

# **Economic Analysis of Working Waterfronts in the United States**

**Draft Technical Report to U.S. Economic Development Administration for  
Sponsored Project Number 99-07-13873: Creating Community and Economic  
Development Tools for Preserving Working Waterfronts and Waterways**

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**August 15, 2013**

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## Executive Summary

Waterfront communities in the United States, whether rural or urban, recreational or industrialized, have been subject to economic, technological, ecological, and demographic changes that challenge their continued existence or development. The purpose of this study is to document the current status, contribution to regional economies, and future prospects of U.S. coastal communities in order help promote their long-term economic prosperity. A review of the relevant literature on economic valuation of waterfront and ocean-related economic activities found that previous studies usually evaluated only one particular economic sector or specific region. The present study attempts to provide a comprehensive evaluation of all ocean-related economic activity for all coastal regions of the United States.

A commonly accepted definition of ocean-related economic activity was adopted for this analysis based on specific industry sectors (NAICS codes) developed under the National Ocean Economics Program<sup>1</sup>. This classification scheme includes six major industry groups: marine construction, marine living resources (fishing, aquaculture, seafood processing), offshore minerals (oil and gas production, sand and gravel mining), ship and boat building/repair, coastal tourism/recreation (boat dealers, marinas, waterfront hotels, restaurants, tours, marine parks, etc.), and marine transportation (ports, shipping, warehousing, passenger transportation) ([Table 1](#)). Data on economic activity in these sectors were compiled for the period 1990-2010, including information on employment, wages and value added or contribution to Gross Domestic Product (GDP)<sup>2</sup>. In addition, data were gathered on specific high profile industries such as commercial fishing, port shipping, and passenger cruise ships.

Coastal regions of the U.S. were defined for this analysis to include counties within 50 miles of the coastline or counties located in coastal zones as established by the Coastal Zone Management Act ([Figures B1-B11](#)). The 11 coastal regions and the states included in each were: North Atlantic (ME, NH, MA, RI, CT, NY), Middle Atlantic (NJ, DE, PA, VA), South Atlantic (NC, SC, GA, FL), Eastern Gulf of Mexico (FL, GA, AL, MS), Western Gulf of Mexico (LA, TX), Eastern Great Lakes (NY, PA, OH, MI), Western Great Lakes (MN, WI, MI, IL, IN), Pacific Northwest (OR, WA), and, California, Alaska and Hawaii (Pacific) ([Figure 1, Table 2](#)). Ocean-related economic activity was inventoried for over 440 coastal zone counties in 30 states within these regions.

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<sup>1</sup> See: [www.oceaneconomics.org/](http://www.oceaneconomics.org/)

<sup>2</sup> The use of GDP here is defined as the measure of total value-added economic activity for any geographic area, i.e., county, state, region, or nation.

Total economic contributions of ocean-related activity were evaluated using IMPLAN® (IMPact analysis for PLANning) regional economic multipliers that capture the secondary effects of supply chain activity or input purchases (indirect effects) and respending of income by employees, business owners and governments (induced effects) arising from new final demand (Table 3). Changes in ocean related GDP over the period 1990-2009 were analyzed to determine significant trends for major industry groups within each coastal county, and to forecast associated economic activity to the year 2020.

In 2009, all coastal regions of the U.S. had over 130,000 ocean-related business establishments, with 2.398 million fulltime and part-time employees, who received \$84.25 billion in wages and benefits, and produced \$217.87 billion in Gross Domestic Product. Nationally, ocean-related wages averaged around \$35,127 per job annually. The western Gulf of Mexico region led the nation in ocean-related GDP (\$83.47 billion) and wages (\$19.93 billion) primarily due to its off-shore minerals sectors, while the North Atlantic region was home to the largest ocean-related employment (439,633 jobs) and number of establishments (30,955) due primarily to tourism and recreation (Table 4, Tables A1-A2, Figures 2-19).

