Estimated
AGRICULTURAL LOSSES
Resulting from
HURRICANE DEBBY

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INTRODUCTION

Hurricane Debby made landfall as a Category 1 hurricane near Steinhatchee, FL (Taylor County) on August 5, 2024, moving northeast across the southwestern peninsula and north central Florida before crossing into southeast Georgia and impacting several additional states within the southeastern United States. Hurricane conditions of Hurricane Debby impacted four counties in Florida: Suwannee, Taylor, Lafayette, and Dixie. A larger swath of the Florida peninsula experienced tropical storm force winds, which extended as far south as Lee County. Northern Florida, especially Suwannee County, received over 15 inches of rain, with additional heavy precipitation reported in the Tampa Bay area. Flooding from the storm, driven by both rainfall and storm surge (exceeding 12 feet in some coastal areas), was most severe along the western coast and in west-central Florida.

Agricultural producers in Florida experienced both losses (changes in economic flows) and damages (changes in economic stocks) as a result of the weather conditions associated with Hurricane Debby. The University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) Economic Impact Analysis Program (EIAP) distributed a survey (UFIRB ET00041674) titled "Assessment of Losses and Damages to Florida Agriculture from Hurricane Debby" on August 6, 2024 to begin assessing losses and damages associated with Hurricane Debby. A report was released by the UF/IFAS EIAP on September 19, 2024 summarizing preliminary findings on statewide agricultural production losses in Florida for the calendar year 2024 (or marketing year 2024-2025) due to Hurricane Debby (Court et al., 2024a,b). Within the preliminary report, estimated losses ranged from $93.7 million to $263.2 million, with the most significant impacts observed in Animals and Animal Products, Vegetables, Melons, and Potatoes, and Greenhouse/Nursery sectors. Survey respondents also reported damage to infrastructure (e.g., barns, fences, equipment), stored inputs (e.g., feed, fertilizer), and harvested products (e.g., hay, shellfish).

Following continued efforts on data collection and refined analysis, this final report presents a comprehensive assessment of agricultural production losses in Florida at both the state and county levels for specific agricultural commodity groups due to Hurricane Debby. It updates the preliminary estimates with finalized loss values, offering a more accurate and complete picture of Hurricane Debby's impact on Florida's agricultural sector. While this will be the final report associated with rapid assessment for this event, data will continue to be collected via the Assessment of Losses and Damages to Florida Agriculture from Hazard/Disaster Events tool through marketing season 2024-2025 to be used in broader studies of the agricultural impacts of these types of events as well as to inform assessments of future events.

UPDATED EVENT DATA

The wind swath of Hurricane Debby, shown as Figure 1, has been updated using the latest data from the National Oceanic and Atmospheric Administration (NOAA) National Hurricane Center (NHC), which was revised after the release of the UF/IFAS EIAP preliminary report on Hurricane Debby (Court et al., 2024a,b). While the updated wind swath does not differ significantly from the version previously presented, it reflects the most current data available. Hurricane conditions impacted four counties in Florida: Suwannee, Taylor, Lafayette, and Dixie. A larger swath of the Florida peninsula experienced tropical storm force winds, which extended as far south as Collier County. Event-specific data for 7-day cumulative precipitation (08/02–08/08, 2024) from NOAA's National Weather Service (NWS), and estimated flood inundation depths from the Pacific Northwest National Laboratory's Rapid Infrastructure Flooding Tool, have not changed since the preliminary report. To avoid redundancy, these maps and analyses are not repeated here.

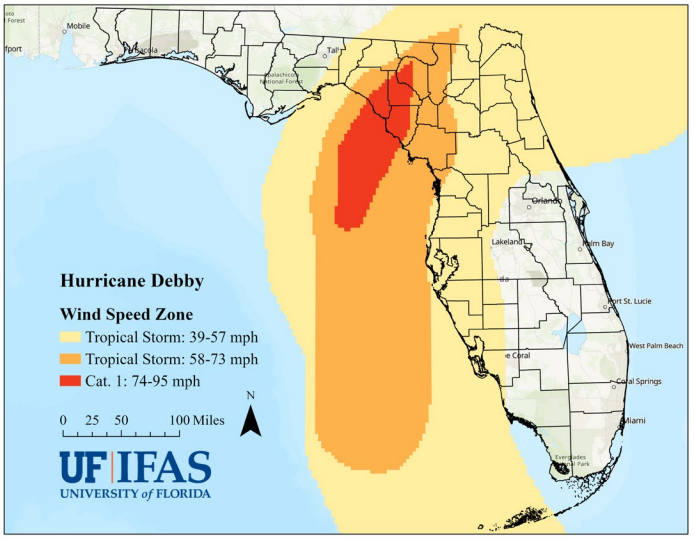

Figure 1. *Updated wind swath pattern of Hurricane Debby as it impacted Florida.*

Source: Geospatial data on the wind swath of Hurricane Debby are derived from NOAA NHC (https://www.nhc.noaa.gov/gis/. Retrieved on 04/01/2025).

