts and we will tell you . And so they don't ask outsiders. And then you get a very insular attitude and they are no longer the experts and they start regulating with very outdated information, and you end up with some really big problems. And in 20 years

you're going to have very outdated work going on and they may be up to date now, but 20 years from now you're going to have some very outdated work going on.

P: There will be a lot more science developed that wasn't taken into consideration.

P: That's very much a problem that we have right now with FDA and USDA having worked in regulatory affairs, the food industry. And they think they know what's going on and you'll be sitting in a meeting and you'll go where in the heck did you get that idea? It hasn't been that way since I was in college.

M: Yep.

P: Don't you talk to anybody in the industry, don't you know? And I'm shocked.

M: You'll see there's a question at the end that addresses that very issue, about the question about confidence in the federal government.

P: They will be shocked because they don't talk to anybody because once they're in a government role they don't get back out and work in industry, and they don't listen and nobody wants to give them the real scoop because they don't want to be regulated more harshly. Then you end up with problems.

M: Nope. Legitimate concern. Absolutely.

P: A very big concern. And we are having that problem now with our food.

M: Well we'll get to a question on that at the end and hopefully that will address some of those questions and concerns about confidence in the federal government basically. That's fundamentally what we're talking about here. Federal regulators. Ok. Any other issues with regard to no. 5? All right. Let's move on. Now we know that the establishment of this program is going to be expensive. The initial cost of the new blowout preventers, the drilling of relief wells, the installation of new monitoring equipment and contributions to a Gulf oil spill prevention and rapid response fund to pay for the Coast Guard vessels would need to be paid immediately by the oil companies. It's estimated that part of this one-time upfront cost would be passed along to the public in terms of higher fuel charges during at least the first year with the program. After that the oil companies will be required by law to pay the Coast Guard for the annual operating costs for the Rapid Response Boats. And this program would be reevaluated after 10 years for possible renewal. Now Mike's got another card for you here. Points 1 and 2 are points that I just described. The new information is the 3rd bullet there. The Oil Pollution Act of 190 requires companies to employ safeguards and maintain their equipment but if found negligent they are required to pay for all cleanup activities. And that would not change under this program. Responsible parties would still pay for the cleanup. But this program would provide a type of insurance policy by reducing the chance of major damage from another oil spill. The program would not prevent damage from a spill anywhere else in the United States or international waters because the required equipment and response ships would only be

implemented in the Gulf of Mexico. So this is a program specifically targeting at the Gulf oil drilling region. And what we're doing now is we're interviewing people to ask how they would vote on this program if it was put on a national election ballot. So what to hand out Card E there please. There are reasons that you might vote for setting up a program like this and reasons why you might vote against it. And this card lists just a few, a very few of them. The reasons that you might vote for it, could prevent the deaths of numerous wildlife species, birds, sea turtles, and marine mammals. Protect the Gulf of Mexico habitat including beaches, estuaries, and coastal wetlands. Protect the Gulf of Mexico water quality including deep water areas. But there are reasons against. Mary mentioned one of them. Question about how effectively this would be implemented by federal regulators, which is not on there, but there is the list we have on there, many of the species being protected are not in danger of extinction, your household, you might prefer to spend money on other things, not so much for this. Some other things might be of higher priority. Or you might think there won't be another large oil spill like the Deep Water Horizon. Can you think of other reasons for or against?

P: You said it was a national vote? But I don't think that you're going to get a national consensus because not everyone touches the Gulf. Not everyone comes in contact with the Gulf.

M: Legitimate concern. Um, but a large proportion of seafood that we consume in the U.S. comes from the Gulf.

P: Yeah, I mean you'd have to do a huge market and education campaign on it.

M: Exactly, I mean if you're trying to convince people in Minnesota to vote to pay something extra for a Gulf of Mexico protection system, there would certainly be an education process that would need to be implemented. Any other reasons for or against?

P: Reasons for would be to protect jobs.

M: That's another; we're actually doing a series of these. What we're trying to focus on here is the environment, but we're doing other processes and surveys right now to look at the impact on hotels, restaurants, recreational boating activities and commercial fisheries. There's certainly a broad list of implications of these things for the economy in general. Absolutely. So jobs is another one.

P: Especially here in Florida. If you don't protect your environment here you know we're going to lose the tourists.

M: Ok. Mike do you want to start handing out card F there? Scientists believe that implementing the program would significantly reduce the impacts on the environment following another large oil spill similar to the Deep Water Horizon spill. The card F that you look at here would tell you on the top, the numbers that we looked at before, or some of the numbers we looked at before, the oil coastal areas, there's over 1,000 miles of Gulf coast was impacted by the oil directly. About 6,000, at least 6,000 birds killed, 600 sea

turtles killed, 100 dolphins killed. This ??? kind of gets at one of the things you were looking at a little bit, if the program would have been active at the time of the Deep Water Horizon spill, it's estimated that the oil spill impacts would have been limited to, at most, maybe 25 miles of the oiled coastal areas. So it would be 1,025 miles of the coastal area that would have been protected. Approximately 100 birds killed so 5900 birds saved, maybe 10 sea turtles killed. These are estimates but 590 deaths prevented and about 3 dolphins killed so about 97 deaths were prevented. Now this does not get at the other impacts on fisheries or some of the fish nurseries around the areas, artificial reefs or natural reefs where a dolphin can swim a long distance if they sense oil and try to get away from it. A lot of times the smaller fish in a nursery don't have that mobility. They can't get out of the problem area. But this basically shows a comparison what is estimated to have happened if a system like this was in place at the time of the Deep Water Horizon. Now the number of species it would protect is small in comparison to the total numbers. So this could be used as certainly a valid reason to vote for the program, but remember Card D where we looked at, I've got Card D here, um, where we talk about the establishment of the program, the expenses associated with it, the way the oil companies would be paying for it. We'll talk a little bit more about some taxpayer ways of paying for it. Again, if your household was called upon to spend money, to contribute money to help solve this environmental problem, you may or may not vote for it. Or the assessment might be more than what your household wants to spend. If this program were passed by a majority vote in the next federal election which would be 2012, would you pay for the program through increased fuel costs during the first year of the program? That's one of the questions that we're going to look at here a little bit. While the oil companies might be, hand out no. 6 there…

P: The oil companies always get their money from you, but why don't they just make this a surcharge on their profits?

P: Profits.

M: In other words a tax on the profits. The problem that you run into there as an economist, it is possible to manipulate profit levels, and they probably do it on a pretty regular basis. So if they knew that there was going to be a tax imposed on profits there would be a balancing act because they want to show profits to please their shareholders, but I'm sure there would be a rather elaborate economic analysis conducted of the tradeoff between having to pay less because they show less profits versus leaving the profits high and paying the higher tax. It's a difficult challenge. I mean we're struggling with it.

P: Yeah, their profits right now are based on the spot market of oil. And I doubt that this would have an impact on the spot market of oil. I would think you would get some sort of revenue stream by getting at their profits. But back to your fixes you're going to go, they are going to fight like a devil on trying to relief wells in the Gulf and they probably have a legitimate argument because you could run into a lot of environment problems by putting drills back in and messing with old drill casings. I'm not sure you would actually have a win on that one environmentally even. But even adding the additional backflow preventers is a risky business if stuff's been down in the water a long time and all the bolts are gone. So I

mean you'd almost have to have a study. Now the third part obviously, actually to the oil companies doesn't cost anything because even though you may think it's a big cost to have a couple of Coast Guard ships all set up to go, it's pennies to them. So I'd be really surprised about your impact here unless you actually do make them do these others and I don't think of strict environmental cost and benefit. You're going to run into a lot of trouble on that; especially the drilling into the old casings.

M: I think in the relief wells I don't know that they go into the old casings. They would probably just go 80% of the distance down to try to hit the casing.

P: Well they have to hit the casing or it's not going to…

M: Well but if they only have to drill, if it takes them 2 months to drill a relief well, if they get 80% of the way down there then it would only take them 20% of that 2 months to finish drilling that relief well is probably the way they would try to do this on the old wells because you raise a very good point. If you've got an existing well that's been pumping for years without any problems the idea of tapping into the side of that old drill casing is probably not something that you want to necessarily do.

P: Or even unbolting the top bolts and dismantling it and messing with it.

M: Yeah, there are certainly risks associated with this.

P: Roaming around it makes me nervous.

P: Yeah, that's going to be hard.

P: That's one thing that's making me very nervous in this whole proposal is drilling around those old ones. Because if they leave that out and just all the other stuff. And that's the most expensive part.

M: Get somebody to write that on the…

P: That's a very, very expensive proposal is to make a second shaft.

P: Absolutely. Absolutely. And if I remember right on the Deep Horizon they were saying they were going to have to come 2 different areas because one might miss. And if this is insurance then you've got to hit it. So I would think they would actually have to drill down and hit the old casing to know that they'd done it. And what a nightmare.

M: Cause more problems?

P: Yeah. Cause now you have the potential to have another well accident.

M: These are all reasons to vote against something like this if you have legitimate concerns. And that's exactly what we're trying to get at. We're not trying to pitch this positively or negatively, we're just trying to get your all's input. It's great.

P: I'm just saying, you're exactly right, you put that in there you'll probably lose the vote. Because, even environmentalists would begin to wonder if maybe we weren't causing more trouble than what we're getting from it.

M: ??? talking about some of the provisions that we have on the card C there. Well card F, again we've gone through the environmental impact and what we're talking here are our reasons to vote for and reasons to vote against. So the question, if you answered question no. 6, again this was completely anonymous, if an election were being held today and the total cost to your household for this program would be an extra $75 in fuel costs, because in reality if you impose more costs on the oil company they are going to pass it on to us in fuel, the cost of our gasoline, that's pretty much a given I think, would you vote for the program or would you vote against it? So if you would just write for or against or not sure, and if you would vote for it or vote against it give me some of the reasons.

P: You mean based on just the cost?

M: Yeah, just on the cost. But I mean is $75, if you've got concerns like you do about creating more problems than we're going to solve, then you say I'd vote for it, no, because I'm concerned about the environmental costs.

P: I'll put that on there but $75, if that's all it costs the family to have, and everything was perfect, and the environment was safer from it, then $75, who cares? You know, so you vote for it for that. If we're voting for it on the merits of what they're trying to say this is the different, then it gets a little more problematic.

M: Well if you want to think about it in economic terms you could say for $75, yes but down there in B2 you say I have concerns about the effectiveness of the program as its proposed or concerns about going in and messing with the old oil rigs or whatever kinds of concerns you have. Again, we're not trying to push or promote this one way or the other we're just trying to get your all input. Where do you see problems with this? What are your concerns?

P: Only if you can guarantee the cost of a gallon of gas in 2013 will be $75.

LAUGHTER

M: You can put that down. Well good luck with that.

P: The great question is what the cost of the gasoline is. And I can tell you the cost of the gasoline has nothing to do with what you pay for it. Cause there's a great spread there.

M: And then once you've done that you flip the page and there's 3 more questions on that next page. If you voted for it in question B1, the first question there, would you vote for or against the program and its $75 cost, if the program would only prevent harm to the eco system in the Gulf of Mexico and the environment and it wouldn't affect human health. Some of the things we run into, people sometimes are thinking about the human costs associated with the oil spill because of the possibility of consuming contaminated fish and that sort of thing. So we're trying to isolate and just say if were just impacting eco system health would you vote for or against it? And if you were against it in No. B1, would it change your vote basically. And if you're not sure if you could give us some ideas of why you're not sure. Maybe you're not sure because you weren't sure about the, you were concerned about the impacts of messing with the old oil rigs that seem to be operating fine. And when you're done, Mike could you go ahead and collect 6 and hand out 7 at the same time? That's great.

P: Why are you not sure?

M: Yeah, if you're not sure what are your concerns that make you vote, if you're not sure?

P: Isn't that a grammatical problem?

P: Why are you not sure?

LAUGHTER

M: Ok, it's a little awkward there. We're trying to get, if you voted for it on the first one, would your vote change if it was just an eco-system, if you were against it why'd you vote against the program and if you weren't sure why were you unsure? Unsure is what we should have there. Thank you. We'll see if we can get the grammatical errors worked out of these things too.

P: I do all the proof-reading for my husband's company.

M: Ok.

P: He's an engineer. He can't write worth a darn.

P: Engineers can't write or spell. They're not supposed to.

M: We try to cure that at the University of Florida. We want everybody coming out of there to be a good writer.

P: My husband's published, but he didn't publish anything he wrote without me checking it first.

LAUGHTER

P: Or it would have been very bad.

M: One of our most prolific professors in our department is the same way. His wife is a magnificent proofreader and my guess is his publication rate would drop rather significantly if she wasn't doing his proofing. But as a team they work well.

P: Yeah, that's quite common.

P: My father was the same way. His secretary rewrote everything he wrote.

M: Ok, now we have another handout. I'm sorry; I didn't mean to rush you.

P: Just one other comment again, you guys are relying on these fixed numbers for all your activities. At a minimum you should have added like you said, at least 6,000 birds died. Because I'm sure that, from the scientific evaluation here we know a minimum of that many died but there may have been a whole lot more and you keep on restating these facts and then that becomes the fact. And it's not the fact, because you're just recording what we found. And we didn't find it all. I guarantee you.

M: Yeah. Ok, handout no. 7 is pretty straightforward. At the time that you voted on, when you were thinking about voting on this program did you think that the harm from future oil spills would be about the same, a lot more, a lot less. So you can kind of just go through these questions.

P: You mean we're reviewing the thing. At the time…

M: Just now when you were talking about how you voted were you thinking about the harm from future oil spills in the Gulf being about the same as Deep Water Horizon, a lot more than, or a lot less. C2 how serious did you consider the amount of harm to be?

P: They already told you that it was $75. We already knew that it was going to cost $75

M: The reason we say that is because some people are skeptical that the cost will be limited to $75. So it's sort of your perception of whether you think that's a realistic estimate or not. ???

P: That's the first year and next year they'll think of something else to tack on there.

P: Well if it's based on fuel prices going up, it are going to depend on how much fuel you use too.

P: Right. But you can't hardly answer based on the information you gave us.

M: True. There are upfront costs and there are maintenance costs, so there upfront costs are going to be very significant. After that the maintenance costs will be notable, but the real serious outlay will be the initial costs. And we're throwing a $75 number out there as

an indication of what it would take to cover the initial outlay costs. The oil companies are going to have the maintenance costs as well. So that would be potentially an additional cost down the road.

P: And again that's a national program?

P: So you're asking every household in the country to pay $75?

M: National yeah. Here in just a minute we're going to look at different ways of taxing.