In terms of its relative importance to the overall economy, ocean-related sectors in all coastal regions of the U.S. represented 3.37 percent of total GDP and 4.81 percent of total employment. The states with the largest share of ocean-related activity were Alaska (18%), Texas (18%) and Louisiana (17.2%), primarily due to the presence of large offshore oil and gas production. In a second tier of states, including Alabama, Hawaii, South Carolina, Maine, and Georgia, ocean-related activities represented between four and eight percent of GDP, reflecting mainly tourism and recreation as the dominant ocean industries. The states with the highest share of total employment (more than 12 percent) in ocean-related industries in coastal counties include Hawaii, South Carolina, and Alaska. A second tier of states with between 8 and 12 percent ocean sector jobs includes Louisiana, North Carolina, Maine, Georgia, Mississippi, South Carolina and Alabama. More than half of ocean-related jobs in these states came from the relatively labor-intensive tourism and recreation industries. In some individual coastal counties, especially in the western Gulf of Mexico region and Alaska, ocean-related sectors represented over 50 percent of total GDP and employment, although some of these counties were relatively small, with total GDP of less than \$1 billion (Table 5, Figures 20-39).

The total economic contributions of ocean industries in all U.S. coastal counties in 2009, including regional multiplier effects estimated with the *IMPLAN* regional economic models, were 6.74 million jobs, \$283.5 billion in wages, and \$643.9 billion in value-added or GDP. These total contributions for the ocean economy represented 2.81 to 3.37 times the direct contributions, indicating strong economic linkages in the respective regional economies. The western Gulf of Mexico, California, and North Atlantic regions experienced the largest value-added or GDP contributions from their ocean economies. The top five states

for ocean-related GDP contributions were Texas (\$155 billion), California (\$115 billion), Florida (\$64 billion), New York (\$59 billion), and Louisiana (\$36 billion). In terms of ocean-related employment contributions, the largest state was California (1,340,131 jobs), followed by Florida (914,482 jobs), Texas (817,556 jobs), New York (622,057 jobs) and New Jersey (289,698 jobs). The largest individual counties for total GDP contributions were Harris County (Houston), Texas (\$140 billion), New York, New York (\$38.4 billion), and Los Angeles, California (\$37.6 billion). Among the top 50 counties in terms of in total GDP contribution, the middle Atlantic region had 12 counties, while the western Gulf of Mexico and California Pacific coasts each had nine counties ([Tables 6-8, Table A3](#)).

Approximately one-fourth of the county-level ocean-related industry sectors analyzed had statistically significant trends in GDP, either positive (increasing) or negative (decreasing), over the period 1990-2009, with 70 percent of these changes being of 50 percent or greater in magnitude. The states with the largest number of positive net changes in GDP across all ocean-related sectors were Massachusetts, Maryland, Florida (Gulf coast), Texas, California, and Washington, while states with the largest negative net changes were Pennsylvania, Florida (Atlantic coast), Alaska, and Michigan. The sector with the most positive changes in GDP was tourism/recreation, with 155 counties experiencing a significant increase, and 41 counties with a decrease. The Living Resources sector had the most negative changes: 60 counties decreased and 12 counties increased. Most of the 50 county-level economic sectors with the largest decreases in economic activity over the past 20 years are predicted to disappear by the year 2020 ([Tables 9-13, Table A4](#)).

Marine cargo shipping remains one of the largest water-dependent activities in the U.S. The total tonnage of marine port shipments for all waterfront counties in the United States increased from about 1.16 billion tons in 1997 to almost 1.51 billion tons in 2010, or about 30 percent, and is forecast to increase to over 1.89 billion tons in 2020. The total value of marine port shipments in all U.S. waterfront counties increased from \$961 billion in 1997 to \$1,640 billion in 2010 (+71%), and is forecast to be \$2,364 billion in 2020. The Western Gulf of Mexico region had the highest total weight of shipments in 2010 (645 million tons), followed by the Middle Atlantic region (\$228 million tons) and California (217 million Tons). California had the highest marine port shipments value in 2010 (\$461 billion), followed by the Western Gulf of Mexico (\$368 billion), Middle Atlantic (\$302 billion), and South Atlantic (\$239 billion) regions. The Pacific-California region had the greatest increase in tonnage from 1997 to 2010 (96%), followed by the South-Atlantic (63%) and Middle-Atlantic (42%) regions. The Pacific-Alaska region showed the greatest decrease in total shipping weight (-43%) followed by the Eastern- and Western-Great Lakes (-23, -19 percent), and North-Atlantic (-18%). The value of marine shipments increased in all regions from 1997 to 2010, except for the Eastern Great Lakes (-20%) ([Tables 14-15](#)).