IMPACTED AGRICULTURAL LANDS

Using geographic information systems (GIS) software (ArcGIS Pro), the hurricane wind swath, cumulative precipitation, and flood depth map shapefiles were overlaid on a geospatial database of agricultural lands in Florida to determine the wind, rainfall, and flooding intensity experienced by each affected agricultural parcel. The geospatial database of agricultural lands in Florida is the Florida Statewide Agricultural Irrigation Demand (FSAID) Agricultural Lands Geodatabase (ALG) developed by the Florida Department of Agriculture and Consumer Services (FDACS). The Hurricane Composite Intensity Index (HCII), calculated as the sum of the intensity indices of wind, rainfall, and flooding, was computed for each affected agricultural parcel, as shown in Figure 2. The methodology used to quantify the HCII is the same as what was described in the preliminary report (Court et al., 2024a). Definitions for each intensity index are provided in Table 1. Due to the update in wind swath data, parcel-level HCII values differ slightly from those presented in the preliminary report. Table 2 summarizes the revised impacted acreage of agricultural lands by commodity group and HCII level across Florida.

Table 1. *Definition of intensity indices for wind, rainfall, and flooding associated with tropical cyclone events, which are components of the UF/IFAS EIAP's Hurricane Composite Intensity Index (HCII).*

Intensity Index	Wind Speed (mph)	Precipitation (inches)	Flood Depth (ft)
1	TS1: 39-57	3-6	› 0-1
2	TS2: 58-73	6-9	1-2
3	Cat. 1: 74-95	9-12	2-4
4	Cat. 2: 96-110	12-15	4-6
5	Cat. 3: 111-129	15-18	6-8
6	Cat. 4 & up: › 130	› 18	› 8

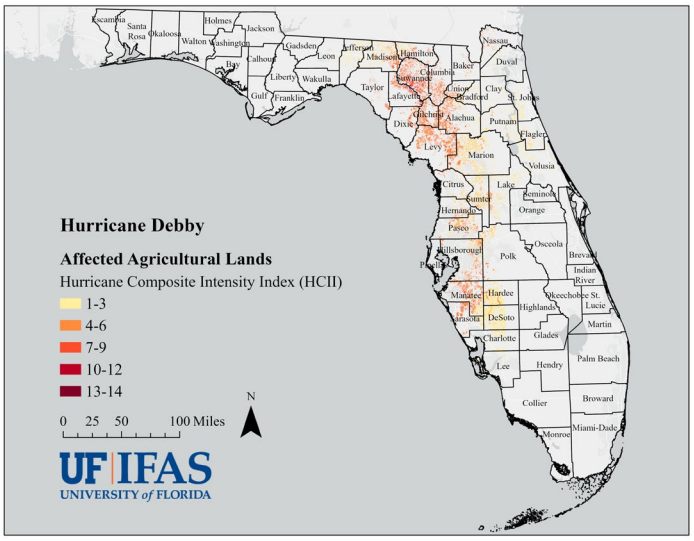

Figure 2. *Hurricane Composite Intensity Index (HCII) level of impacted agricultural lands in Florida for Hurricane Debby.*

Source: The agricultural lands geospatial data are from the Florida Statewide Agricultural Irrigation Demand (FSAID) Agricultural Lands Geodatabase (ALG) developed by the Florida Department of Agriculture and Consumer Services (FDACS) (https://www.fdacs.gov/Agriculture-Industry/Water/Agricultural-Water-Supply-Planning).

Table 2. *Estimated acreage of impacted agricultural lands by commodity group and HCII level for Hurricane Debby.*

Commodity Group	Hurricane Composite Intensity Index (HCII)					Total
	1-3	4-6	7-9	10-12	13-15	
Animals and Animal Products[1]	852,522	644,413	145,379	25,584	1,048	**1,668,946**
Field and Row Crops[2]	103,395	193,457	67,673	15,361	1,347	**381,232**
Citrus[3]	58,504	29,254	4,816	592	<100	**93,167**
Vegetables, Melons, and Potatoes	21,905	38,654	4,722	746	<100	**66,033**
Greenhouse/Nursery	19,648	8,826	1,291	288	<100	**30,073**
Fruit and Tree Nuts[4]	3,267	2,363	706	243	<100	**6,600**
Total	**1,059,242**	**916,968**	**224,587**	**42,814**	**2,442**	**2,246,052**

Notes: [1] Animals and Animal Products acreage includes grazing land. [2] Field and Row Crops acreage includes field crops, hay, and sugarcane. The acreage of cotton is adjusted with the county level harvested acres of cotton from USDA 2022 Census data. [3] Citrus acreage includes non-bearing acreage and was adjusted to reflect the 2024 Commercial Citrus Inventory Preliminary Report from USDA-NASS. [4] The acreage of pecan in the Fruit or Nut Crops group is adjusted with the county level bearing and non-bearing acres of pecan from USDA 2022 Census data. Acreages less than 100 are represented as '<100' in the table.

Over 2.2 million acres of agricultural lands were affected by Hurricane Debby, of which over 69% was grazing land. Across all commodity groups, around 47.2% of impacted acreage experienced low-intensity weather conditions (HCII levels 1-3), 50.8% of impacted acreage experienced moderate-intensity weather conditions (HCII levels 4-9), and only 2.0% of impacted acreage experienced high-intensity weather conditions (HCII levels 10-15). The commodity groups that were most affected (in terms of overall acreage impacted) by Hurricane Debby (not including grazing land) were Field and Row Crops (including hay and sugarcane, 381,232 acres), Animals and Animal Products (112,620 acres), Citrus (93,167 acres), and Vegetables, Melons, and Potatoes (66,033 acres).

County-level impacted acreage of agricultural lands by commodity group are shown in Table A-1 in the appendix. Information on the percentage of agricultural lands affected in each county of Florida are shown in Table A-2. Twenty-eight (28) of the 42 affected counties had 100% of their agricultural lands affected.