P: It will vary if they do it by fuel costs. It's going to vary. People who heat with fuel oil it's going to be higher. People who live far, use a lot of fuel, it's going to be higher.

M: Yeah, we're going to talk in just a minute about some different ways of capturing that. Ok, Mike, if you want to collect that handout 7 and we're going to handout 9. Handout 8 was sort of an optional that we had in there, but we're past the hour, past that 7:00 hour and we'll close it out here. So this is getting at different ways to pay. These 7, the first one there, is any of the information that you thought about in answering the questions in handout 7, did it change your perspective on whether or not you would vote for against the program. Because sometimes you introduce information and people vote and you introduce additional information and it may change your perspective. I'm just trying to capture whether or not it would have changed your earlier answer. It may not, but it might have. And for the second question on that page if you're not sure what we're getting at look to the 3rd question and maybe come back to the second question.

P: You know there's no talking here of other, the inference here is we end up paying in the end. But from a reality it's easier to vote for, or whatever you want to say, if it's simply an increase in the cost of their lease payments if you have a well, you know, in the Gulf of Mexico, to cover for the environmental damage that having that well in the Gulf of Mexico costs. Now in the end it filters down to us and maybe it will cost us $75. But if your proposal says, increase the lease fees in the Gulf of Mexico to pay for this program, that's seems just. Now you say here that 20% of our wells are coming out of that. So it's only going to affect 20% of the oils. Now the people in the Northeast, maybe their oil supply all comes from local wells up there. It may not even impact them. It just, I think, passing everything to the final consumer, saying, oh it's guaranteed to cost you $75, is muddying the whole picture.

M: Well the problem we ran into was, when we first started these focus groups and we talked about the oil companies paying, the response we got from people was, well if the oil companies are going to pay, I'm going to end up paying, because they are just going to increase my gas price. So we have tried to sort of respond to those, but maybe what we need to do is go back to the way we originally pitched it. I'm not sure.

P: Try to merge them both together.

M: Well…

P: Again, it seems just to charge the person for the lease for the oil in the Gulf, the costs to keep it safe. There's justice there. Now if you want to say their lease will go up and it may impact how much you pay by $75 would you still vote for it that's one thing. But at least you don't feel like hey, we're paying $75 and they're not doing anything. It should be brought to the people that have the oil leases in the Gulf.

M: Well the way the program is set up now, the costs would go to the oil companies. The question is, the $75 in the increased fuel costs is just a figure, an estimate that we're trying to come up with, to project…

P: Yeah, it's a guestimate.

M: Yeah.

P: But your entire questions end up making you feel like, well even like these last 2, we're paying it directly. You know you don't always pay everything directly. There are all sorts of costs that big business, or all businesses internalize, that they don't necessarily transfer dollar for dollar to the final consumer. There are volume issues. There are different sources. Maybe they'll decide not to drill those leases as much and they will start drilling somewhere else. Well the cost of drilling somewhere else is now cheaper so your oil doesn't go up by $75. It all becomes a business decision. But how you reported it here it's just $75. We all have to give them $75 and then this problem goes away. You've got to still hang them somewhere.

M: Well $75 is certainly an estimate. What we're trying, as economists, we try to get at the willingness to pay, and so we selected a $75 number to just try and see if people would be willing to pay that or now.

P: There are economists at the oil company right now sitting down doing the same thing, and that's just affecting their profits. They're seeing how far they can push the fuel price because they know that they're right at the verge now, you push too much more and people quit buying gas. So they push right up to that limit.

M: Well that's why, down here in the last section here we talk about the tax on gasoline at the pump, because you have some control over that by virtue of the amount of gas you consume. If you drive less you're going to pay less, as opposed to a federal income tax where they say you're going to pay $75…

P: $75 for everybody.

M: Yeah, that would be across the board. So we're trying to do lots of things with this survey and it gets a little messy, there's no question about it.

P: I come from the standpoint that the oil companies are responsible. It's the price of doing business.

P: Yeah.

P: However, like every other company, like airlines for example, they're going to stick it to you.

LAUGHTER

P: You're going to lose in the end. But jumping out of the gate, it's their responsibility.

M: Yeah.

P: And it's a world market. It's the cost of oil in the Middle East. If the oil is too expensive to come out of the Gulf it will come from somewhere else.

M: Did you have something you wanted to say?

P: Yeah, I think that people prefer to think that the oil companies are going to pay instead of the people having to pay for all those mistakes that they are doing.

M: That's the way actually we had approached it at the beginning and the criticism we got was if you charge the oil company they're just going to pay it back to us so I'm not sure how we're going to end up with the feedback we get.

EVERYBODY TALKING AT ONCE

P: Either way we're going to get stuck with it.

M: Yeah.

P: That's just economics.

M: But then the question is if you're going to pay, how much are you willing to pay to protect the environment of the Gulf of Mexico?

P: We're not going to have a choice.

M: If the policies are not implemented then there won't be any increase cost to protect the environment. So do you want to protect the Gulf environment, yes. Ok, if you want to protect it how much are you willing to pay to protect it?

P: BP hasn't used that oil spill as one of the reasons for upping their prices.

M: The BP station near my house is the highest cost one in Gainesville, but I think it's the location more than anything else. But you know what I think happens is the oil companies all pushed their prices up a little bit in anticipation of increased regulation.

P: Right.

P: IF you look at the dollars, this is still cents on the dollar for them. All the, if you run your calculations on this, except for doing all the retro on the old wells, the old wells that would be costly, but all this other stuff is just pennies and it's not going to affect your fuel price much. They may say it does and they may run out and raise the price to ??? stick. You know it's kind of like the airlines, they raised the oil price or the gas price and they hope nobody quits buying the gas.

P: We still have very cheap gas when you travel. It's ridiculously cheap.

EVERYBODY TALKING AT ONCE

P: Only because we don't tax it like the Europeans do. They double the price of the fuel because they put a huge tax on that which they use to pay for the mass transit because they don't want people driving cars.

P: That's right.

P: And they use their tax program.

P: It's ridiculous how much you pay for gas in Europe.

M: You know the question; one of the questions in my mind is BP looking at the cost that this oil spill is going to impose on them? Somebody did some calculations I guess, that it didn't pay to go back and really repair their ??? for the ???. If you wonder whether the economics of that are going to change the dynamics. Maybe some of the oil companies are going to say, you know I think I'm going to maintain that blowout preventer a little better than I used to…

P: Well sure. Whoever made that decision made a mistake.

P: They're probably going to back up anyway.

M: Yeah I think somebody's hide was torched for that.

P: Somebody's lost their job and they'll probably get ??? anyway. I would if I was the manager.

M: We've got one more handout, well a couple of more, I'm sorry, and this is good. This is exactly the kind of input that we need. We talk all of this and factor all of it in and it really helps us come up with a better instrument. So no. 10 is pretty straightforward. How you pay, which is similar to one of the questions we had on no. 9. And then 9 and 10 get at some of the questions you were talking about Barry with how much confidence you have in the federal government. How much confidence do we have in the Coast Guard? Maybe we

have more in the Coast Guard than we have in our federal government. So if you want to hand out no. 10 there Mike. Sorry I jumped ahead.

P: Take your shoes off and use your toes.

P: Wouldn't it be more responsible to find ways that use alternative fuel like solar power to get us away from those people?

M: A completely separate issue. If you do that then maybe the environmental impacts of Gulf oil drilling are less notably.

P: Right. Yeah, like gold greed. There are people that pull each other's teeth out for gold. If it wasn't worth that much then nobody would do it.

M: A month ago we might have been thinking more in terms of nuclear power than we probably are today.

P: That's never a good idea.

M: After Japan huh.

P: They just boil water in that. That's what they do in those nuclear reactors. They just boil water. ??? its' not like they do anything great with them.

P: The ?? is a good example of how you do alternate energy. They have a utility surcharge where they actually pay people with solar panels a few cents more than what they sell the power to your house. And then businesses and individual houses they put a bunch of solar panels on and really, really pushes the envelope. Gainesville's not been very aggressive on that. Almost no other utility, Gainesville won't buy utilities. Almost no utility does that. Except in Germany their whole country does it. That's why they, even though they're cloudy and have a miserable climate they have a lot more solar panels per person than we do.

P: The state of New York, anybody that's got a creek puts a water wheel on it. And they sell back. When we lived up there a lot of people had water wheels.

M: Actually the sugar cane industry down, once they get their mills cranked up, milling sugar cane, they actually generate so much power from burning the gas, the material that's left over when they're done, not only can they power their own plant but they sell power back into…

P: and sugar boils at a really high temperature.

M: Now they are a net energy generator. Once the mills, you've got to start them up, but once you get them started they run the season and they're selling power back into the grid down there. So there are lots of options, but the reality is we're going to be drilling in the

Gulf of Mexico for a little while anyway so we're trying to figure out if there's support for a program like this.

P: When I was part of the Navy, the Navy uses most of the oil over the world, ours does.

EVERYBODY TALKING AT ONCE

P: They could run on nukes now.

M: Yeah, most of the naval ships…

P: ??? products packaging.

P: Yeah, way over packaged.

P: Everything.

M: Ok. Well any other questions. I don't want to keep you all too much later, but I'll stay here for as long as you want.

P: I have a question. The first 2 questions dealt with education. Are there 2 different surveys?

M: What we were trying to do is lay out some issues and see where people's interest lie, no. 1. And then because there was an issue about environment down there then we kind of hone in on the oil. So this is strictly based on the oil spill and some of the related issues. Not education at all. But we wanted to kind of see where people's interests were.

P: ???

M: Exactly, what we're trying to get at is how; most everybody says that the environment in the Gulf of Mexico is important. Well if it's important, how much might people be willing to pay to protect the environmental amenities we have in the Gulf of Mexico? And we have, it's pretty complicated, because we have to kind of keep it simple for commercial fishing, and some of those other activities, the impact on the tourist hotels and those sorts of things. Even though there's a relationship there we try to get at the willingness to pay for the environmental amenities that we have. So this has been hugely helpful. It's exactly the kind of input that we need to help us hone in and make sure we're getting at the issues that we're trying to get at here.

P: I just want to jump in. You have a D10, I think you should have a D11, where generally speaking how much confidence do you have in the political system?

LAUGHTER

P: Because I think you'll get a totally different response.

M: You know it really is interesting, the USDA, the FDA, I know some hugely dedicated people in the USDA and I'm sure you do too. But the question is how insular are they? And then of course that's totally separate from the political system. Policy making, legislature, the operation and all sorts of things. So that might be a question that we'll add.

P: Well the politicians have stepped in and the Deep Water Horizon is an exact example of it, and the politician stepped in and they pulled back the regulation. And the monitoring and the regulation to the point where the agency that was supposed to be inspecting the Deep Water Horizon was out partying with them all the time and not inspecting them. That's because they were supposed to be friendly to business. Well it's hard to manage business and monitor business if you're partying with them.

M: Yeah.

P: And you know, that's when political actually interfering with the operation of the company. ???

P: On the other hand it's hard to get information out of business if you're not with them.

P: Well you bring up a really good point. Wouldn't it be more appropriate for the FDA to have a system where they rotate their people, where they work for the government for awhile and then put them into business or they allow them to work for business and come back? Or they hire from business.

P: And they don't do that because they don't pay in the same wage scales that people in industry do. They're totally different.

P: But that's a great point.

P: We hired somebody out of FDA and it was a nightmare. It was a total nightmare. The guy was so behind on stuff.

M: I know that USDA operates with academic institutions is that they're trying to maintain their level of expertise. I like to believe as an employee of a university I'd like to think that we're sort of out there on a cutting edge of what's going on. And there is some close linkage. We do contract work with the UDSA trying to help make sure that they up to speed on the latest analytical techniques in economics, or our Food Science and Human Nutrition Department is doing some wonderful work there in terms of nutrition issues and things like that. So there is some linkage to try and help make sure that the federal agency personnel are up to speed. But it's not always easy.

P: It's not working?

P: When I was working it wasn't getting to the people in the front lines at all.

M: Well like I say I'll sit around all night and chat but as far as I'm concerned we are wrapped up. I thank you all very much. This has been hugely helpful.

P: Mike was going to tell us how we got picked.

M: Oh yeah. That's right.

M: We purchase a random list and call people and ask them if they are interested and then basically we get a list of demographic characteristics and we just try to put together a group of people that are interested by age, gender, race. The idea is that hopefully you have some different opinions and we're getting some different opinions. So we just try to build in some diversity is all. So it's just a random list and you get called by random. That's all. So it's luck of the draw.

M: Or unluck of the draw.

LAUGHTER

M: It's been interesting and it's very, very helpful for us. And again you want to hand Mike your last little handout there. The little cards, the little half sheet cards you're welcome to take them with you. See Mike before you leave.

M: I'll give you a receipt and please if you could sign and then I get those back.

M: Thank you. It's very helpful for us. And we appreciate it a lot. I hope it's been reasonable interesting. Get you thinking about things.

Tape off.

Cocoa Focus Group (March 31, 2011)

M: You're input is really important in helping us formulate the survey instrument that we're going to be using. That's why we're doing these all over the state. I'm going to be using a script tonight. The reason for that is as we do these we try to be as consistent as we can between the different sessions. So if it seems like I'm reading a little bit I apologize but it's kind of what I have to do. Tonight we're going to have a series of handouts that we're going to ask you to figure, or fill out. Please don't put your name on them. We want responses to be anonymous. We are recording the session, but the only reason we do that is people are listening in and they are taking notes frantically and if they miss something they can go back and they can listen to the transcript, but we're not keeping track of your names. Your names are not going to reported. It's going to be completely anonymous. Throughout the evening, as we go through this, we'll have opportunity to discuss some of them, but if we don't get to a question or issue, write it on the handouts that you're going to be giving back to us because we want to try to get as much feedback as we can. So with that, Mike,

please distribute handout 1. Asking you to just look at the first page of this handout for the moment, and we like to just get you to consider some of the issues facing Florida and the United States, some of which you're going to think are important, others that you're going to think are unimportant, and that's ok. That's the kind of feedback that we're looking to. On this first page is a list of issues facing us here in the State of Florida, and we'd like you to rate the importance of the individual issues. For each issue we want to know if it's real important, sort of important, or somewhat important, or not important at all, or maybe you don't really know. That's ok too. But we want to try and get your input and circle the number that corresponds to how important that particular issue is to you. And again, please just do the first page1 now and we'll discuss that a little bit and we'll go on to the 2nd page.

P: What does H mean?

M: I'm sorry?

P: What does eliminating growth management?

M: There are approval processes that have to be gone through for zoning and permitting …

P: Like if they want to build a new Wal-Mart.

