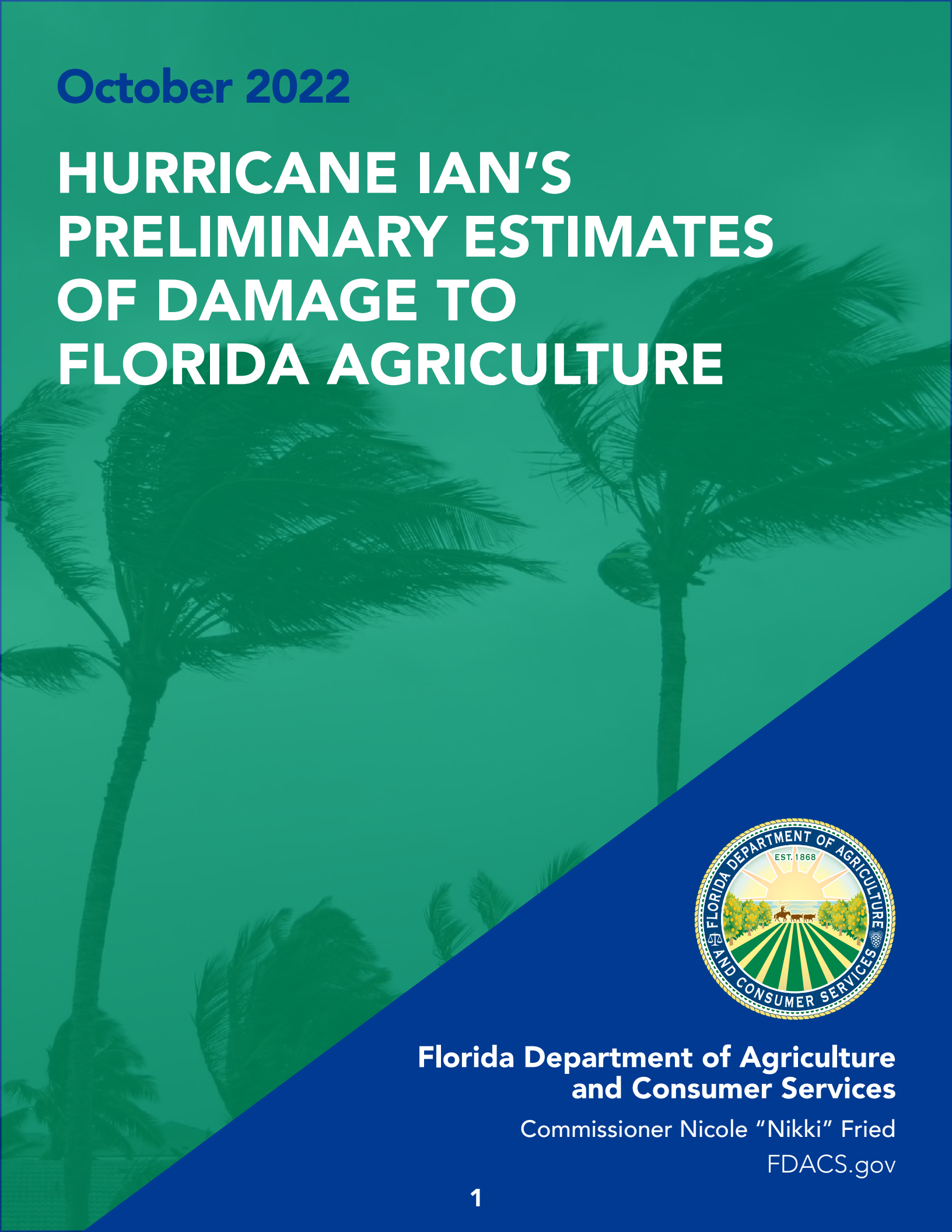
October 2022

HURRICANE IAN'S PRELIMINARY ESTIMATES OF DAMAGE TO FLORIDA AGRICULTURE



Florida Department of Agriculture and Consumer Services

Commissioner Nicole "Nikki" Fried

FDACS.gov

DIRECTIVE AND GUIDELINES

Hurricane Ian made landfall on September 28th 2022 near Fort Myers and Cape Coral as a category 4 hurricane. Ian is among the strongest hurricanes ever to make direct landfall in the United States. Besides causing major devastation to Florida's coastal communities, Ian was large and powerful enough to bring hurricane and tropical storm conditions to the majority of Florida counties. Hurricane Ian's path coincided with some of Florida's most productive agricultural landscapes, and consequently it caused major losses to many segments of production agriculture.