Table 3 shows the estimated annual value of production on the affected acreage areas by commodity group and HCII level. County-level estimates of annual value of production by commodity group and HCII level are shown in Table A-3. The data sources and methodology for estimating the annual value of production on the affected lands did not change between the preliminary and final report (Court et al., 2024a).

Table 3. *Estimated value of annual production (2024$, Thousands) on impacted acreage by commodity group and HCII level.*

Commodity Group	Hurricane Composite Intensity Index (HCII)					Total
	1-3	4-6	7-9	10-12	13-15	
Animals and Animal Products	$393,451	$485,206	$164,891	$48,508	$3,255	**$1,095,312**
Vegetables, Melons, and Potatoes	$248,611	$493,467	$53,854	$10,546	<$100	**$806,530**
Greenhouse/Nursery	$520,784	$243,164	$20,742	$2,756	$109	**$787,556**
Field and Row Crops	$75,948	$143,224	$50,294	$11,347	$1,051	**$281,863**
Citrus	$116,176	$58,091	$9,563	$1,176	<$100	**$185,008**
Fruit and Tree Nuts	$33,156	$24,371	$7,316	$2,513	$209	**$67,566**
Total	**$1,388,125**	**$1,447,523**	**$306,660**	**$76,847**	**$4,680**	**$3,223,835**

Note: Values less than $100K are represented as '<$100' in the table.

Hurricane Debby impacted agricultural lands that produce over $3 billion of agricultural products (crops, livestock, aquaculture, etc.) throughout a calendar or marketing year, some across multiple growing seasons (e.g., Vegetables, Melons, and Potatoes) and others that might produce year-round (e.g., Greenhouse/Nursery, Animals and Animal Products). Considering impacts of all intensities, the commodity groups that were most affected in terms of "annual value at risk" by Hurricane Debby include Animals and Animal Products, Vegetables, Melons, and Potatoes, and Greenhouse/Nursery. A majority, 97.5%, of the estimated value of annual production across all commodities, was impacted by low-intensity conditions (HCII levels 1-3) and moderate-intensity conditions (HCII levels 4-9). The annual value of agricultural products grown or raised in areas experiencing high intensity conditions (HCII levels 10-15) is estimated to be $81.5 million, including Animals and Animal Products ($51.8 million), Field and Row Crops ($12.4 million), and Vegetables, Melons, and Potatoes ($10.6 million).

AGRICULTURAL LOSSES IN FLORIDA

On April 15, 2025, completed survey responses from both the English- and Spanish-language versions of the UF/IFAS "Assessment of Losses and Damages to Florida Agriculture from Hurricane Debby" were downloaded and prepped for analysis by investigators from the UF/IFAS EIAP. The investigators compiled the survey information for all commodities in each county affected by the disaster. The methodologies used for relating survey responses to HCII levels experienced and for estimating the production loss percentage (%) for different commodity groups at different HCII levels did not change from those implemented in the preliminary report (Court et al., 2024a). The updated area-weighted HCII level of each affected county is shown in Figure 3, reflecting updated wind swath data.

The estimated annual production loss percentages (%) by commodity group and HCII level are displayed in Table 4. Production loss estimates ($) in Table 4 convey the percentage of annual production (calendar year 2024 or marketing year 2024-2025) that has been lost due to Hurricane Debby. Note that some producers (e.g., vegetable farms) have multiple growing seasons in Florida and others (e.g., beef and dairy cattle operations) sell products year-round. Considerations related to multiple growing seasons,

planting and harvesting progress prior to Hurricane Debby, delayed planting in the face of Hurricane Debby, or the potential for growers to replant damaged or destroyed acreage for some commodity groups are reflected in these annual production loss estimates.

Table 4. *Estimated annual production loss by commodity group for different HCII levels based on analysis of survey data for Hurricane Debby along with observations from previously analyzed tropical cyclone events (Irma [2017], Michael [2018], Ian [2022], and Idalia [2023]).*

Commodity Group	Hurricane Composite Intensity Index (HCII)				
	1-3	4-6	7-9	10-12	13-15
Animals and Animal Products	2%	5%	10%	15%	30%
Citrus	0%	0%	5%	20%	35%
Field and Row Crops	5%	10%	20%	35%	55%
Fruit and Tree Nuts	5%	10%	20%	30%	50%
Greenhouse and Nursery	5%	10%	10%	15%	30%
Vegetables, Melons, and Potatoes	1%	3%	5%	5%	10%

These estimates of percentage production losses by commodity group and HCII levels were then combined with the estimated value of annual production on impacted agricultural lands to determine estimated production losses. Estimated production losses for agricultural producers in Florida resulting from Hurricane Debby are $170.1 million.