M: Just look at the first page for now. We'll go to the 2nd page in just a minute.

P: I'm not listening.

LAUGHTER

M: We'll get to the 2nd page.

P: Water quality. That's just drinking water you're talking about?

M: Could be…drinking water, rivers, the estuaries, the oceans.

P: Beaches.

M: Beaches. Lakes.

P: Want to change my mind on several.

M: Sure you can put an X through it and circle the one that you want. Feel free to scribble on these as much as you want. Any questions you have or if you want to write down an assumption, whatever makes you feel as relevant, or issues that you think we need to try to be a little clearer. And I guess as you all are wrapping up I would like to see if there are any other issues that you might add to that that would be important to you. If there are you can

just write them down or we can talk about them a little bit. Certainly not an exhausted list. We just tried to pick some different…

P: Go on to the 2nd page?

M: No just do the first for now. We'll do the same thing on the 2nd page here in just a little bit. You all might have something that's real important to you that we don't have on the list. We're just trying to see if anybody has any other suggestions we can add. And then when you're done with that if you'd just go to the 2nd page. The first page was just basically issues at the state level, the 2nd page are federal issues. The federal government spends tax money on many programs for many different purposes, and the same satiation here. For each one I'd like you to tell me, or tell us how important each one is to you, that money continue to be spent on that particular program. And again if there's any other issues that you think should be included on that list you can just write that at the bottom or in the margins or wherever you can find space to fit it in. Ok. Well these are just a few of the programs that the federal government currently spends tax money on. And proposals are sometimes made for new programs but the federal government generally doesn't want to start new programs unless there's tax payers support and the taxpayers are willing to pay the initial cost for the new programs. One way for the federal government to find out about people's opinions on it is to offer opportunities like this, for you to provide feedback on a program so you can, information on a program, so you can provide your feedback on whether you think it's a good idea or not. Your views are very useful to decision makers in deciding what, if anything, to do about a particular problem or situation. In interviews and surveys like this some people think that the programs that they're asked about are needed and some don't think they're needed, and that's great. That's exactly the kind of feedback that we want. Um, so I guess the only other thing on this handout, the bottom there, it would just be interesting for us to know if you've ever been interviewed before about whether the federal government should start a new program. And when you're done with that Mike will collect up the first handout. In the past people have been asked about the various types of programs. In this session here this evening I'm going to ask you about a program that would decrease the damages due to oil spills. The program I'm going to describe is designed to limit the impact of large oil spills particularly in the Gulf of Mexico. We're going to talk first, or address first, asking you some questions about oil spills, then we're going to provide you with information on a program to be evaluated today, and then finally we'll ask whether or not you think the particular program is worthwhile, why you feel the way you do. So that's kind of the process that we're going to go through. Mike's got another handout here that we're going to ask you to fill out. What we're basically wanting you to do on this handout is just list any major oil spills that you've heard about, you may remember having heard something about, anywhere in the world, not just here in the U.S, not just in the Gulf, but anywhere at all. You know are there any oil spills that you remember as having damaged the nature and the natural systems the most, or just describe any that come to mind, briefly, a name or location where it was, if you remember the location. Just any that you might remember. I like to be able to say you're not going to be graded on this.

LAUGHTER

M: I don't say that very often to the students.

P: Yeah, thank you.

P: Didn't they have an oil spill way up north years ago?

P: Alaska.

P: Alaska

M: We'll talk about a series of them. You don't have to know the names or anything. When you're done, Mike will collect that one from you and we'll talk about it a little bit. Ok. A show of hands, who mentioned the oil spill that occurred in the Gulf of Mexico last April. Most everybody. Mike would you hand out the latest one. Mike's going to have another handout for you on that then. Handout number 3.

P: We can all remember that long.

P: Yeah.

M: What we'd like to have you do on this handout is, think about the environmental impacts of that particular oil spill. What was it about the natural environment of the Gulf of Mexico that you think was most seriously damaged, if at all, by the oil spill? There's damages to tourism, and lots of other areas, but we want to focus primarily on environmental damage. So if you could just write a little something out there about what you think the damage to the natural environment of the Gulf was most affected, if anything, by the oil spill.

P: Just one answer on that?

M: A couple of good ones. You can put as many down as you want. And when you're done Mike will collect them. No rush though. And we're going to ask Mike, we're keeping him busy tonight, we're going to ask him to distribute another handout and a map. These first 2 handouts we're not getting much discussion going. But we'll have some discussion later on. Just trying to get your feedback. He's going to give you a map and another handout for you to fill out.

P: That's a geography test.

LAUGHTER

M: Nope. Nope. No test. But you don't put your name on it so it really doesn't matter.

P: That's right.

LAUGHTER

P: We're all going to pass.

M: With flying colors. So the map is basically just a map of the Gulf of Mexico. And there are some questions on the handout and I'd like you to go through and answer those questions for us if you would. Check the box kind of questions and if you have questions or issues you can jot them on that as well.

P: We did a lot before.

M: What?

P: We did a lot previously.

M: Well jot that on there. Sure.

P: But not, but it say now.

M: Well you can put no, but jot next to it we used to do activities on the Gulf. And you can just, any kind of editorial comments you want to add.

P: Oh. Ok.

M: There's specific questions we wanted to ask, but extra comments help us as well. When you're done Mike will collect that one.

P: Keep the map?

M: You may keep the map, yes. Unless you want to write something on the map and hand it back in. It's unusual that ??? all the way here on the Atlantic coast, but we're doing it around the state… And when Mike gets all of those we're going to ask him to hand you out another map, kind of an interesting map. Map 2 there.

P: You didn't tell us to bring magnifying glasses.

LAUGHTER

M: Hopefully there's not too much here that you need a magnifying glass for, or I couldn't read it without my reading glasses. This map shows the drilling regions in the northern Gulf of Mexico and each of the yellow dots on this map represents an active oil rig platform.

P: You're kidding.

P: Wow!

M: Isn't that amazing? Those aren't necessarily the ones, I mean those are just the active rigs.

P: I didn't know there was that many.

M: Now what we want to do with that, as you're looking at that, we want to talk about the oil spill that happened last April. It began on April 20, 2010, when the Deep Water Horizon oil rig was destroyed in a fire while drilling an oil well about 50 miles southeast of the Mississippi River delta. The Gulf of Mexico was about 5,000 ft. or about 1 mile deep in the area where they were drilling, at the drilling site. The fire and the sinking of the Deep Water Horizon oil rig caused oil to spill out of the riser, which is the pipe that connects the well on the ocean floor to the drilling rig on the surface. The spill lasted until September 19, 2010 when it was permanently capped. In all about 205,000,000 gallons of oil spilled into the Gulf of Mexico, which made the Deep Water Horizon oil spill the largest in US history. For comparison it was about 18 times larger than the Exxon Valdez spill in Alaska in the early 1990s. It was the 1970s. I just noticed that typo. Mike's got another map for you to take a look at here. The map that Mike's handing out now shows the location of the Deep Water Horizon oil spill and how it affected the Gulf of Mexico. The blue X on the map is the site where the Deep Water Horizon oil spill occurred. The orange shading over the Gulf shows where surface oil was detected after the spill. The darker the shading the longer the oil spill was present at the location. For example, the lightest shading shows where surface oil was present for only 1-3 weeks, while the darkest shading shows areas where surface oil was present for 16-18 weeks. The areas of the coastline on that map that are black represent areas where oil from the Deep Water Horizon made landfall. About 1050 miles of Gulf of Mexico was impacted by the spill. This coastal area consisted of estuaries, coastal wetlands and beaches. Oil areas can kill vegetation and accelerate erosion. In addition to the surface oil shown on the map large pockets of sub-surface oil have been detected and shown to be the result of the Deep Water Horizon oil spill. Due to the lack of a Gulf of Mexico monitoring system the large size of the area affected both on the surface and the sub-surface water column, and the changing wind pattern and ocean currents, there's really no way to know with a reasonable degree of certainty how much oil remains. The use of dispersants and the natural ability of the oil particles to break down, also complicate the issue of measuring the remaining oil. The breakdown of the oil into microscopic particles and the settling of some oil onto the sea floor also have the ability to impact the eco-system and the food chain in the Gulf of Mexico. Mike's got another card that I'm going to ask him to hand out now. This card is just a very brief summary of how the 3 main types of animals birds, turtles and marine mammals were affected by the Deep Water Horizon oil spill, and it shows 3 particular species of concern. As I read and share the information with you and you look at the card, please feel free to make notes on any of the handouts about anything that was unclear or confusing that we need to elaborate on a little bit more. The statistics shown there are from the Gulf of Mexico Restoration Program that was created after the oil spill, the Deep Water Horizon oil spill. It's a federal program that sought to recover all noticeable distressed or dead animals following the spill. And the numbers reported were for animals recovered from the time of the oil spill through November 2, 2010. Note that all of the dead animals that were collected were visibly, NOT all the dead animals were visibly oiled and it's possible that their deaths were due to other causes. Also not all visibly oiled

animals died. Some of the visibly oiled animals were collected alive, cleaned and released back into the wild. The actual number of animals affected by the oil spill is however, probably higher than what is reported on the card here because it's very likely that not all of the animals injured or killed due to the oil spill were recovered. The area of this was too vast, just such a vast area that probably wouldn't collect all of them. With the Exxon Valdez spill in Alaska that we referenced earlier, 37,000 dead birds were recovered but scientists later estimated the death toll between 100,000 and 300,000 or between 3-8 times higher than what they were actually able to document by collecting the dead birds. In the Gulf of Mexico there are 28 different species of marine mammals and all are protected under the Marine Mammal Protection Act. And this includes 6 species of whales that are listed under the Endangered Species Act. Only one of these types of whales, the sperm whale, maintains a resident population in the Gulf year-round. The other 5 migrate through the Gulf region periodically, seasonally. Two species of fish are threatened or endangered in the Gulf region, the Gulf Sturgeon and the small toothed sawfish. Another 13 species of fish and sharks are considered a species of concern. Adult animals might be able to avoid the oil but eggs, larvae and often times the young animals are not able to avoid it and they can be destroyed by the oil spills. Although the long-term effects of the Deep Water Horizon oil spill are not certain, past experience with oil spills around the world, such as with birds following the Exxon Valdez, provide some insights on how oil effects other species. And one interesting example, some fish species did not show the ill effects from the Exxon Valdez until many years later, 4-6 years later. So it's not as though you can measure the impact immediately, the full impact immediately. Was any of this information confusing or unclear? We're trying to make this as clear as we can.

P: No.

P: I thought it was very clear.

P: Yeah.

P: My only comment is on the map, map 3, that I think you should say that the coverage refers to total surface coverage.

M: Ok.

P: Just to make that clear.

M: Ok. Got you.

P: I did make that comment on it.

M: Ok. Good. We'll hand that to Mike. Was the information that we provided in the handouts easy to understand when it was combined with the information that I provided here?

P: Yeah.

M: Was there any other background information on the Deep Water Horizon oil spill that you'd like to know? We're trying to make this just as clear as we possibly can.

P: One thing that people don't know about is what actually caused it

P: Well I think there was a lot of negligence to determine that.

M: The hearing just this last week, they talked about the proper maintenance and design, and the failure of all of the procedures. There were plenty of mistakes to go around.

P: I thought the British were very cavalier.

P: Very lax.

P: And warned. They didn't want to spend the money to prevent it.

M: Yep. I would hope that between regulations and other oil companies seeing the results, the impacts on BP, they maybe these different approaches to maintaining their oil drilling rig, but that remains to be seen.

P: Is there any part of the survey that deals with the human impact or the economic impact?

M: In the research study yes, but not, we're just looking at the environmental impact. Yeah, there's other focus group activities and other surveys that are going to talk about human impacts and impacts on other dimensions, but for what we're doing right now, we're just trying to focus on environmental impacts.

P: Are there any statistics on the fish?

M: The fish were even more difficult than…

P: Yeah.

M: They're so small. I have not seen any statistics on the fish yet. There is a tremendous amount of work being done right now. Research institutes all around Florida and all around the Gulf coast and like I said we've even got some economists who specialize in evaluating and valuating environmental amenities involved, so there's an awful lot of work being done right now. I'm sure down the road we'll start to see some information…

P: The whole food chain impact too.

P: Right.

M: Yep. Yep. Ok, well if Americans think it's worthwhile a new program could be implemented to lessen the impact of another large oil spill in the Gulf of Mexico similar to the Deep Water Horizon oil spill. A group of university scientists has proposed a program, and I'm going to explain the program to you and ask for your feedback. The program would do 2 things. First it would monitor for oil both near the surface and below the surface to help detect oil spills, to help target clean- up efforts and to help measure the amount and the movement of spilled oil. And 2nd if an oil spill does occur this program would prevent the oil from spreading and causing additional harm to the environment and the overall eco system. So Mike's got a couple of other handouts to give you here.

P: Do we suspect that there are smaller oil spills that are less traumatic that we never hear about?

P: That are not reported.

M: In some of the, one of the earlier focus groups we talked about that a little bit, and it seemed to distract folks a little bit. There are, there have been upwards of 100 oil spills in the Gulf region, but many of them were tiny in comparison.

P: And manageable?

M: They were much more manageable.

P: A lot of these are not owned by the US?

M: None of them are owned by the US. They are all within 200 miles of the US coast, which is what is called the Economic Exclusion Zone. The US government can control what goes on in that region. And while the US government doesn't own any of those wells, all of those wells pay lease payments to the US government. So the US government isn't selling that property to anybody, don't think it's considered ours to sell.

P: Right.

P: But they lease the rights.