Commercial fishing is an economic activity traditionally associated with working waterfront communities; however, the sustainability of commercial fishing is threatened in many areas of the U.S. The total landings in 2010 by commercial fisheries in the United States was 4.5 billion pounds with a value of \$2.70 billion. This represented a decrease of 17 percent and 18 percent, respectively, since 1990 in inflation adjusted dollars. The Alaska-Pacific region had the highest fishery landings in 2010, both in weight (1.76 billion pounds) and value (\$907 million). The regions with the next highest landed weights were the Western Gulf of Mexico (769 million lbs.), Middle-Atlantic (556 million lbs.), California (414 million lbs.), North-Atlantic (392 million lbs.), and Pacific–Northwest (368 million lbs.), while regions with the next highest landed values were North-Atlantic (\$563 million), Middle-Atlantic (\$269 million), Pacific-Northwest (\$276 million), Western-Gulf of Mexico (\$249 million), Eastern-Gulf of Mexico (\$150 million), and California (\$140 million). Sixteen counties in the U.S. landed over 100 million pounds of fish each in 2010. The counties with the largest fisheries landings in terms of value were Bristol County, Massachusetts (\$306 million), Aleutians West, Alaska (\$163 million), Kenai Peninsula, Alaska (\$150 million), Kodiak Island, Alaska (\$128 million), Bristol Bay, Alaska (\$101 million), Valdez-Cordova, Alaska (\$84 million), and Cape May, New Jersey (\$81 million). Oregon, Washington and Alaska were the only states to experience an increase in landed weight from 1990 to 2010 (+51%, +38%, +28%, respectively). The South-Atlantic region suffered the greatest decrease in landed weight (-63%), followed by the Eastern Gulf of Mexico (-57%), Pacific-California (-44%), Middle-Atlantic (-37%), Western Gulf of Mexico (-29%), and the North-Atlantic (-29%). States with a significant increase in the value of fishery landings from 1990 to 2010 were Maine (40%), New Jersey (31%), Florida-Gulf (30%), and Washington (25%); while Texas suffered the largest decrease (-76%), followed by Rhode Island (-72%), California (-63%), Mississippi (-62%), Alabama (-44%), Louisiana (-42%), and Maryland (-35%) ([Tables 16-17](#)).

Ocean-going cruise ships have become one of the premier venues for coastal tourism and recreation. Cruise ships calling at U.S. ports reported a total of 49.1 million passenger-nights in 2011; however, this represents a decrease of 12 percent from a total passenger volume of 55.6 million in 2004. There were 22 ports hosting active cruise lines in 2011, including 13 with annual volumes of at least one million passenger-nights. The top three cruise ports were in Florida: Ft. Lauderdale, Miami, and Port Canaveral (Brevard County), with passenger volumes of 10.2, 7.7, and 5.3 million, respectively. Other top ports were New York City (3.5 million), Los Angeles, California (3.2 million), Seattle, Washington (3.2 million), Anchorage, Alaska (2.1 million), Galveston, Texas (2.0 million), Tampa, Florida (1.8 million), New Orleans, Louisiana (1.5 million), Baltimore, Maryland (1.4 million), Hudson, New Jersey (1.3 million), and San Diego, California (1.1 million). Ports with the largest increase in cruise passenger volume during 2004-11 were Hudson, New Jersey (+102%), Baltimore (+65%), Seattle (+57%), Ft. Lauderdale (+8%), and New York City (+5%), while ports with decreased volume were Honolulu (-52%), New Orleans (-39%), San Diego (-32%), Galveston (-

29%), Tampa (-29%), Los Angeles (-28%), Anchorage (27%), Miami (-21%), and Port Canaveral, Florida (-14%). Based on regression analysis, two ports are forecast to have significantly increased activity into the future (Seattle, Washington and Hudson, New Jersey), while three ports were forecast to have lower volume (Tampa, Florida, Mobile, Alabama, and Charleston, South Carolina) (Table 18).