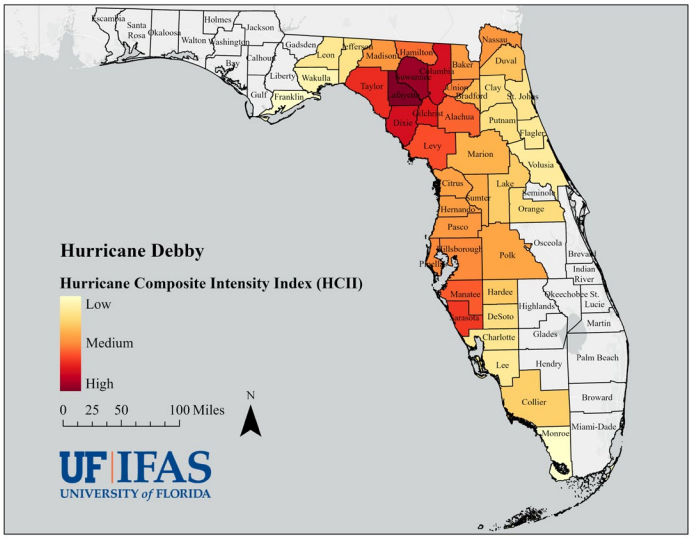

Figure 3. *Area-weighted HCII levels of affected counties in Florida.*

Agricultural Losses by Commodity Group

The estimated agricultural losses by commodity group and HCII level are displayed in Table 5. The baseline data contributing to these estimations include information on acreage, value per acre, and season or growth stage for specific commodities compiled from sources such as the United States Department of Agriculture (USDA)'s 2022 Census of Agriculture, annual surveys by the USDA National Agricultural Statistics Service (USDA-NASS), IMPLAN, Ask IFAS, as well as data published within the FDACS FSAID Geodatabase.

The commodity groups that were most affected in terms of production losses are Animals and Animal Products ($56.9 million), Greenhouse/Nursery ($52.9 million), and Field and Row Crops ($32.7 million).

Table 5. *Estimated agricultural losses (2024$, Thousands) due to Hurricane Debby by commodity group and HCII level.*

Commodity Group	Hurricane Composite Intensity Index (HCII)					Total
	1-3	4-6	7-9	10-12	13-15	
Animals and Animal Products	$7,869	$24,260	$16,489	$7,276	$977	**$56,871**
Greenhouse/Nursery	$26,039	$24,316	$2,074	$413	<$100	**$52,876**
Field and Row Crops	$3,797	$14,322	$10,059	$3,971	$578	**$32,728**
Vegetables, Melons, and Potatoes	$2,486	$14,804	$2,693	$527	<$100	**$20,515**
Fruit and Tree Nuts	$1,658	$2,437	$1,463	$754	$104	**$6,417**
Citrus	$-	$-	$478	$235	<$100	**$714**
Total	**$41,850**	**$80,140**	**$33,256**	**$13,178**	**$1,698**	**$170,122**

Note: Authors' calculations based on analysis of survey data along with observations from previously analyzed tropical cyclone events (Irma [2017], Michael [2018], Ian [2022], and Idalia [2023]). Values less than $100K are represented as '<$100' in the table.

Production losses associated with animal operations (beef and dairy cattle, poultry, shellfish aquaculture, apiculture, etc.) and producers of animal products (milk, eggs, honey) in the affected area are estimated at $56.9 million. These losses are in part a result of damaged fencing, damaged livestock sheds (barns, poultry houses, etc.) and watering points, damaged aquaculture structures, and flooded beehives, along with power outages and loss of feed. Beef and dairy cattle operations impacted by Hurricane Debby reported stressed or injured cattle and shellfish aquaculture operations reported salinity issues, water quality issues, and closure of access to aquaculture lease areas during the hurricane. Notably, some aquaculture operations in coastal areas that experienced significant losses and damaged equipment due to Hurricane Idalia replanted and once again faced destruction and damage to their operations from Hurricane Debby (Freund, 2024).

Production losses associated with Greenhouse/Nursery operations in the affected area are estimated at $52.9 million, which occurred due to damaged hoop houses, greenhouse structures, and nursery infrastructure as well as loss of electricity, which is critically important to these operations for cooling and irrigation.

Field and Row Crop production losses ($32.7 million) in the affected area are partially attributable to wind damaged crops and damage to infrastructure. There were some reports of peanut fields flooding from the excessive rainfall, leaving the crop in some areas unsalvageable (Wright, 2024). Infrastructure damage can impede tending or harvesting crops, and includes impacts to irrigation equipment, tractors and other machinery, and storage structures. There were also reports that fallen trees and debris associated with physical damages of Hurricane Debby impeded the ability of producers to tend or harvest some fields.

Production losses for operations within the Vegetables, Melons, and Potatoes commodity group in the affected area are estimated at $20.5 million. The losses vary by crop and are heavily dependent on the time since planting as well as the ability (or inability) to harvest prior to the hurricane event or to replant damaged or destroyed crops after the event. Many growers of Vegetables, Melons, and Potatoes crops in regions impacted by particularly low-intensity conditions reported minimal to no losses, but low-level losses on a large number of acres of high value crops can add up quickly.

There were no reports of significant or widespread losses for citrus crops due to Hurricane Debby, resulting in minimal losses experienced within this commodity group ($0.7 million). Estimated production losses for other types of fruits and tree nuts in the affected area ($6.4 million) are due to damages from wind. Some survey respondents mentioned wind-destroyed blooms, fruit drop, and broken branches.

Agricultural Losses by County

The top five counties in terms of agricultural losses were Suwannee ($27.5 million), Madison ($19.1 million), Hillsborough ($15.5 million), Levy ($10.4 million), and Lake ($10.1 million), as shown in Figure 4 and Table A-4. Losses were generally higher in counties that experienced higher intensity hurricane conditions, where the value of agricultural production in the path of the storm was high, or where both of these conditions were met. County-level losses by commodity group are shown in Figure 5 and Table A-4. The counties with the highest Animals and Animal Products losses were Suwannee ($15.4 million), Lafayette ($7.0 million), Gilchrist ($4.7 million), Marion ($4.0 million), and Levy ($3.4 million). The top five counties in terms of Greenhouse/Nursery losses were Hillsborough ($10.6 million), Lake ($9.1 million), Volusia ($8.7 million), Manatee ($4.6 million), and Alachua ($3.1 million). The highest losses associated with Field and Row Crops were in Suwannee ($7.7 million), Levy ($4.0 million), Madison ($3.6 million), Gilchrist ($3.1 million), and Lafayette ($2.7 million).