M: Exactly. They're leasing the resource rights, much the same as mining or something else. In that case it would be federal property. So it's a unique situation when you're in the Gulf. If there's a piece of land that the federal government owns and they want to lease the mineral extraction rights they can. In the ocean like this, governments, and not just the US government, all governments have a right to control what goes on within 200 miles of their coastline. But they can't issue title and legally the situation is a little different. All right, so here's how the program would work. Oil detection equipment would be placed every 10 miles around the oil drilling region in the northern Gulf. They would be what are called moored profilers and they are shown on card C you just got. Card B describes the program briefly. I'm going to go into a little more detail. Card C shows pictures on the left of the moored profiler. In addition during routine monitoring the rosette sampler, the version on

the right-hand side of handout C, or card C would be deployed periodically, at each profiling station, at least once a month, to take samples at different depths. So you would have 2 different ways of monitoring not just surface but at the various depths. The samples would be immediately analyzed onboard ships especially designed for the US Coast Guard and run by the Coast Guard, which I will describe in a moment here. The equipment would also be able to detect the presence of oil below the surface of the water and would help target clean-up efforts. In addition the oil detection equipment would provide information both before and after a spill allowing for an accurate measurement of the oil spill. Now the 2nd component of it is there would be five US Coast Guard ships outfitted with detection equipment and staffed with personnel trained to analyze and interpret the water samples from the two different sampling mechanisms we've look at. The ships would be permanently stationed in the oil drilling region in the northern Gulf and would be able to reach any spill within a day. To respond to the spill the ships would also carry booms and skimming equipment to try and contain surface spills and they would also have submersibles and robotic equipment like the equipment used to stop the Deep Water Horizon spill. So these ships would have a variety, in addition to their role in monitoring the water samples, they would also have response equipment that would allow on site responses very quickly. Much more quickly than we had in the case of the Deep Water Horizon. Now Mike's got a handout here I'd like him to pass around. Basically what we're asking in this handout is, is there any more information that you would like as to how this program would work. And if so, if you could kind of write some notes or bullets or statements or sentences on that handout rather than trying to do this verbally. We understand that we have not covered the effectiveness of the program, the cost of the program or how it would be paid for. We will get to those shortly. Oh yeah, absolutely. I'm just having you answer questions about how the program that we've described here, how you think it would work. If there's any other information you need to evaluate if you think it would work. Yeah, we'll definitely get those other things.

P: Would work?

M: Yep, do you think it would work. Both if you want to address both. Two very different things, exactly.

P: Do these moored profilers, do they have to go by to check them to get information?

M: They will. They will have to go by and check the water samples. There's some basic information that can be transmitted by satellite, but in terms of the actual water samples, you'll have five ships moving around that area with the yellow dots that you saw on the earlier map, and they will have to go by and pick up the water samples. And they will be able to do the analysis right as they collect the water samples.

P: On each ship.

M: And when they say moored profiler, it's moored, it's secured to the bottom. And the profiler moves up and down different heights so it's sampling, taking water samples at all different depths, at all different depths of the water, so we would find the sub-surface spills

as well as the surface spills with units like this. And the rosette sampler moves around. It's one that would be deployed by the ship, dropped down, and be picked back up. So it could be done in between the 10 spaces of the moored profilers or at any point.

P: So the moored profilers, do those get moved around? Moored just stay in one place. The rosette's the one that they move around, so for example, if they detected a problem near one of the moored profilers they could deploy some of the rosettes to try see where the problem is and identify where there was a sub-surface plume or something. When you're done, Mike will collect those from you. Any discussion? Any comments?

P: I just can't believe they've got that many drills out there. It's a wonder we don't have more spills.

M: Isn't that amazing? When I first saw that map I was quite amazed too.

P: And we're paying these high prices for a reason?

M: Um, statistically the Gulf, we only get about 19% of the oil that we consume in the US here from the Gulf of Mexico. So while there's all those rigs out there, it's not a very large proportion of our total oil supply.

P: It also doesn't all go for cars.

P: Yeah.

M: Exactly. The oil from that region goes to refineries basically in Louisiana and Texas. They make plastic out of some of it. Some of it goes to fuel, diesel.

P: We've all got to switch to cars that get 40-50 miles to the gallon.

M: That would make a difference.

P: Electric.

M: Electric. There are other options out there. Ok. Good. Now, one of the questions that I'm sure you have, the establishment of this program would be expensive. And the initial cost of the new monitoring equipment and the 5 ships and all of their clean up equipment would be shared by all tax payers in the United States. After that it's anticipated that the oil companies would be required by law to pay higher lease fees to fund the ongoing operations of this system for 10 years. The costs to you would be a one-time federal income tax payment transferred into a Coast Guard oil program trust fund. And after 10 years the program would be evaluated to determine if it should be continued. So Mike, based on that information, Mike has another handout here??? Now on that card that you've just gotten there's 2 bullet points summarizing some of the things that I've talked about, but it also notes that the Oil Pollution Act of 1990 requires companies that are found negligent in a spill to pay for all clean up and restoration activities. And that would not change under this

program. Responsible parties would still pay for cleanup. This program would provide a type of insurance policy by reducing the chance of major damage from another major oil spill for at least 10 years. This program would not prevent damage from a spill anywhere else in the United States or in international waters because the required equipment and response ships would only be implemented in the northern Gulf area. So it's not like the resources are going to be taken anywhere else. At this time we're interviewing people like you to ask how you might vote on this program if it were put on a national election ballot. There are reasons why you might vote for setting up the program and reasons why you might vote against it. And Mike's going to give another card out right now that provides a few reasons both pro and con. So let's take a look at that for a moment.

P: I think that ??? on your summary of the Oil Pollution Act. The critical point is that the companies have to be found negligent. And it probably would be more clear, and I wrote that down here, if you wrote that just to clarify.

M: Ok. Can I have that?

P: Sure.

M: Let me hand that to Mike here. That's very helpful.

P: Just to make it clear.

M: Yep. That's exactly the sort of input we need.

P: Because if it's an Act of God or something they're not required.

M: Ok, some of the reasons for, we've just listed a few here, again there's many more. The reasons you might vote for something like this, it would prevent the deaths of numerous wildlife species including birds, sea turtles and marine mammals. Protect the Gulf of Mexico habitat including beaches, estuaries and coastal wetlands. Protect the Gulf of Mexico water quality?? you were talking about water quality, or somebody who, are we talking drinking water? All resources. And there's other reasons as well that you might vote for it. The reasons against many species being protected are not in danger of going extinct. All these are all legitimate arguments both ways. In your household you might prefer to spend this money on other activities and not so much for this particular activity or you might think there won't be another large oil spill like the Deep Water Horizon. So these are just some of the reasons for and against. Are there other reasons for and against that you can think of? If you want to scribble them down on the card E or we can talk about them a little bit and then Mike will collect card E.

P: I think they should get the money from the people with the oil leases now.

M: Ok, put that down.

P: Right.

P: I agree.

M: Perfect.

P: I also think that if you're not a state that isn't on the Gulf you're constituents are not going to want to pay for this.

P: Exactly.

P: What is the cost?

P: Well ??? their shrimp either.

P: And you know what it doesn't even really matter what the cost is. I don't care if the cost is $20 or $10, $5.

M: We'll actually talk about that too.

P: Yeah, people would balk. I really believe that.

P: Because it's not benefiting them like directly.

P: But indirectly seafood probably could be.

M: A very large portion of our seafood.

P: Oh, I think the case can be made, but the further away you live…

P: I don't live on the beach so why am I paying for beach property?

P: Right.

P: Like there's certain things that you see

P: I think the further away you live from the Gulf and the further we get from the event, the less people are going to want to pony up.

P: That's going to be their first reaction. It's not me.

P: But on top of that, can you trust the government to say that trust fund is just for that when they raided social security?

P: ??? schools.

P: It seems like the key thing is that we're going to spend a ton of money and it's not going to guarantee there's not going to be another blowout.

P: Right.

P: Well this isn't even a guarantee that there won't another blow out, this is when the next one happens we'll be there to see how bad it is.

M: Quicker response no 1 and number 2, the sub surface plumbs were a huge issue. Nobody really knew where they were, how extensive they were, so this would allow us to monitor that a little better, and then also to respond much more rapidly. Those ships, at least one or two of those ships could be at any site within a day, and they would have the equipment on board to begin addressing the problem. So it's an insurance policy of sorts. It's far from perfect.

P: We still don't know actually what caused the ????.

M: Well there was a fire.

P: It doesn't matter what caused it.

P: But, if you don't know what caused it you can't prevent it.

M: Well this, just the last few days here the report was presented and apparently there was I guess, some negligence in terms of maintaining the blow out preventer. And then that was complicated, I'm trying to think, I read in the paper apparently when the explosion took place the pipe coming out of the well head kinked and that prevented the blow out preventer from closing that off. So there were a whole bunch of contributing factors. That's usually the case.

P: And how are they going to solve those?

M: Well…

P: Maybe better maintenance on them?

M: I think you're going to see regulations regarding better maintenance, there's discussions now about a double blowout preventer, in other words a blowout preventer and a backup. There are a tremendous number of scientists and engineers working on this right now. I have a friend who is a retired BP engineer and when I asked him about it all he's ever said is I'm glad I'm retired.

LAUGHTER

M: Now there's a lot going on and I don't know what all the answers, I don't think anybody knows what all the answers are, but this report came out I thought it was quite extensive

because they actually lifted the blow out preventer out of the ocean floor, a company out of Norway or something, a company that designs oil rig equipment out of Norway, analyze it to try to identify what the problem was. We learn from these things. We learn from our mistakes. Unfortunately it was a painful and expensive way to learn. Ok. Where the heck was I? Oh yeah, if you could just write any other reasons that you can think of pro or con on the sheet there that would be helpful and Mike's going to collect that card. Scientists believe that implementing the program would significantly reduce the impacts on the environment following another large oil spill similar to the Deep Water Horizon spill. And we're going to get, if you don't have anything to add we're going to need it. And then Mike if you would hand out Card F. Card F shows some of the environmental impacts observed after the Deep Water Horizon spill in terms of birds killed in the oiled areas and that sort of thing. It was also on an earlier handout. But it also shows what scientists think the impacts would have been if the program you just read about had been implemented at the time. If the program had been active at the time of the Deep Water Horizon oil spill it's estimated that oil spill impacts would have been reduced by 95% due to the rapid detection and response at sea. The number of most species it would protect is small in comparison with their total numbers with the exception of the endangered species, that is, the sea turtles, sperm whales, gulf sturgeon, and small tooth sawfish, which are endangered species. Now at this point we're going to provide you with another handout and we'd like you to consider whether or not you would vote for this program and remember there are valid reasons to vote both for and against the program which we saw on Card E. If the program were passed by a majority vote in the next federal election, which would be Nov. of 2012, you would pay for the program through a one- time federal income tax withholding that would go to a dedicated trust fund for the Coast Guard that you heard about earlier. And the handout specified, the charge would be $75 withheld from your federal income tax return for 2012 payable in 2013. So based on the information that you've heard to this point would you vote for it? Would you vote against it? Or you're not sure. And if you can maybe list at the bottom of that first page of that handout, what about the program made you vote the way you did? Things that you liked. Things that you didn't like. Things that you were skeptical of. And then based on your answer on the first page of that handout go to the 2nd page and answer the appropriate question. If you voted for it at the top of the 2nd page, there's a question. If you voted against it, if you're not sure. It's pretty simple. Those questions.

P: In going to do this survey, when do you expect that survey to be finished and then presented to whoever is going to get it?

M: We are shooting for, this is the second to last one, early May is when we hope to have all the information incorporated for this particular survey as part of the bigger project.

P: How did they come up with this estimate of…

M: There's wildlife biologists and marine resource specialists and they really brought a tremendous number of people together. But it is an estimate. There's no question.

P: Because the oil coming to shore, I mean this is early detection, and early intervention, but even after they knew it was coming and had so many boats and everything else trying

to contain it they still couldn't do it. I mean it was just so much. And what the surface, I mean they had the surface skimmers, but it was coming up from the bottom all of the time, and they really didn't have any way to control that except tossing in the neutralizer or whatever they were throwing in.

M: Yeah, disbursements. The chemical disbursements

P: Yeah.

M: Yeah, that's the big issue. Birds are going to be impacted mostly by the surface water conditions. But the dolphins and the fish and the sea turtles, the surface water conditions are an issue but the sub-surface booms are tremendously problematic for them. And it's extremely difficult to get our arms around just exactly what went on and what the longer term implications are on the reefs, oil settling on the bottom, the impact through the food chain. We're going to talk about some more of these before we're through here. Mike's got another handout. We're moving through this nicely and I appreciate all of your input. Now what we want to do with this handout, that Mike's giving out now, want to consider some information that was given to you earlier and ask a few questions regarding how you felt about it. So if you just go through and check a response for each question, we'll collect them and then we'll discuss this one.

P: So this is actually discounting, it's taken into consideration the interest.

M: I mean if you had questions about the effectiveness, let that…this is certainly not a foolproof program.

P: You just have a typo in the 2nd word at the term not at that term.

M: Thank you. We'll change it when we have more time. (background talking)

P: You know you work on these things for so long you can't see anything.

M We have a lot of eyes looking at this thing every time but obviously we get some people who aren't looking. Ok before we do any other handouts, I'd like to go through this and get your feedback if there's some issues you want to talk about. Questions from that last handout as a framework. At the time you voted on the program, did you think the harm from future oil spills in the Gulf would be about the same as the Deep Water Horizon oil spill, a lot more, a lot less, any…it's just an opinion. There's no right or wrong answers.

P: It should be less. (Others agree)

P: We can learn something from this.

P: That's what I was thinking, hopefully it's about the same.

P: I think it would be more because of the cumulative effect.

P: Well that's a different way of looking at it.

P: You know it's bad this time.

P: At BP you have an awful lot of indifference. They are very proud people to have to take advice from Americans so they tend to pooh-pooh a lot of it.

M: Well, if they want to be drilling then... it's our economic zone. I think the Americans got them in trouble. (General talking)

P: What I think of is that as horrendous as this was, it's never all going to be cleaned up. And if you have another spill on top of that, and that makes it a cumulative effect. And it'll make it worse. And that's still on top of that and I think that it's never going to be less than what happened.

M: So even if the oil spill was somewhat less than the Deep Water Horizon, the cumulative effects on all that on the eco-system is going…

P: It's going to impact.

P: If it was contained, it would be that much more.

P: Oh I agree, I absolutely agree. I also don't think that our congressman has the political will to do anything about this.

P: They don't have any political will for anything.

P: Except to get re-elected.

P: And I mean some of the issues about protection and trying to get the cleanup had to do with getting the equipment to places and it took too long. And I'm not sure that a monitoring program is going to do anything beyond the 'oh this is happening and this is the scale of it.'

M: Well the way these ships are equipped, they're supposed to have all of the equipment aboard that was used to solve the Deep Water Horizon problem. So that's the purpose, you're not just going to have these ships, these ships are not just going to have a monitoring capacity. They're going to have equipment, submersibles, robotics, and you know the booms were somewhat helpful. But as soon as the waters got choppy, the booms weren't that much help. They're going to try to have all the equipment on board on these ships that proved to be effective in Deep Water Horizon addressing the Deep Water Horizon spill. As you say, hopefully, we learn from our mistakes.

P: Do you think $150 million dollars is enough to cover that?

M: What we're doing in this study is we're trying to determine, it's called a willingness to pay methodology. Do people think it's important, how important do they think it is measured in dollars and cents terms. I don't know, we've got to start with a number so we start with a number that hopefully won't scare people too much. It might be reasonable but maybe you'd be willing to pay for it and maybe you wouldn't be willing to pay that much. That's kind of what we hone in on with the methodology that we use. Did you consider, how serious do you consider the harm caused by the Deep Water Horizon to be, extremely serious, very serious, somewhat serious, or not too serious at all.