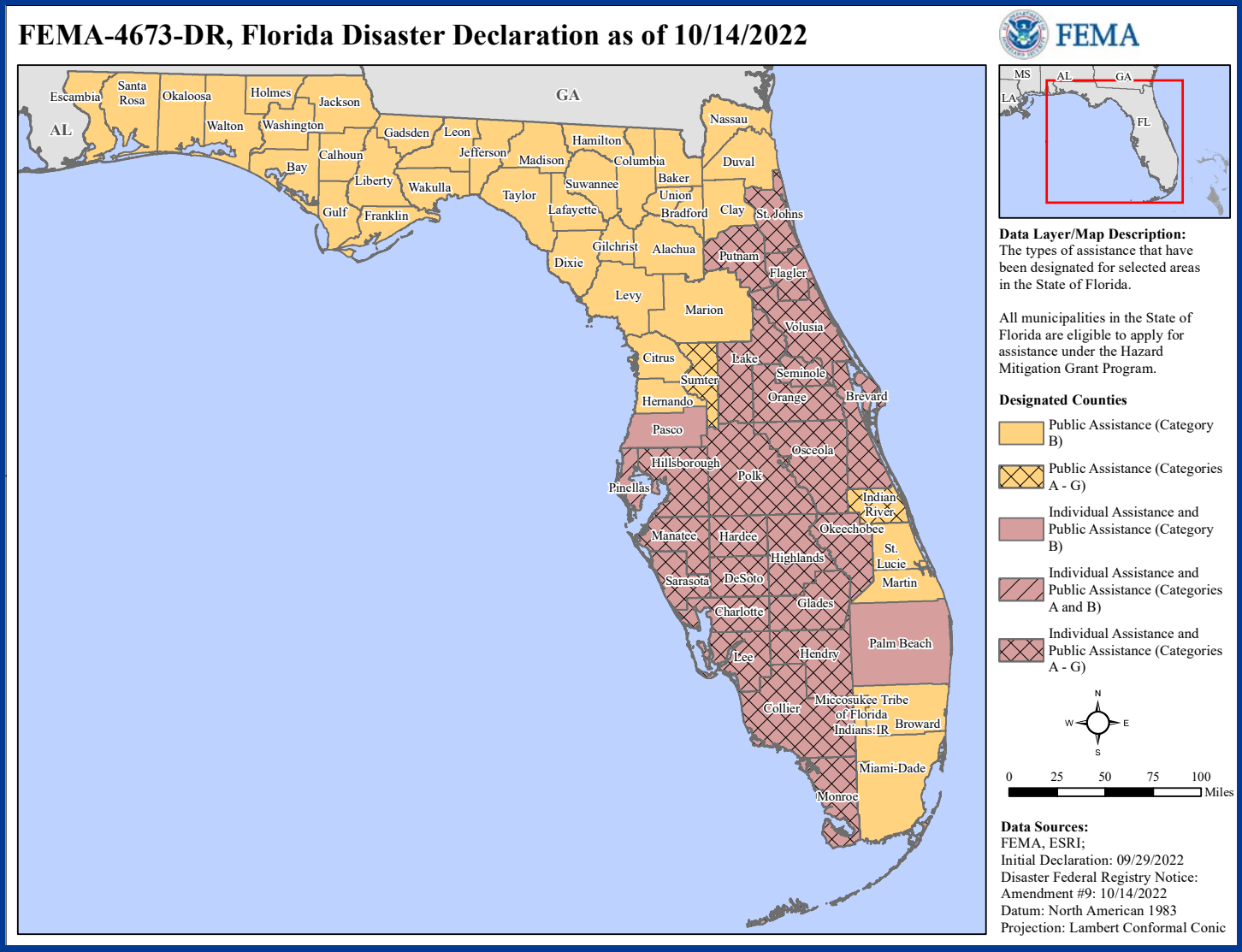
In the wake of this historic storm, the Florida Department of Agriculture and Consumer Services (FDACS) was informed by several industry leaders across the state describing the overwhelming impacts this storm had on not only their current year crop losses, but the further devastation of damaged infrastructure: destroyed fences, shade structures, ground cover for row crops; uprooted or cracked trees and bushes, laid down sugarcane, animal lives lost; and animals whose long-term welfare was impacted by the excessive wind and rain.