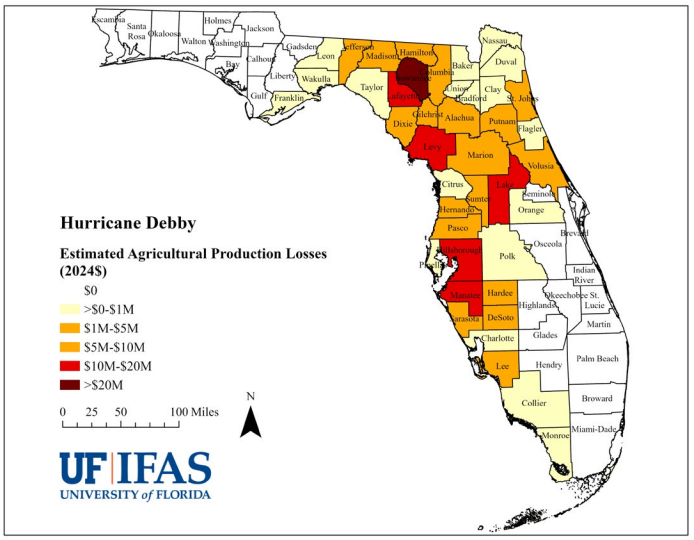

Figure 4. *Estimated total county-level agricultural production losses due to Hurricane Debby (2024$).*

Note: Authors' calculations based on analysis of survey data along with observations from previously analyzed tropical cyclone events (Irma [2017], Michael [2018], Ian [2022], and Idalia [2023]).

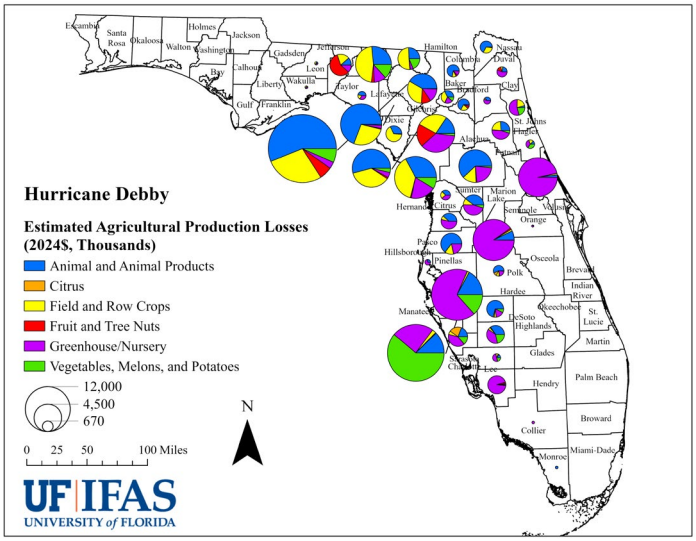

Figure 5. *Estimated county-level agricultural production losses due to Hurricane Debby by commodity group (2024$, Thousands).*

Note: Authors' calculations based on analysis of survey data along with observations from previously analyzed tropical cyclone events (Irma [2017], Michael [2018], Ian [2022], and Idalia [2023]).

Additional Considerations

This report focuses on the assessment of statewide production losses for the calendar year 2024 or marketing year 2024-2025 for agricultural operations in Florida due to Hurricane Debby. The value of the following categories of damages or losses are not included in these estimates and should be considered in addition to production losses suffered by impacted agricultural producers:

- Value of damages to agriculture-related infrastructure (including perennial plantings and lost/deceased animals that are used to produce animal products) that will need to be repaired or replaced.
- Value of stored inputs (seed, fertilizer, etc.) or stored harvested products that were damaged or destroyed.
- Expenses related to Hurricane Debby-specific preparations ahead of the storm and expenses related to clean-up after the storm.
- Value of production losses that might carry over into calendar year 2025, marketing season 2025-2026, or beyond due to damages to agriculture-related infrastructure or other effects of the storm.
- Production losses for agricultural operations that specialize in post-harvest processing, packing, or distribution that might be impacted as a result of impacts to production agriculture operations (e.g., operations specializing in peanut drying, cotton ginning, seafood packaging and distribution, etc.).
- Value of timber- or forestry-related losses; the Florida Forest Service determined that a timber damage assessment was not necessary following Hurricane Debby.
- Value of production losses to capture fisheries; however production loss estimates in this report do include shellfish and finfish aquaculture as these operations are considered agriculture. Capture fisheries might be covered by surveys conducted by other organizations.

It is also important to note that the estimates of production losses represent the estimated total value of agriculture-related production losses due to Hurricane Debby and do not account for the fact that some crop losses might be eligible for or covered by crop insurance or other risk management tools available to producers.

AGRICULTURAL DAMAGES IN FLORIDA

Agricultural damages include both asset damages (buildings, equipment, perennial plantings, and livestock structures, etc.) and production-related damages (stored feed, stored fertilizer, harvested and stored crops, etc.). The findings related to agricultural damages presented in the preliminary report, summarized below, remain valid and unchanged (Court et al., 2024a). Due to data limitations and survey design, in which supplemental questions on damages were optional, not all producers provided responses on agricultural damages. Reported damages to assets and infrastructure include homes, livestock sheds, barns, perennial plantings, conservation structures, fences, farm equipment, and aquaculture equipment (e.g., lost gear and bags). Survey respondents also reported damages to or destruction of stored agricultural inputs including fertilizer and seeds as well as stored harvested products including oysters, clams, hay, haylage, and silage.