P: Several say extremely serious. As you say, I think it will take years for us to really understand the impact.

M: Well the Exxon Valdez, it really was. It was four, five, and six years out when they really saw the most significant impact on the fish.

P: You still find oil on the beaches out there.

P: Right, on the shorelines.

P: I don't trust the media, they have a tendency to embellish, way beyond the tactics.

M: To further complicate the issue.

P: In Alabama, though, I heard that I know a friend of mine's brother got hired by BP working nights on the beach. And all they were doing was bringing sand in and covering the oil on the sand on the beaches.

P: It's still there.

P: Underneath.

P: It's just covered up.

P: Yeah.

P: A first aid kit.

P: Band aid.

P: Also too, during World War II almost every beach on the Atlantic coast was covered with oil. From all these tankers that showed up, and they recovered.

M: Well the one card I gave out described how effective the program would be in eliminating environmental damage from another oil spill and you raised the question how do we know? Do you think the program might be more effective than we stated or less effective or as effective?

P: Like her, I think monitoring, you might get early warning but it's really not going to, they're not going to be able to contain it with five ships.

M: Particularly with the subsurface.

P: Yeah, I don't know what they had out there but they couldn't control it.

P: I actually said that I thought it could be as effective as stated in a perfect world.

P: Yeah right, everybody has different approaches and that's one.

M: There's no right or wrong answers. We're looking for your impressions. (General talking)

P: the thing is if they could guarantee that it would cut it that much.

P: No guarantees in life.

M: Or this next question kind of addresses what you asked. When you were asked to vote on a one- time payment in a ten-year time frame, when you decided how to vote, did you think your household would have to make the payment, yes or no or maybe. We're saying one time, but maybe it might be a more than a one-time payment. Anybody, any discussion on that?

General talking.

M: Ok.

P: Well it was one time and then it would be evaluated in 10 years and you said. To me it was ok, we're going to see. It may be just once, it may be more than once.

P: But it won't be until 11 years from now.

P: Exactly. It's not a right now decision that has to be made.

P: I think if you were get to cheap insurance, not bad.

P: It's worth it to me, just for the animals. (General Agreement)

P: You think one dinner out and you eliminate that one time and look at the wildlife you will save. You're talking a hundred dollars alone.

P: I'm having dinner with you. (Laughter)

P: The beaches, just everything.

P: I would go for it without any qualms if I know for sure that the money was actually going there and that's what I don't trust. (Background talking)

P: You give it to another project.

M: We'll actually address this issue right now. This is the very last handout and it's a very good point. You should say something when it comes out. Overall did the descriptions and the materials that we presented tend to push you one way or the other. We're trying to be objective on this.

P: No. (Others also say no) It's informative. You gave us the information and let us make our own decisions.

M: We're getting there.

P: You're going to find the answers very first.

M: Yeah, I think we will. Although as we refine this, we're making progress. We can see by the responses that we're making progress. But we're not trying to push people one way or the other in terms of supporting or not supporting this. We're trying to sort comments out and hopefully people will make decisions on their own. Ok. This is going to come as a real shock but Mike's got another handout so... (Laughter) This is just a general questionnaire about your household recreational activities. Just check them in the boxes.

P: Live or residing?

M: Residing. Ok, we are almost at the end now and what we've done these last few minutes is we've started to discuss things a little bit more information. With the last handout, this is the last handout we've got, Mike's going to pass it around. We're going to give you a chance to vote again to see if maybe your opinion has changed based on any of the discussions. It may not have or it may have changed. You were asked to vote for or against the program that will help prevent damages from future oil spills and would limit the environmental effects of Deep Water Horizon oil spills as shown. So we'll ask you again and if you want to change your opinion that's fine. We want to try and get some feedback and there are a couple of other questions on this last handout. We'll talk about that.

P: Just a comment. The very last question on the last half, could you define what you mean by environmentalists.

P: Actually I think it's what it means to you.

M: We wrestled with that issue and we just figured we would use the term and let people have their own…

P: The term environmentalists, I care about the environment very much, very much but I don't consider myself an environmentalist.

M: Thank you, we'll definitely take that into consideration as we're doing this, putting this thing together. It's a question that was troubling us, thanks.

P: But this isn't the government, this is the Coast Guard.

M: This is the Coast Guard. The last question, how much confidence do you have in the US Coast Guard?

P: The Coast Guards patrol a wide area. That's a problem.

M: It is indeed. And this would be a concentration of resources for the Coast Guard that's really unlike anything else that they have in terms of effort and energy concentrated on a particular issue that has been given.

P: Actually the five ships out there might help if somebody gets lost.

M: All right, any other discussion or comments? Particularly in reference to any of them, that last one. Is your level of confidence in the Coast Guard higher than for our federal government in general?

P: Yes (Others agree)

M: That's been a pretty consistent response that we've gotten.

P: They're pretty good at what they do.

P: We could pay them directly, I'd feel more comfortable.

M: Well that's why we're talking about the Coast Guard trust fund that to the extent that government's allowed to, isolates that money and says this is the pot of money and it's going to be used for this and only this.

P: That would be great.

M: What we found as this has evolved is that when we talked about a federal trust fund, there wasn't much confidence in that. And so we identified…

P: Very effective in executing a mission that they have now. An additional mission that they have.

P: I never thought of them as environmental issues.

P: What they would be effective at is the bureaucracy of this program.

M: Well, this is going to require some training that's very different than what the Coast Guard normally is training their men and women to do. The water analysis and that sort of thing, you need to have well trained scientists for these ships. So it's a very different mission or role for the Coast Guard.

P: Well, we certainly have asking the other branches of services to expand their traditional missions in recent years and so I see this as a continuation of asking the armed services to serve in a different way, our national interest.

M: Ok, are there any other questions coming? I really appreciate your cooperation and you're coming out on a nasty weather night. Your input is very, very valuable. Every step along the way we get better and better at refining the survey. If we had put the first one out, the results would have been pretty rough, pretty ragged.

P: What's the likelihood of us ever seeing the final survey.

P: I know, will there be any way to see how it's going?

M: I don't know.

M: It's public information.

M: Yeah, I think there will probably be some information when it's available. We're not going to restrict internet access but how they're going to promote and notify people about it, I don't know.

P: Are you considering designating specific people to answer it or putting it on the internet and having anyone answer it?

M: It would be random.

P: Yeah, because you could never measure it that way. It'd be a free for all.

P: How did you pick the people here ?

M: Randomly called people up and ask them if they are willing.

P: Would you do it by zip code or something like that?

M: We try to do a range around the area. It's reasonably drivable for the folks.

M: Ok.

P: I congratulate you on a decent survey. I've done political surveys, I've done organization surveys and it's very difficult to design an elegant survey that is ??? I think you all have done a very nice job.

M: Thank you. (Thanks a lot.)

Tape off.

Jacksonville Focus Group (April 7, 2011)

M: I'm in Agricultural Sciences, it's part of the College of Agriculture. I'm an agricultural economist. I work on marketing issues and Mike's the Director of the Florida Survey Research Center at the University of Florida. He's a political scientist so he's kind of a doer.

P: My brother works on campus at the University of Florida in the department of Agriculture.

M: Does he really? What does he…

P: He's the director of the citrus industries.

M: Oh, ok, big, big.(That doesn't disqualify you, I don't think.)

M: Nah. It's a pleasure to have you here. We both work on campus in Gainesville. We're doing these focus groups all around the state. We've done them in Miami, Cocoa, Orlando, Tampa, Pensacola, and Jacksonville.

P: How many in each.

M: Just to have a cross-section.

M: Just one in each.

P: We're fortunate to be here.

M: Well, we're fortunate to have you. What do you think, should we go ahead and get started?

M: Let's do it if somebody comes just a little late…

M: Well, ok. My name is Bill Messina and this is Mike Scicchitano and we're both from the main campus there at UF and we appreciate you all coming out this evening. We have what I think will be an interesting, some interesting discussions. We're looking for your input but before we get started as is often the case, we've got a little administrative work we've got to do. Anytime universities engage people in research which is fundamentally what we're

doing here; we are required to give you all a little statement of what we're going to do, what the risks are, in this particular case, there are no risks associated with it. But for medical tests and stuff like that, they might have risks associated with it. I want you to know that your answers are going to anonymous and there's going to be compensation. So if you just want to read through this for a minute and make sure that you agree with everything that's there. And if you do, sign it and Mike will collect it up. Again this is a University requirement, anytime you have interaction with people from outside the university, you have to do these kinds of things.

(Passing out papers)

M: It's not nearly as significant for this as it is for medical studies and things but we still have to do it so.

P: You can do it in pencil?

M: Whatever is fine.

P: How did we get chosen for this?

M: When we decide where we're going to do something like this, we actually identify a zip code and then we get a list of telephone numbers. You're not on any particular lists, it's just a random thing. That's what Mike's shop does.

P: The reason I ask, this is my third such focus group.

M: Is it really?

P: Yes.

M: You're either lucky or unlucky depending on how you think.

P: It's interesting.

M: This is a really interesting one, I've had a good time with it.

P: I got called for another one, but it was on the other side of town. I guess it was in Brooks from the University of Florida. But I didn't respond to that one because I knew this one was more.

M: We try to get a 15-mile radius from where we're going to do something like this so people don't have to travel very far. I'm pleased that you could come and I realize that you all have to take the time to come so it's important. Well again, thank you. We're here this evening to get your ideas, your thoughts, and opinions on a series of public policy issues. And then we're going to focus on one in particular. I really want to encourage you to provide your opinions. You know when you're talking about your opinions, there's no right

or wrong. We're going to present some information. Any interaction, any suggestions, any comments; what we're going to be doing is developing a questionnaire that's going to be delivered either on the internet or through what they call phone mail phone and what they're doing is working through the questionnaire with people over the telephone. So I'm going to be reading from a script. I apologize for that but it's part of what we have to do to make sure that we're real consistent and to try to make sure that we have this just as clear as we can possibly get it. Every time we do one of these, we polish it up a little bit and it's amazing how much progress we've made this being the sixth one of these programs. We've held meetings like this around the state to get as many opinions as possible. And we talked a little bit about how you were picked out at random from a random phone list. We are going to be giving you a series of handouts this evening and we will be collecting them. Please don't put your name on them. There's no reason, we don't care who said what. We just want to get your input. We're trying to keep all your responses anonymous and what you tell us tonight will help us develop a survey that's going to end up going to thousands of people so your input is really important in helping us make sure we're spot on and clear as we can possibly be. We want you to feel relaxed and comfortable as you possibly can. If you have questions at any point, please don't hesitate to ask or if you need me to clarify a point, whatever we need to do to make this as clear as it can possibly be. And again, when we have the discussions, if you have ideas or thoughts that you want to throw out, please feel free to throw them out there. We're looking to get your input. Any questions? Ok, good enough.

P: Crystal clear so far.

M: Good enough, I hope it will be crystal clear all the way through. We're going to start by talking for a moment about some current issues facing Florida first, and then the United States. Mike's going to give you a handout now and there's a list of issues on that handout. Let's just look at the first page initially. There are issues facing the state of Florida. And we'd like you to rate the importance of those issues to you. Some you'll think are important, some you won't, and then we have a graduated ranking there. Maybe they're just a little important, somewhat important, very important, and extremely important or you might not be sure. So whatever applies to each one of them, if you just …and again, just focus on the first page. We'll discuss that and move on to the second page.

(Someone walking in late)

M: Good evening, how are you doing? My name is Bill Messina. Thank you for coming.

P: Thank you.

M: We're actually looking at a handout, Mike's going to give you a handout now. On this handout, just look at the first page for now. There's a series of issues facing people in the state of Florida and we want to get your impression on how important or unimportant you think those issues are. If you want to take a minute and look at the first page now. We'll go over the discussion of that, if you'll look at the first page. Once you finish with that, then

we'll discuss that and then we'll go to the second page. And you'll have an opportunity to sign this paper.

P: This question in eliminating growth management, is that population?

M: Usually it's in the context of development.

P: I was just looking at construction.

M: Right.

P: When you mean restrictions there, are you talking about zoning issues?

M: Zoning issues in South Florida?

P: Do you want to eliminate zoning issues, is that what you're saying?

M: Well, the zoning issues have been established for a fairly long period of time. But now there are other kinds of approvals that people will need to get. For example, a new housing development or a golf course.

P: You mean like high rises?

M: High rises or it could be tracked homes in Jacksonville here.

P: It says how important is it to you to eliminate these restrictions?

M: Correct, yes.

P: If you built them and ??? 9:04

P: And they overbuild when there's already a building. They could knock them down.

M: Are there any other issues that you would include on that list that you think are important because that's certainly not an exhaustive list. We realize that so there might be other ones. We just want to get some info.

P: Mine would be improving water quality. How about water conservation? We have a really low??? 10:11 And it's a big concern of mine. If we ??? have water, we have everything???

M: Yes, you're absolutely right.

P: It's just a suggestion.

M: Sure, that's a good one. Ok, any other suggestions? Ok, if you want to flip to the second page; now the second page is a list of federal programs. The same basic format but for federal issues or federal programs as opposed to issues that are more specific to the state here. The federal government spends tax money on programs for a lot of different purposes. For each one, I'd like you to tell us how important it is to you that money be continued to be spent on each of those programs.

P: I already went through it.

M: That's ok, no problem.

P: These are kind of hot button topics today aren't they?

M: They are indeed.

P: Especially the wildlife.

M: It's really interesting when we go through these because people bring all kinds of perspectives. And people think one issue is really important and others think not. Now that's good, that's a diversity of the people. That's good.

P: I have a question on H, the reduced fee school lunches? Is that for everybody or just for children that are…

M: The reduced fee school lunches are programs for people that meet certain income criteria or don't meet certain income criteria.

P: I thought that program had been cut out.

M: No, it's still in place.

P: No, because they get…here in Clay County, they get free breakfast and sometimes also free lunch. Some of those children even here on Cleary Island, that's their only meal in the day. And they come to school Monday mornings very hungry.

M: Yes.

P: And I think that would be sad to cut that out.

M: Well some of the children qualify for free breakfast and lunches, others just for reduced price. It's all based on income and everything. But they are still in place, those programs are still in place.

P: Is this considered in Duval County too?

M: These are actually federally funded programs.

P: They're talking about some of these things today, C-span you know.

P: In light of school lunches…

P: Do away with EPA and other things.

P: They're cutting out school activities like sports (General talking)

M: Yeah, that's one of the things that's been taken into consideration.

P: When the lottery first came out and said that a lot of that money's going to go to the schools.

(Laughter)

M: What they did with the lottery here in Florida was well, a lot of the money goes to schools. Every dollar they take from the lottery for schools, they take a dollar in general revenues for schools.

P: That was intended or earmarked for schools.

M: Yeah, and in Georgia…

P: Called creative bookkeeping.

M: This is kind of getting us off track but in Georgia when they were talking about a lottery, their governor said I will not allow a lottery unless it's new revenue coming in. We're not letting them play the game that they play in Florida.

P: And other places too. They play the same game.

M: Well, anyway any others that you would add to this list?

P: Well, I'm with P, I don't want any cuts in schools, any kind of school things, sports or music or art or anything that keeps those children in school. Our main purpose if we're going to get them educated is that we also have to keep them in school.

P: I agree, that'll keep them out of trouble, activities…

P: How about the EPA, OSHA and things like that that protect the environment, protect us from working with hazards, chemicals and compounds.

P: We'd like to know the channel that ships come in on…

M: Mm-hmm.

P: …because that would bring heavy revenue for the state.

M: Certainly for the region here. 14:44

P: I'd go this above the column???? Rails and all.

M: Good, that's excellent. This is actually being recorded so we're getting your input even though I'm not furiously scribbling notes here so ..

P: Over here?

M: There's nobody behind the glass (Laughter) but we are recording it. Nobody pay attention to the man behind the curtain. Just Mike and I are the only ones here.

P: I've got a question.

M: Yes.

P: …about the library.

M: Mm-hmm.

P: That's for libraries, more libraries, and different libraries?

M: It's on the first page, that's actually support for your local libraries. It's not school or college university libraries. It's for your local public library. Good, all right, the last question on page two there is, other than today have you ever been interviewed before today about whether the federal government should start a new program. That's just an interesting question, if you be sure that you answer that question for us. And then Mike will go ahead and collect this handout. Now the programs that we looked at on the second page are just a few of the programs that the federal program currently spends tax money on. Proposals are sometimes made for new programs but the federal program does not want to start any new programs unless taxpayers are willing to support and are willing to pay the additional costs for these programs, particularly in these budget times. One way for the federal government to find out about this is to get people like you information about a program so you can make up your mind about whether or not you think it's a good program or not. Your views are very useful to the decision makers when trying to figure out what if anything to do about a particular problem or situation. In interviews of this kind, some people think that the programs that they're asked about are good and some think that they're not needed. And that's exactly the sort of input we need and that's what we are soliciting from you and we appreciate very much your input on that. In the past, people have been asked about many types of programs and this interview today, this session today, I'm going to ask you about a program that would decrease the environmental damages due to oil spills. That's going to be the focus on our program from here on out. The program that I'm going to describe has been designed to limit the environmental impact of the large oil spills in the

Gulf of Mexico, in particular. Please note that the survey efforts that are going to be conducted will be focused only on the environmental impacts. There will be other efforts underway that will estimate the human impacts such as on recreation, tourism, restaurants, hotels and jobs. And those may be very important to you and to all of us but this evening what we're trying to focus exclusively on is the environment so as we're going through the questions, kind of try to keep that in the back of your mind. We'll be trying to focus on the environmental impact of oil spills. We're going to begin with a series of past oil spills. Then we'll provide you some information on the program that you'll be evaluating today and finally we'll ask that this particular program that you're evaluating is worthwhile and why you feel the way, you do. So that's kind of the script that we're going to be going through. Mike's got another handout for you here. What we'd like for you to do on this one is think about any major oil spills that you may have heard about or that you may remember hearing about. You can think about oil spills anywhere in the world not just the Gulf not just the …

P: I have a question. I just left an oil spill in Pensacola so would I write something about that?

M: Sure, whatever your experience is, influences what you think about. Yes, ma'am?

P: I was raised in Tampa, so I was raised on the Gulf. It was heartbreaking for me and they gave me so many stories about what it would do to the environment and then they started changing it around. It kind of reminded me of when parks burned down trees so that new growth comes.

M: Mm-hmm.

P: I really don't quite understand that Gulf spill just really, really, really just upset me.

M: Well, we'll talk a little more about this. The reality of this is that it's very difficult to get a handle on all the environmental impacts.

P: It will take years before we know.

M: And that's exactly what we'll talk about. If you hold that thought because we're going to come to that exact point in a few minutes. Anyway if you take a look at this handout too and any of the oil spills that come to mind in the Gulf, in the United States, outside the United States, any that you can think of; and maybe jot a couple of notes, if you have any recollection of what kind of damage they might have caused to the nature or environment. You don't have to have the name just where it was and it doesn't have to be current. Yes, ma'am?

P: I just thought of something. On that federal list, I wished I had put it on earlier, the farm subsidies?

M: Ok, excellent.

P: I mean all my relatives are farmers but I tell you, that seems like a racket.

M: That's an issue that I think is going to get some increased scrutiny.

P: A racket, how so?

P: Well because sometimes people plant and it just lays there. And they're getting paid…

P: Not to plant. They set aside so much acreage and they get paid whether they grow or they don't.

P: Yeah.

M: That's a good one, that's a great one. Thank you.

P: That's interesting. We're getting so much foreign food and we ship our stuff overseas. It don't make sense.

M: But any of the oil spills that you can remember having heard about or read about.

P: What if you don't know how to spell it?

M: Any rough spelling would be ok or if you don't know the name of it and you just want to…

P: I'm a little rusty, I know the company, EX…oh never mind.

P: I'll help you with spelling if you need it.

P: I got the first three letters, the last one I don't know.

M: That's ok. We'll know.

P: I'll put squiggles in the middle.

P: I guess that doesn't count the tar balls that come off the ships, does it?

M: Well, you can put something down about those too. When you're done, Mike will pick them up from you.

P: Yeah, it's pretty bad up there. I was up there like a month after the explosion went off so the whole time I was there, I was picking up oil and smelling it.

P: You did that?

P: Oh yeah, and seeing it and smelling it.

P: Did that affect you?

P: It didn't affect me, I wore a tie back and gloves and PB.

P: That's a lot of work though wasn't it?

P: It was somewhat but it wasn't like, there were so many, it wasn't so bad because we were following patterns, there were so many patterns. It's bad but like looking at the oil company it was bad???

P: What gets me is as soon as they plugged the thing, they said the Gulf coast was open for business now.

P: It was probably preventable too. If they had spent a little extra money, it was probably preventable.

P: That's real upsetting to me because I think there's so much corruption.

P: They try to save money on the safety devices.

P: The same way that happened in Japan, the nuclear thing, that was just pure negligence, not doing what they were supposed to do to keep it up.

P: That's criminal.

M: But there's a difference in Japan, when you have a natural disaster that impacted that…

P: Yeah, I understand that and the fact that the thing blew was because it wasn't maintained properly, from what I understand.

M: Well, how many on this list mentioned the Gulf oil spill last year?

P: It might have been two in the area.

M: Pretty much everybody, ok.

P: I did the one from Alaska.

M: Ok.

P: I just wanted to ??? because it was the first one we had that size.

(Talking over each other)

M: And we're still seeing the effects.

P: They didn't tell us how much is laying on the bottom.

P: A few hundred years from now you're going to have problems.

P: Yeah, I have friends that are shrimpers and they took their boats out there…

M: Mike's got another handout here and this one asks you about what was it about the environment of the Gulf of Mexico that you think was most affected by the spill?

P: The Gulf itself.

M: The environment, we don't think about hotels and restaurants and tourism and that sort of thing.

P: I put the wrong year, I put 2011 on my paper.

M: That's ok. That's ok, we'll know what you're talking about.

P: The people, the people that were attacking us like we put the oil out there.

M: We're trying to focus on the environment. What was it about the environment of the Gulf of Mexico that was most significantly impacted by the oil spill. Then we'll talk about all these others, you know… any environmental impacts that you can think about in as much detail as you can. And Michael will collect those as you're done.

P: Are we supposed to go out and protest after this?

M: No, we're not trying to generate that kind of response. So what were some of the impacts that you, environmental impacts that you thought of from this or that you might have jotted down. Anything that you want to discuss in particular?

P: Estuaries.

M: Estuaries.

P: Estuaries, fishing, birds, surface water, and pelicans can get saturated with oil.

M: P, did you say something?

P: He basically said what I was going to.

M: Ok.

P: The reef and the fisheries and all its inhabitants.

P: An impact on fishing.

M: Yeah, that's certainly…there's another component of the study that we're working on that's looking at that aspect of it.

P: We also want to know what it's going to do to oyster beds and shrimp.

M: Were there other…

P: It will never be the same after the oil spill.

P: What's that sea oats, the plants that grow on the sand and stuff like that.

M: Were there other oil spills that you can think of besides this one that you might have written down on your list?

P: The Exxon Valdez.

M: The Exxon Valdez.

P: It still has problems today.

M: Up to this point, that was the other major one that they had here in the United States back in the early 1990s.

P: There was a recent article that I read about a UGA professor who did some undersea work and she was showing pictures of what the bottom of the ocean really looked like. And it was just enough to make you sick.

M: There's so much work being done right now. The faculty from universities and research centers from Florida, Alabama, Georgia, Mississippi, Louisiana, and Texas. Actually, this project that we're involved in right now, we've even got faculty from Colorado State, from Ohio State, and even Appalachian State who happen to be specialists in a research methodology that's applicable. They're not reef specialists or ocean specialists but they're specialists in looking at a particular method of economic methodology. We'll talk about it a little bit later. There's a tremendous amount of work being done right now trying to assess what's going on and the future impacts.

P: There was another one, I think, where was it, Michigan, I think.

M: It may have been on the Great Lakes up there.

P: There was one off the Yucatan Peninsula wasn't there?

M: Yeah. That's one I didn't remember, but doing this work, there was a big one off the coast of Spain too. So there's been a number of them. But this one's certainly one of the largest. All right. Yes?

P: I have a question. Do you think we should discontinue so much drilling in the ocean and do more drilling on land?

M: That's an excellent question that we're going to address as we go into this a little bit more. So let's keep moving forward, that's great. That's a nice transition. Mike's going to give another handout now and a map. It's a map, basically of the Gulf of Mexico, nothing fancy. And you're going to have a handout that you're going to be working on for us here. The Gulf of Mexico shoreline is made up of sandy beaches and coastal wetlands, basically. Handout number four contains a couple of questions that we'd like you to answer related to maybe recreational activities that you engage in on the Gulf. P said that if you want to sketch a note that you grew up or are from Tampa Bay or live on the west coast or something like that, you're welcome to note that.

P: When you was in the Gulf area, you got a lot of ...it was more like topics on this?

M: I'm sorry, what did you say?

P: When you was in the Gulf area, like Pensacola, was this a big issue?

M: You know it's been a big issue everywhere we've gone.

P: Oh, yeah?

M: Yeah.

P: Really!

M: I was thinking, well maybe not so much in Orlando, but even in Orlando, but even in the inland. Because we tried to move around the state and everywhere you look, folks in Miami realize the implications of the oil coming through the Straits of Florida and ending up in the Gulf stream.

P: Now even when we say we haven't been in there in the past 12 months, if we were to go, you want those activities checked.

M: Write it, if I were to go this is what I would do. It could be something like that.

P: And where do you want me to put that I was born in…

M: Just sketch it anywhere, it's up to you.

P: Here it's yes or no, but I was in the Gulf area ??? I didn't go up to…

M: Just anywhere in the Gulf, anywhere in Florida or anywhere in the coastal areas there. Any maybe you didn't get out on the beach, maybe you were there for business or something. But any traffic or travel that you've had. And then Mike will collect that up when you're done. It's going to get more interesting.

P: Do we keep the maps?

M: You may keep the map.

P: Ok.

M: We've got more maps coming.

P: Ok.

P: Hey, look when we went over there, that dad gum water was green.

P: September, we went in September; the water was green from about 20 feet out in Destin.

P: Oh, Destin. That stuff's bad. The stuff that they put in it killed it.

P: Oh no, I thought it was algae.

P: No.

M: Ok. Mike's going to hand out another map now. Oh I'm sorry, I thought you were done. Take your time.

P: I'm almost finished.

M: Take your time; I'm not rushing you. I wasn't paying attention.

P: I had fun.

P: You had fun?

P: Yeah, like getting out.

M: Being outside?

P: Yeah. Besides working every day. (General talking)

M: Wait till you see the next one, Mike's got another map that's surprising, shall we say.

P: You should see the pictures my friends took, the shrimpers out on their boats.

P: Wow, yeah.

M: Like before and after pictures?

P: Well no, they went out and I have several guys all out at the house and they went out in the shrimp boats and they went to help clean up the Gulf oil spill. And they sent back pictures and a couple of months later, my fiancé and I went to New Orleans and Panama City and Tampa for his work. And I played all day while he worked, so it was nice to see how much cleaner and nicer it looked. The spill, from all the measures they've done to clean it up.

P: They worked really hard.

P: Oh yeah.

M: Well, this map too is interesting. It shows the drilling regions in the northern regions off the coast of Mexico and each of the yellow dots on this map represents an active oil rig platform.

P: An active one?

M: An active one.

P: Why isn't this in, I mean I read newspapers and magazines all the time, and I have never seen anything like this.

P: No, not in one spot.

P: I've never seen so many.

(Talking over each other)

P: I didn't realize there were so many.

P: You're kidding me.

P: All these are not by Florida so that's still a long way off.

P: How many are there?

M: Thousands actually.

P: That's a double ton load of them.

M:That's amazing. Now what I'd like to do is to discuss the oil spill from last April. It began on April 20, 2010, when the Deep Water Horizon (that was the name of the oil rig); it was destroyed by fire while it was drilling an oil well. And it was only about 50 miles southeast of the Mississippi River Delta. The Gulf of Mexico was about a mile deep, 5,000 feet deep at the drilling site. And the sinking of the Deep Water Horizon oil rig caused oil to spill out of the riser, the plug that connects the hole in the ground with the well to the drilling rig that was at the ocean floor. The spill lasted until September 19, 2010 when the oil spill was permanently capped. It actually was July when they were able to get a temporary cap on it but it was September before the permanent cap was installed. In all, about 205 million gallons of oil spilled into the Gulf of Mexico, making the Deep Water Horizon oil spill, the largest in US history. For comparison, the spill was about 18 times than the Exxon Valdez oil spill in Alaska in the early 1990s. So now, Mike's got another map, he's going to hand out that's related to this spill. This is a map that shows the location of the Deep Water Horizon spill and how it affected the Gulf of Mexico. You'll see a blue x on the map and that's the site where the Deep Water Horizon spill occurred.