While precise statewide damage estimates could not be developed, available data allow for an assessment of the scale of agricultural infrastructure and assets at risk. Agricultural infrastructure located in areas exposed to moderate and high hurricane intensities (HCII levels 4-15) included approximately 57 million square feet of structure footprints, an area roughly 45 times the building footprint of the Pentagon. In terms of estimated value (adjusted

to 2024 dollars), agricultural buildings at risk were valued at approximately $17.2 billion in areas that experienced moderate-intensity conditions (HCII 4-9) and $744.7 million in areas that experienced high-intensity conditions (HCII 10-15). Machinery and equipment values in these two areas were estimated at $1.25 billion and $64.8 million, respectively. Additionally, more than 575,000 acres of irrigated agricultural land were affected, with center pivot and lateral move systems being particularly vulnerable to wind damage, accounting for the majority of irrigation infrastructure in affected areas. Over 95% of irrigated acres impacted by Category 1 hurricane conditions were served by these wind-sensitive systems.

As noted in the preliminary report, these figures represent the value of assets that experienced wind, precipitation, and/or flooding associated with Hurricane Debby, and do not provide any information on repair or replacement costs associated with any damage or destruction to these assets as a result of conditions experienced.

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APPENDIX A

Table A-1. *Estimated acreage of affected agricultural lands by commodity group in each county of Florida.*

County	Animals and Animal Products	Citrus	Field and Row Crops	Fruit and Tree Nuts	Greenhouse / Nursery	Vegetables, Melons, and Potatoes	Total
Alachua	89,398	-	31,930	1,656	1,195	666	**124,845**
Baker	11,513	-	1,134	<100	149	<100	**12,865**
Bradford	19,940	-	5,347	<100	<100	<100	**25,457**
Charlotte	35,514	3,379	710	-	<100	870	**40,496**
Citrus	27,271	<100	2,204	-	176	-	**29,686**
Clay	15,087	-	490	-	274	-	**15,851**
Collier	-	546	-	-	<100	-	**556**
Columbia	42,744	-	20,053	380	265	<100	**63,530**
DeSoto	96,473	31,829	1,702	-	360	3,568	**133,932**
Dixie	19,929	-	8,987	-	<100	106	**29,031**
Duval	12,705	-	874	129	295	-	**14,002**
Flagler	24,117	-	2,016	-	486	1,474	**28,094**
Franklin	<100	-	-	-	-	-	**<100**
Gilchrist	32,691	-	32,734	<100	234	969	**66,704**
Hamilton	23,292	-	19,962	<100	252	3,091	**46,641**
Hardee	91,246	19,045	1,430	-	214	984	**112,919**
Hernando	31,766	<100	1,929	<100	663	-	**34,398**
Hillsborough	75,835	713	2,401	<100	1,502	7,025	**87,531**
Jefferson	26,106	-	14,662	2,420	1,007	<100	**44,204**
Lafayette	20,760	-	19,678	<100	324	190	**40,988**
Lake	75,294	2,788	3,220	221	3,451	179	**85,153**
Lee	7,910	653	<100	111	1,693	236	**10,677**
Leon	3,241	-	798	<100	<100	<100	**4,064**
Levy	99,069	-	42,708	<100	1,750	3,366	**146,945**
Madison	50,564	-	44,782	202	345	2,140	**98,033**
Manatee	81,669	2,574	4,022	-	1,689	29,918	**119,872**
Marion	204,928	237	15,334	<100	1,514	536	**222,615**
Monroe	<100	-	-	-	-	-	**<100**
Nassau	15,457	-	3,182	-	<100	<100	**18,753**
Orange	<100	-	<100	-	<100	-	**159**
Pasco	76,727	477	5,000	<100	560	<100	**82,782**
Pinellas	503	-	<100	-	<100	-	**533**
Polk	45,397	14,263	1,634	<100	<100	<100	**61,456**
Putnam	39,894	<100	9,272	<100	2,206	909	**52,341**
Sarasota	48,841	16,378	1,216	-	373	1,056	**67,863**
St. Johns	8,194	-	8,154	-	204	3,169	**19,720**
Sumter	87,937	-	5,406	-	778	819	**94,941**
Suwannee	62,784	-	58,688	935	1,397	4,084	**127,888**
Taylor	18,094	-	1,139	-	215	-	**19,448**
Union	17,978	-	5,501	<100	<100	383	**23,896**
Volusia	26,957	180	2,141	<100	6,174	<100	**35,498**
Wakulla	1,018	-	638	<100	<100	-	**1,675**
Total	**1,668,946**	**93,167**	**381,232**	**6,600**	**30,073**	**66,033**	**2,246,052**

Note: Acreage less than 100 are represented as '<100' in the table.