P: And then you show how it spread?

M: That's exactly it. The orange shading over the Gulf shows where surface oil was detected after the spill. The darker the shading, the longer the oil was present on the surface in this location. For instance, the lightest shading shows areas where surface oil was only present for about one to three weeks while the darkest shading shows areas where surface oil was present for 16 to 18 weeks. Now the areas on this map, on the coast that are black, represent areas where oil spilled from the Deep Water Horizon made landfall. About 1,050 miles of Gulf of Mexico coastline was impacted by the spill. The coastline consisted of estuaries, coastal wetlands and beaches. Oiled areas can kill vegetation and accelerate beach erosion. In addition to the surface oil shown on the map, large pockets of subsurface oil have been detected; and were shown to be the result of the Deep Water Horizon oil spill. Due to the lack of a Gulf wide monitoring system, the large size of the area affected, both on the surface and subsurface pockets of the water column and the result of the changing wind patterns and ocean currents, there's really no way to know with a reasonable degree of certainty how much oil remains. The use of dispersants and the natural ability of the oil particles to break down also complicate any measure of the oil. The breakdown of the oil into microscopic particles and the settling of some oil onto the sea floor also has the ability to impact the ecosystem and the food chain in the Gulf of Mexico. So Mike's got another handout. You can hang on to these maps.

P: There was also 11 people that died on that Horizon.

M: Absolutely. And they're probably fortunate that more didn't die.

P: Oh, absolutely. And there's no telling, the flue still exists.

P: It's just for a long time.

P: Lot of people got sick cleaning it up.

P: Yeah, poor P.

P: Yeah, someone died out there.

M: Now there's 3 sheets stapled together in this little packet. Card A-1 shows the Deep Water Horizon's effect on birds.

P: Oh, my God.

M: The statistics shown are from the Gulf of Mexico Restoration Program that was created after the oil spill. It's a federal government program that sought to recover all noticeable distressed or dead animals following the spill. And the numbers you're looking at here are just the birds. The three species most affected were the Laughing Gulls, Brown Pelicans, and Northern Gads. Note that not all the dead birds that were collected were visibly oiled. So it's possible that their deaths were due to other causes. Also not all visibly oiled birds died. Some of the visibly oiled birds were collected alive, cleaned and released back into the wild.

P: Now about how long did they live after that?

M: Well, we'll talk about that here in just a minute.

P: That's just the ones they found.

M: Yeah.

P: I'm sorry.

M: That's ok, good questions. A-2, the second card shows the Deep Water Horizon's effect on sea turtles. The statistics shown are also found in the Gulf of Mexico Restoration Program. These numbers were for sea turtles recovered through November 2, 2010. Of the five sea turtles species found in the Gulf, one is listed as a threatened species, while the other four are listed as endangered species. In a typical year, less than 50 animals are recovered dead. Again, not all the dead sea turtles collected were visibly oiled and it is possible that their deaths were due to other causes. Also not all visibly oiled sea turtles died. Some of the visibly oiled sea turtles were collected alive, cleaned, and released back in the wild. And then the third part here shows the Deep Water Horizon oil spill's effect on marine mammals. These statistics are shown again from the Gulf of Mexico Restoration Program. In total, there are 28 different species of marine mammals in the Gulf of Mexico. All of them are protected under the Marine Mammal Protection Act, including six species of whales that are listed under the endangered species. Now only one of those six species maintains a resident population in the Gulf but the other five migrate through the Gulf at different periods. Once again, not all the dead animals that were collected were visibly oiled. It's possible that their deaths could have been due to other causes. And not all the visibly oiled marine mammals died. Some of them were collected alive, cleaned, and

released back into the wild. The actual number of animals affected by the oil spill is however, probably, higher than what is reported on these cards. Because it's likely that not all the animals injured or killed due to the oil spill were recovered. In the case of the Exxon Valdez oil spill, 37,000 dead birds were recovered but scientists estimated that later that the death toll was 100,000 and 300,000 birds, which was 3 – 8 times higher than the actual number of dead birds that were collected after that spill. In addition to the information on the cards, two species of fish are threatened or endangered; the Gulf Sturgeon and the Small tooth Saw Fish. Another 13 species of fish and sharks are considered species of concern in the region. Adult animals and adult fish might be able to avoid oil but the eggs, larva, and young can be damaged or destroyed by oil. That's something else to keep in mind. Although the long-term effects of the Deep Water Horizon oil spill are not certain, past experiences with oil spills around the world, such as birds reported earlier with the Exxon Valdez oil spill; provides some insight into how oil affects other species. For example, some fish populations negatively impacted by the Exxon Valdez oil spill did not start to decline until 4 – 6 years after the oil spill. So the impacts could be stretched over a long period of time. Just because we don't see impacts right away doesn't mean that there's not going to be longer term impacts. So now, was the information presented on these cards easy to understand?

P: Yeah, very.

M: Was any of the background information that I read to you unclear? Again, I hate to be reading but somebody's going to be reading these to people over the phone or reading it on internet surveys so I have to do this. It's all clear.

P: I think though you really have to have people being really attentive on the phone because a lot of people don't have that attention span to really listen.

M: That's going to be a challenge for us. Of course, we're going to have to see how that goes. And that's why we're doing two different types of sampling to see whether we get different types of results from the two because theoretically they'll be equally random samples. Was there any other background information of the Deep Water Horizon oil spill that you would like to know or would have liked to hear about or was that enough.

P: What about the other animals that none of the other shelters would take in, the squirrels, the possums, the raccoons.

P: Sea cows.

P: Yes.

M: The manatees, I don't know, we'll have to ask if we can have information on that.

P: Because I know there was a lot of stuff on the show (my man watches it all the time) My main Exterminator, where he went out and caught some animals and had to take them miles and miles. I mean he had to take a raccoon like two states away because nobody

would take any of the whatever…scavenger animals, whatever, that nobody was qualified to take care of them. Nobody wanted them and they were covered in oil and dying.

M: That's a good point. We have to take that into consideration.

P: I apologize for my phone ringing, I don't know how to turn it off. I tried to and I apologize.

M: That's ok. Ok, if Americans think it's worthwhile, a new program could be implemented to lessen the impact of the effects of a large oil spill in the Gulf of Mexico similar to the Deep Water Horizon oil spill. A group of university scientists from many states has proposed a program that I'm going to explain to you and ask for feedback. The program would do two things. First, if another large oil spill occurs, it would quickly stop the spill and prevent oil from spreading and causing additional harm to the environment and the overall ecosystem. And second, it would detect oil both on or near the surface and near the sub-surface blooms to help target cleanup efforts and measure the amount and movement of the spilled oil. So Mike has another few cards that he's going to distribute to you that will talk about how the program works.

P: Is that mine too? Sheez, I'm going to put that out here. (Phone)

P: They're determined to call you.

M: I can help you turn the volume down on that a little bit if you want.

P: You know how to turn it off?

M: Sure.

P: My old one, that's what you did, but this is a new one.

M: There you go, it's off. In order to do that, just hold it down and it finally goes off.

P: Thank you.

M: You're welcome. You had to hold it down a long time on that one.

P: I heard that the Coast Guard is taking over?

M: Well, it's a proposed program at this point but that's what we were hoping to get your input on.

P: Who proposed it? Do you know?

M: It's been…I actually don't know who initially proposed it but a group of scientists were called together to try and develop a program. Actually, there were 13 federal agencies

involved in the cleanup. And I suspect that someone, one of those, might have started the discussions and so like I say, we're part of a multi-state team that's looking at some different options here.

P: I certainly hope they learn something from that disaster.

M: Ok, now card B describes how the program will work. This is a brief summary. First, there would be five US Coast Guard ships specially designed to stop oil spills quickly and clean up any spilled oil. The ships would have submersible submarines and robotics aboard specially designed to deal with deep-water oil spills. A lot of the technology would be based on the things that we learned from the Deep Water Horizon here. It would also have highly trained crews to operate the equipment. Card C-1 shows a picture of the type of ship that would be used. The equipment that would be used to stop oil spills like the Deep Water Horizon but would be updated based on what was learned from the spill. And unlike the Deep Water Horizon response, it would be operated by individuals specifically trained to use the equipment. The ships would also carry booms and skimming equipment to clean up any spilled oil. Four ships would be permanently based in the active oil-drilling region in the northern Gulf of Mexico. The remaining ship would be rotated in to allow for routine maintenance so there would be four posted all the time and one would be …would have to be rotated for maintenance purposes. At least one ship would be able to reach any spill in the region within 12 hours.

P: That's one ship.

M: What?

P: If there's one ship, where's it going to be?

M: Well, if there are five ships, four of them active at any point in time. The first one could get there and start the response and then the others would be coming in short order. It's just that they're going to be spread around and one ship is not any further than 12 hours from the active sites. Exactly.

P: Are these ships already built?

M: The ships themselves, they're not equipped. The ships themselves, they'll use a basic Coast Guard design. And they might even convert some existing Coast Guard cutters but I don't think we've gotten to that level of detail yet.

P: Where it says quickly stopped…

M: Mm-hmm.

P: Are you speaking of like the pieces of equipment they used to stop the last one? So they're going to be carrying all this stuff in the water.

M: Each one will carry all of the equipment that they feel they need submersibles, robotics, and submarines to go down and utilize what we learned from Deep Water Horizon to…

P: Wasn't that valve that they had to use about 4 stories tall?

M: That was just the temporary, which was not the cap. They were just trying to capture the oil that was spilling out. This would go right to the source and crimp it off, or cap it off at the source.

P: Ok.

P: They shouldn't be drilling that deep, if you ask me. Because the deeper it is, the harder it will be, there's more pressure down there.

M: A mile deep, there's a tremendous amount of water pressure down there.

P: What are the companies, BP or whoever running those rigs, what are they doing to prevent things from happening to start with.

M: We'll address that here in just a minute.

P: Oh, ok.

M: But that's a relatively good point. Yes.

P: I see that seems to be a very good program because we really need the oil for this economy.

M: Yep.

P: And because we are now completely dependent on it.

M: About a quarter of the oil we have here that's consumed in the US comes out of the Gulf.

P: A lot of it is shipped away.

M: Not all of it. Some of it comes from land-based drilling but an awful lot of it comes in from overseas as well.

P: So is this going to be funded by the government?

M: We'll talk about funding in just a moment. But certainly that's a question that everybody raises. Yes?

P: I'm from Texas and we have a lot of oil. In fact, our relatives have oil on the property but they capped it off. And it's been capped off for years and oil's spilling on the ground.

M: Then it's not capped as well as it ought to be.

P: That's what I'm trying to say. That they have capped many oil wells in Texas there where I'm from…

P: There's the reserve that some states have.

M: There's a lot of oil supplies that are not economically feasible, in terms of the size or the volumes that they can pump or the cost of extracting it. So the idea is that they cap it and then I guess as oil prices rise, they can economically justify going out and capturing that oil.

P: But in the meantime, if that's poured out into the ground what's that doing to the water supply?

M: I would imagine EPA or somebody would have a say on that. You wouldn't think they would want it spilling out on their land. The environmental impacts plus the loss ???

P: Let's get down to the water tables.

M: Yeah, exactly. All right, let me go through a little bit more. The ships would also deploy and monitor oil detection equipment that would be placed every 20 miles throughout the oil-drilling region in the northern Gulf that was on the map, too. The equipment would be able to detect the presence of oil on the surface as well as below the surface, and which would help target cleanup efforts. In addition, the equipment would provide information, which would be both before and after the spill, allowing for an accurate measurement of the spill. The two types of monitoring equipment that are planned for use are shown on card C-2 on your attachment today. There will be profilers more to the bottom that will be permanently be stationed in a given location or a series of location that will continuously take measurements throughout the water column; not just the surface, but all throughout the depth. And they'll transmit the information through satellites for immediate analysis, kind of a preliminary analysis. The second what they call, the Rosette sampler, that's shown in the picture there, can then be deployed to take water samples for additional analysis at any location. And the samples would go through more thorough testing right aboard the Coast Guard ship. So the Coast Guard ships would be moving around and taking the samples and doing the analysis. Lastly, the new program would identify the US Coast Guard as the lead agency in addressing the oil spill monitoring and cleanup in the Gulf of Mexico. This designation would help to reduce the confusion and the delay that followed the Deep Water Horizon oil spill. So now, Mike has a handout for you.

P: So you say, Coast Guard would be responsible.

M: It would be a Coast Guard program. They would be responsible.

P: Is this program in effect now?

M: No.

P: It sounds like a very good program.

M: We're soliciting input on whether or not people think it's a good program.

P: It's good.

P: We should have done it out there ahead of time.

P: Yeah.

M: Well, yeah but given that we didn't, maybe now is the time to be thinking about it.

P: Do you have any idea if the Coast Guard has the manpower, womanpower to do this?

M: They would have to expand their recruiting, I'm sure.

P: Tremendously.

M: And there would have to be some very technical training done because you're not talking about somebody who hauls ropes across the ship.

P: We have an extremely large navy.

P: I know that but the Coast Guard, this is talking Coast Guard and that's different.

P: We'd probably…

P: We borrowed ships from another country, when that happened.

P: But you have to have very highly trained people.

P: I'm sure, yeah.

M: Well, at this point, we realize that we've not covered the effectiveness of the program or the cost of the program or how it will be paid for. We'll talk about that in a couple of minutes. But we'd like for you to answer these questions first, on this handout. Is there anything more you'd like to know about how this program works? If so, what additional information would you want? Just take a moment and fill out that handout for us and we'll collect that. We've tried to be thorough but if we've missed something, let us know.

P: On that monitor, are they going to monitor every second?

M: It wouldn't be every second. With the deep one, the word??? profiler, it would be periodic measurements taken at different depths and then some basic information would

be recorded and transmitted by satellite. And what they would be looking for in this basic data would be any significant change in the makeup. They can't do the detailed analysis but they can do some of the preliminary analyses. And then if they see an anomaly, they see something that looks out of place, the ship goes and they drop the Rosette sampler and that's where they would be able to do the detailed analysis at different depths.

P: You just answered my question.

P: It would have been good if it had been there.

M: When you're done, Mike can pick up your sheets. Any particular discussion about additional information that you want or …we try to be pretty thorough.

P: Would Congress be responsible for funding this?

M: We're going to talk about funding right now. That's the perfect transition. You're giving me perfect transitions on this. I'm sorry; did you have something to say?

P: It should be the companies need to pay…not the government.