Table A-2. *The area-weighted intensity of wind, precipitation, and flood, HCII, and percentage of affected agricultural land in each county.*

County	Area-Weighted Wind Speed Index	Area-Weighted Precipitation Index	Area-Weighted Flood Index	Area-Weighted HCII	% Affected Agricultural Land
Alachua	1.59	2.49	0.70	4.78	100%
Baker	1.00	2.65	0.28	3.93	100%
Bradford	1.00	2.02	0.20	3.21	100%
Charlotte	1.00	0.97	0.11	2.08	34%
Citrus	1.17	2.01	0.59	3.77	100%
Clay	1.00	1.11	0.26	2.37	100%
Collier	1.00	1.80	-	2.80	<1%
Columbia	2.00	3.44	0.74	6.18	100%
DeSoto	1.00	1.12	0.27	2.39	59%
Dixie	2.35	2.91	0.94	6.20	100%
Duval	1.00	1.92	0.17	3.09	100%
Flagler	1.00	0.66	0.28	1.94	100%
Franklin	1.00	-	-	1.00	2%
Gilchrist	2.00	2.88	1.01	5.89	100%
Hamilton	1.49	2.18	0.97	4.64	100%
Hardee	1.00	1.48	0.43	2.91	49%
Hernando	1.00	2.33	0.57	3.89	100%
Hillsborough	1.00	2.70	0.55	4.25	100%
Jefferson	1.00	1.00	0.23	2.23	100%
Lafayette	2.75	3.14	1.62	7.51	100%
Lake	1.00	1.58	0.31	2.90	76%
Lee	1.00	0.93	0.02	1.95	25%
Leon	1.00	0.91	0.17	2.08	29%
Levy	2.00	2.27	0.82	5.09	100%
Madison	1.17	2.10	0.77	4.04	100%
Manatee	1.00	3.56	0.34	4.90	100%
Marion	1.09	1.76	0.58	3.44	100%
Monroe	1.00	-	-	-	64%
Nassau	1.00	2.80	0.20	4.01	100%
Orange	1.00	1.00	0.49	2.49	<1%
Pasco	1.00	2.42	0.55	3.97	100%
Pinellas	1.00	3.00	0.29	4.29	100%
Polk	1.00	2.33	0.40	3.73	21%
Putnam	1.00	0.91	0.43	2.34	100%
Sarasota	1.00	3.80	0.58	5.38	100%
St. Johns	1.00	1.00	0.11	2.11	69%
Sumter	1.00	2.08	0.50	3.58	100%
Suwannee	2.39	3.72	1.04	7.15	100%
Taylor	2.56	1.96	1.07	5.59	100%
Union	1.17	2.75	0.44	4.36	100%
Volusia	1.00	0.72	0.12	1.84	61%
Wakulla	1.00	0.05	0.44	1.49	29%

Table A-3. *Estimated affected value of annual production (2024$, Thousands) by commodity group in each county of Florida.*

County	Animals and Animal Products	Citrus	Field and Row Crops	Fruit and Tree Nuts	Greenhouse / Nursery	Vegetables, Melons, and Potatoes	Total
Alachua	$26,138	$-	$19,827	$17,153	$32,863	$6,161	**$102,142**
Baker	$14,970	$-	$1,053	$316	$1,735	$303	**$18,376**
Bradford	$19,449	$-	$2,935	$818	$578	$192	**$23,972**
Charlotte	$2,710	$6,710	$693	$-	$3,899	$7,339	**$21,351**
Citrus	$6,403	<$100	$1,774	$-	$3,560	$-	**$11,806**
Clay	$4,842	$-	$384	$-	$3,221	$-	**$8,447**
Collier	$-	$1,084	$-	$-	$857	$-	**$1,941**
Columbia	$32,895	$-	$12,996	$3,936	$7,755	$768	**$58,349**
DeSoto	$28,949	$63,205	$1,388	$-	$14,361	$41,057	**$148,961**
Dixie	$7,091	$-	$7,963	$-	<$100	$329	**$15,418**
Duval	$6,234	$-	$718	$1,329	$7,033	$-	**$15,315**
Flagler	$2,531	$-	$1,517	$-	$3,064	$14,589	**$21,702**
Franklin	<$100	$-	$-	$-	$-	$-	**<$100**
Gilchrist	$69,304	$-	$24,568	$787	$3,775	$8,818	**$107,252**
Hamilton	$13,566	$-	$15,327	$417	$1,782	$31,225	**$62,317**
Hardee	$45,177	$37,819	$1,197	$-	$5,462	$11,939	**$101,594**
Hernando	$14,864	<$100	$1,391	<$100	$12,134	$-	**$28,495**
Hillsborough	$58,620	$1,416	$2,118	$330	$127,418	$78,447	**$268,348**
Jefferson	$13,860	$-	$9,788	$25,064	$6,318	<$100	**$55,117**
Lafayette	$71,983	$-	$14,557	$373	$2,379	$1,742	**$91,034**
Lake	$26,864	$5,536	$2,178	$1,966	$151,340	$1,622	**$189,506**
Lee	$1,658	$1,298	<$100	$1,152	$36,545	$2,681	**$43,406**
Leon	$669	$-	$433	$119	$346	<$100	**$1,617**
Levy	$58,091	$-	$33,970	$539	$20,375	$27,393	**$140,367**
Madison	$56,753	$-	$35,031	$2,092	$9,844	$30,904	**$134,625**
Manatee	$46,668	$5,111	$3,758	$-	$45,963	$427,559	**$529,059**
Marion	$123,348	$471	$11,794	$684	$22,894	$4,356	**$163,547**
Monroe	$2,249	$-	$-	$-	$-	$-	**$2,249**
Nassau	$12,617	$-	$2,881	$-	$123	$167	**$15,790**
Orange	<$100	<$100	<$100	$-	$564	$-	**$633**
Pasco	$43,468	$947	$3,866	$124	$6,418	<$100	**$54,891**
Pinellas	$946	$-	<$100	$-	$1,356	$-	**$2,322**
Polk	$11,759	$28,323	$1,115	$126	$2,357	$1,012	**$44,691**
Putnam	$20,505	<$100	$7,544	$178	$17,148	$8,933	**$54,377**
Sarasota	$7,860	$32,523	$1,085	$-	$15,857	$10,626	**$67,951**
St. Johns	$2,720	$-	$6,016	$-	$15,215	$30,045	**$53,997**
Sumter	$31,938	$-	$3,853	$-	$19,538	$8,095	**$63,424**
Suwannee	$189,331	$-	$41,975	$9,682	$7,979	$46,443	**$295,410**
Taylor	$2,880	$-	$670	$-	$1,362	$-	**$4,913**
Union	$6,330	$-	$3,103	<$100	$2,125	$3,430	**$15,049**
Volusia	$8,580	$358	$1,910	$223	$171,619	$154	**$182,844**
Wakulla	$471	$-	$337	<$100	$355	$-	**$1,220**
Total	**$1,095,312**	**$185,008**	**$281,863**	**$67,566**	**$787,556**	**$806,530**	**$3,223,835**