M: That's exactly what we're going to talk about. The establishment of this program would clearly be expensive. The initial costs of new monitoring equipment and the five ships and the cleanup equipment would be shared by all taxpayers in the US. After that, it's anticipated that the oil companies would be required by law to pay higher lease fees for their drilling operations to fund the ongoing operating costs of the system for 10 years. The cost to you would be a onetime federal income tax payment. After 10 years, the program would be evaluated to determine if it should be continued. Now Mike's got another little card, he's going to hand you out there. And it summarizes what I just talked about here.

P: I guess so many things have made it to Congress.

M: No ma'am, it has not. We note on this handout that the Oil Pollution Act of 1990 requires companies that are found negligent in a spill to pay for all cleanup and restoration activities. That would not change under this program. Responsible parties would still pay for the cleanup. But this program would sort of provide an insurance policy of the chance of major damages by another large oil spill for at least the first 10 years of the program. And it would be independent of any regulatory changes that might happen as a result of the Deep Water Horizon. There's going to be a lot of, possibly a lot of regulatory changes as a result of this. This program would not provide additional prevention directly or prevent damage from a spill anywhere else in the United States or in international waters, because the equipment required for response ships would only be implemented in the Gulf of Mexico drilling region. This insurance policy would therefore work indirectly to prevent damages from another large oil spill that might occur in the Gulf of Mexico since deep water drilling has resumed. So you see the points there. One-time federal income tax payment where oil companies in the Gulf would be expected to make payments for the ongoing operating

costs. After 10 years, we would re-evaluate the program and see how it's operating. And this would not change the responsibility of the oil company under the Oil Pollution Act of 1990 that requires them to provide for the cost, for the reparation of the cleanup costs. But this program provides an insurance policy of sorts.

P: So this is the state's program not a federal?

M: It's a federal program, everyone in the United States would have to have a charge.

P: What do we do with the fines that we've levied against these corporations?

M: I don't know.

P: You know with that money, maybe we could use to do this.

M: The fines, I know, a lot of the funds that the oil companies, like BP, in this particular case is going to be used for paying for cleanup. I don't know what the fines are, number one.

P: That would be interesting to find out how we can dip into the fines and help offset some of these costs. Because I can't imagine everyone wanting to pay for this for the Gulf.

M: One of the issues that come up in most of these sessions and a very large proportion of the seafood that we consume in the United States comes from the Gulf. So there would be a promotional, probably not the right word, but there would have to be an informational program undertaken to explain to someone from Wyoming why it would be in their best interest to maintain the Gulf of Mexico. I mean not just because of their food supply. It's an important part of the natural resource base that's the United States. But there would definitely have to be an informational campaign to convince the people in Wyoming that they want to do this.

P: And is there an idea of the amount of the one- time tax would be.

M: We're going to talk about that in a minute. You guys are just right on the ball here.

P: The high cost of gasoline should pay for it.

M: Well, that's another way of implementing it. What we're looking at it is if people would be willing to pay a one-time charge. Did you have something you wanted to say?

P: Oh he kind of got what I wanted to say.

M: Ok.

P: People in other states wouldn't but you're said something about fish and all.

M: Well, that's certainly one of the arguments and then there's the argument that the pristine and healthy Gulf environment has benefits not just to people from the Gulf area. A lot of people come down and fish and boat and go to the beach and enjoy the various aspects of the Gulf.

P: Redneck Riviera.

M: Ok, at this time, we interviewed people just like you and asked how they would vote on this program if it were put on a national election ballet. The next national election ballet would be November 2012. There are reasons why you might vote for setting up this program and reasons why you might vote against it. And Mike's going to hand out another card now and gives just a few of the reasons why you might support something like this and why you might not think it's worthwhile. And they're all legitimate concerns, one way or another. When you look at this list on Card E, if there's other reasons, either to vote for or not to support a program like this; if you have other ideas, sketch them down on this little card and then we'll discuss them. So if you can think of other reasons for or against them for this program, just sketch them down. And Michael will collect that card from you.

P: Are we signing this?

M: No. I don't want your names on any of this, just turn it in. It's your anonymous input. Ok. And as soon as Mike's done with that, he's going to give you another handout. We're trying to get information into your hands and get information back from you. We really appreciate it.

P: Hey, this is great. What a super educated session, we're being educated tonight. I think it should be up to the congressman to hold meetings that we can go to but at least they'd send out information.

M: Absolutely, absolutely.

P: It's the education part that is the most important part.

M: That's very correct. That's what we're trying to do.

P: I fully agree with what you just said but I used to live in Virginia for 30-something years, taught school there and everything. And I see a tremendous in the education level up there as opposed to here. And I just think it would be very difficult in a lot of areas in the south, especially to get people to say, ok, I want to add an extra $50 a month income tax. Because they already think that where's my money go and they don't understand the ramifications of why we're doing it.

P: That's one of the benefits of being a citizen of this country.

P: That's right.

P: Look, I can't see the Gulf of Mexico from their house.

P: There is a disconnect, there's no doubt.

P: We've become selfish.

M: Well, this is getting into the education end, some of the educational information that would have to be implemented. Scientists believe that implementing the program would significantly reduce the impacts on the environment following another large oil spill similar to the Deep Water Horizon. The card that you just got shows some of the environmental impacts that were observed after the Deep Water Horizon oil spill which we've kind of gone through already. The top statistics up there, oiled coastal areas, birds, sea turtles, and dolphins killed. If the program would have been active, the program that we're talking about tonight. If it would have been active for the Deep Water Horizon oil spill, it's estimated that oil spill impacts would have been reduced by 80% due to the rapid detection and response at sea. So had the program been active at the time of the Deep Water Horizon oil spill, scientists estimate that a 1,000 miles of shoreline would have been saved from being oiled. Some, and these are just estimates; 5,000 birds, 500 sea turtles and 85 dolphins would have been saved by a rapid implementation of this system. Now the number of most species that it would protect is small in comparison to their total numbers throughout the Gulf with the exception of the endangered species, that is the sea turtles, the sperm whales, the Gulf Sturgeon, and the Small tooth saw fish. Ok, at this point, Mike's going to give another handout. And at this point we're going to ask you to consider whether you would vote for this program on the federal ballot. Please remember that there are valid reasons to vote both for and against this program. And if the program was passed by a majority vote in the next federal election which would be November 2012, you'd pay for the program through a one- time federal income tax payment in early 2013 and the amount being proposed here is $75 dollars.

P: OK.

P: That's not bad at all.

P: I'll do it.

P: Where do I sign?

M: What we want you to do is say whether you'd vote for or against it and we'd like you to sketch a little something. What is it that made you vote either for or against the program? Or if you're not sure, that's a valid position too. On the bottom half, on the first page. Once you've answered the first page, you can go on to the next page. Based on your answers on the first page, there's some other questions that we'd like you to answer.

P: Can you explain this question to me? It's got to affect people somehow, some way.

M: If you have questions, we wrestle with that one. Right your question unclear or something like that.

P: Ok.

M: Rather than me guiding your response to it, sketch a note by it, if you would.

P: Ok.

M: This is all part of what helps us refine this document, the survey.

P: I think that pictures of the oil is crazy, birds…

M: We're closing in on the end here, folks.

P: Have you ever gotten a by-pass? Well they're going in on an angle to connect.

M: Yeah, that was part of the permanent kill in September.

P: That's ??? can I go?

M: I don't think so.

M: Shortly.

P: Aren't they still getting some kind of plume out of that?

P: Yes they are.

M: It's still there, I think they're still monitoring it. I have not heard that they have had any more problems but they're still…the question is, are there still plumes out there. And we really don't know.

P: They show Alaska under all that sand. Wasn't there another one that they were having a problem with that was close to the shore?

M: There was some oil that washed up about two weeks ago on the shore of Louisiana but I haven't heard the results of that.

P: If you dig deeper than six hundred feet…

P: ??? so we wouldn't have to wait so long to ??? They had a point that they couldn't make it fit and if someone invented something to make it easy ???

M: There's lots of potential regulatory and I'm going to hold off on that and I'll talk about it at the very end. We're almost wrapped up now. Ok, now what I'd like to do is consider

some of the information presented to you earlier and ask a few questions regarding how you felt about it? So Mike's going to hand out another handout. I'm sorry to do this to you, we only have two more, three more.

M: Two more.

M: But this really helps us when we go through and we compile this information. So there's a series of questions on this handout number seven. You feel like students taking the FCAT or something.

P: Yeah. I'm glad I don't have to take that, I'd flunk.

M: Me either, I wouldn't want to take it.

P: I was grading that for a while.

M: That's got to be challenging.

P: Yeah, you can hardly read some of the writing.

P: It doesn't matter. Half the kids who fail them get graded on a curve anyway.

P: No Child Left Behind.

P: That's exactly it.

P: There you go.

P: Not for any reason.

P: I'm telling you, my daughter has failed the FCAT for 3 years in a row. I have fought the entire Duval county school board system. I have hired attorneys. She makes D's and F's all year and makes a 2 instead of a 3 on the FCAT and they continue to pass her. She's in 10th grade and has no business being in 10th grade.

P: Well, it depends on where the school's at.

P: I've held that and it doesn't do any good and they pass her anyway.

P: And she knows it.

P: Yeah.

P: So no matter how much I fight with her.

P: She knows she's smarter.

P: No matter how much I ground her, it doesn't matter, because Duval County says I can't hold her back. They passed her.

P: You don't fit the seat any more, they've got to pass you.

P: Yep.

P: And they put all the problem students in one class. I feel sorry for that teacher because now…

P: Well, you can get a voucher and go to a private school.

P: They're getting paid for grades that come out.

P: It's impossible to get past that.

M: If you kind of go through these questions on handout seven.

P: On C-2, I'm concerned. If this program is not implemented now where …

M: We're talking about the harm from future oil spills. Do you think the amount of harm from future oil spills would be not serious.

P: If we had the information is it implemented or not implemented.

M: Not implemented. That's good.

P: Are you all going to try to pass it every year through the income tax?

M: One time. It would be a one-time thing and then 10 years from now, they would re-evaluate it.

P: I see.

P: Would you pay again?

M: The way it's structured the cost that the tax payers are paying is to help establish the program. So the way we're envisioning it, the operating costs are going to be funded by the oil companies, so it's a one- time thing.

P: So the question in C-2 is if this isn't passed, if it is passed…

M: If it's not passed, what do you think the extent the harm from future oil spills would be.

P: If it's not?

M: If it's not passed. It's a good point; we've got to make that clear.

P: ??? Are we supposed to hand them in???

M: Let's say pretty sure, it's usually important.

P: ???

M: I don't know if there's any restrictions, I assume ??? the folks out in California???

P: I think so ???

M: ???

M: ??? Unfortunately, kids are a disaster. It forces us to meet that???

P: What's going to happen?

(PRIVATE CONVERSATION)

P: Alternate sources.

M: We really appreciate your input and your questions because we work on these and we work on these. Every one of these sessions are things that we need to clarify more. It's a big help to us. It's a confusing question, C-2, the words we want. So we have to go back and massage that again to make the words clear. Thanks again, I've commented to a few folks. Thank you for the input because it really helps us to get our questions clarified. I guess that the question I'd like to ask now is that did the descriptions, I've given you tend to push you one way or another or did it seem well balanced?

P: I like the balance.

P: It was well balanced.

P: Yeah.

M: All right, that's good, that's what we're trying to get at. We don't want to push people either for or against.

P: I didn't think about it in those terms until you educated us. So that might be a push for me, but nobody pushes me to make up my mind. But education does help you.

M: Information definitely helps you.

P: Can I ask, why through all this, you never talked about alternate energy sources? Is that just not really part of this?

M: We're really trying to focus on environmental impacts and what we're trying to get at is; there's a methodology out there called willingness to pay. And people can say, yes I think the environment is important but maybe $75 is a reasonable figure. Would $275 be reasonable, I mean there's a whole methodology of trying to hone in on what people would think would be a reasonable amount to pay. And it's a way of measuring the value people place on it. So it's an economic methodology that we utilize to see what people would pay.

P: You have choices right there. I have a question.

M: Sorry, go ahead.

P: Would individual be based for the family?

M: It would be for the family and again this is just trying to get a value on the environmental aspects of … so it's a challenge for us to come up with focusing in on the information, but we're giving it our best shot. Mike has one other handout. This is just kind of a quick survey of your recreational activities. So this is a pretty quick one to go through. We're almost done. So you can run through this one pretty quick. Mike will collect them when you're done.

P: Ok, the question is do you currently live within 10 miles of the coast?

M: You all up here don't.

P: Ok, I live in Middleburg.

M: We've got to ask that question because what we're trying to get at is to consolidate the results from this survey in this session and then we'll see if there's a significantly different response to people that live within 10 miles of the Gulf versus people that don't live by the Gulf.

P: See if there's a difference between people from the east and the west.

M: Yeah we'll see if there's a difference between responses from Jacksonville, Miami, Cocoa, Orlando, than there are from Tamp and Pensacola. So that's why it's a dumb question since you all are obviously within 10 or 15 miles from here.

P: We don't have to worry about oil spills in the east coast because ???

M: Well except for one of the challenges issues is if that oil would have gotten, if a hurricane had gotten in the Gulfstream and made it through the Straits of Florida …

P: It would not be pretty.

P: ??? hurricanes.

M: As many of them as they are, I mean they should when Katrina went through. Yeah, there really wasn't much because they shut them down. When a hurricane's coming, they completely shut the rigs down.

P: they leave the rigs and go mainland.

M: Yes, they do and they keep a quarter there.

P: A small crew.

M: The drilling is shut down and the pumping is shut down and so the fact that we haven't had much damage from hurricanes suggests that whatever precautions they're using would seem to be effective.

P: ???

P: Rigs???

P: That was good, but it was some pretty strong wind.

M: Ok, now we have one last handout for the interview. Earlier we asked you to vote (Some haven't completed last handout) I'm sorry I didn't mean to rush you.

P: ??? they fly away.

P: My brother has a beach house just south of Marine land and he was really sweating that out, if it was going to get in the Gulf Stream. They did get some oil but it wasn't from that.

M: Well, earlier we asked you to vote whether or not you would vote for this, and then we actually had some further discussion and we looked at some information. Now we want you once again to vote. Maybe your vote might have changed based on the additional information that was presented. No trickery here, we're just trying to see if presentation of additional information influences decisions one way or the other. And then they're three quick questions here.

P: Do you want work from 2009 or 2010?

M: Just write that down there. All right, ladies and gentlemen, that's it. We're done, I want to thank you all very much. This has been hugely helpful. It really is beneficial for us to get your input. We thank you. The input you provide us will make another survey instrument. If you catch Mike before you leave, he will have something for you that I think you will appreciate, the compensation.

Tape off.

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