Note: Values less than $100K are represented as '<$100' in the table.

Table A-4. *Estimated county-level agricultural losses (2024$, Thousands) due to Hurricane Debby by commodity group.*

County	Animals and Animal Products	Citrus	Field and Row Crops	Fruit and Tree Nuts	Greenhouse/ Nursery	Vegetables, Melons, and Potatoes	Total
Alachua	$1,323	$-	$2,228	$1,667	$3,063	$178	**$8,460**
Baker	$646	$-	<$100	<$100	$117	<$100	**$896**
Bradford	$525	$-	$169	<$100	<$100	<$100	**$786**
Charlotte	<$100	<$100	<$100	$-	$195	<$100	**$373**
Citrus	$212	<$100	$132	$-	$219	$-	**$564**
Clay	$111	$-	<$100	$-	$162	$-	**$293**
Collier	$-	$-	$-	$-	<$100	$-	**<$100**
Columbia	$2,152	$-	$1,665	$537	$776	<$100	**$5,155**
DeSoto	$657	<$100	<$100	$-	$722	$413	**$1,896**
Dixie	$492	$-	$1,004	$-	<$100	<$100	**$1,513**
Duval	$141	$-	<$100	<$100	$352	$-	**$632**
Flagler	<$100	$-	<$100	$-	$153	$149	**$436**
Franklin	<$100	$-	$-	$-	$-	$-	**<$100**
Gilchrist	$4,679	$-	$3,146	$110	$383	$314	**$8,631**
Hamilton	$729	$-	$1,448	<$100	$128	$527	**$2,853**
Hardee	$1,205	<$100	<$100	$-	$273	$120	**$1,700**
Hernando	$567	<$100	$114	<$100	$789	$-	**$1,474**
Hillsborough	$2,655	<$100	$180	<$100	$10,591	$2,085	**$15,539**
Jefferson	$314	$-	$509	$1,578	$323	<$100	**$2,725**
Lafayette	$6,969	$-	$2,709	<$100	$244	<$100	**$10,058**
Lake	$726	<$100	$136	$111	$9,110	<$100	**$10,102**
Lee	<$100	<$100	<$100	<$100	$1,834	<$100	**$1,955**
Leon	<$100	$-	<$100	<$100	<$100	<$100	**<$100**
Levy	$3,435	$-	$3,962	<$100	$2,041	$924	**$10,436**
Madison	$2,015	$-	$3,565	$193	$833	$1,010	**$7,616**
Manatee	$2,350	<$100	$423	$-	$4,579	$11,687	**$19,115**
Marion	$3,953	<$100	$874	<$100	$1,396	$109	**$6,380**
Monroe	<$100	$-	$-	$-	$-	$-	**<$100**
Nassau	$587	$-	$271	$-	<$100	<$100	**$876**
Orange	<$100	<$100	<$100	$-	<$100	$-	**<$100**
Pasco	$1,711	<$100	$348	<$100	$560	<$100	**$2,636**
Pinellas	<$100	$-	<$100	$-	$136	$-	**$187**
Polk	$394	<$100	<$100	<$100	$140	<$100	**$691**
Putnam	$496	<$100	$439	<$100	$879	<$100	**$1,916**
Sarasota	$422	$471	$130	$-	$891	$307	**$2,221**
St. Johns	<$100	$-	$308	$-	$813	$310	**$1,490**
Sumter	$976	$-	$255	$-	$1,120	$122	**$2,473**
Suwannee	$15,434	$-	$7,691	$1,687	$877	$1,808	**$27,496**
Taylor	$188	$-	<$100	$-	$136	$-	**$395**
Union	$304	$-	$329	<$100	$193	$103	**$935**
Volusia	$178	<$100	<$100	<$100	$8,694	<$100	**$8,988**
Wakulla	<$100	$-	<$100	<$100	<$100	$-	**<$100**
Total	**$56,871**	**$714**	**$32,728**	**$6,417**	**$52,876**	**$20,515**	**$170,122**

Note: Authors' calculations based on analysis of survey data along with observations from previously analyzed tropical cyclone events (Irma [2017], Michael [2018], Ian [2022], and Idalia [2023]). Values less than $100K are represented as '<$100' in the table.


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All photos courtesy of survey respondents.