The following 27 counties in Florida were declared disasters by FEMA; Brevard, Charlotte, Collier, DeSoto, Flagler, Glades, Hardee, Hendry, Highlands, Hillsborough, Indian River, Lake, Lee, Manatee, Monroe, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, Sarasota, Seminole, St. Johns and Volusia.

This document provides an early summary of the estimated losses to Florida's diverse agricultural sectors, accounting for the loss in current year crop production, citrus, fruit & tree nuts, vegetables and melons, field and row crops, horticultural crops, animals/animal products and forestry as well as the associated losses to direct and related infrastructure. These estimates are based on data obtained from the UF-IFAS Preliminary Assessment of Hurricane Ian, USDA National Agricultural Statistics Service, the Florida Census of Agriculture, USDA My Market News, Timber Damage Estimates prepared by the Florida Forest Service, and the early communication conducted by FDACS with industry leaders and individual producers.

The purpose of this document is to inform policymakers on the preliminary extent of the damage and losses experienced and expected by agricultural producers in Florida in the wake of Hurricane Ian. The estimates are based on the best available information, including satellite imagery, published agricultural statistics, and early surveys with agricultural producers who are currently engaged in large-scale recovery efforts. These estimates will be updated as additional information is gathered and becomes available. Most importantly, this is not a request to the State or Federal governments; rather it is meant to inform policymakers.

MAP



https://gis.fema.gov/maps/dec_4673.pdf

EXECUTIVE SUMMARY

Total crop losses are estimated at $686,788,157 to $1,246,549,185; while total losses to agriculture production and infrastructure are estimated at $1,180,714,303 to $1,888,305,886.

Altogether 27 counties were listed by FEMA as disaster areas:

- Charlotte, DeSoto, Glades, Hardee, Highlands, Lee, Manatee and Sarasota counties experienced major hurricane force winds.
- Hendry, portions of Hillsborough, and Polk counties experienced hurricane force winds.
- Brevard, Collier, Flagler, Indian River, Lake, Monroe, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Putnam, Seminole, St Johns and Volusia counties experienced tropical storm force winds.

Citrus: estimates are combined at a value range of $416,905,273 to $675,529,404 in citrus damages[3].

Fruits and Vegetables: estimates are combined at a value range of $153,722,214 to $230,583,321 in fruits and vegetables damages[3].

Field Crops (including Sugarcane): estimates are combined at a value range of $86,434,127 to $160,358,621 in field crops damages[3].

Horticultural Crops: estimates are combined at a value range of $153,531,344 to $297,047,800 in horticultural crops damages[3].

Animal and Animal Products (including Aquaculture and Dairy): estimates are combined at a value range of $337,385,791 to $492,051,186 in animal and animal products damages and production damages.

Forestry: estimates are combined at a value of $32,735,554 in timber damages.

CITRUS:
$416,905,273 to $675,529,404

Citrus is Florida's signature crop with nearly fifty-nine percent of all the citrus consumed in the US produced within the state. While Florida's citrus crop has been declining over the last decade due to the deadly citrus greening disease, annual sales of citrus still range around $1.14 billion (2019 USDA Cash Receipts). Today, a large portion of the citrus industry is concentrated in southwest Florida, which experienced some of the heaviest winds and flooding in mainland Florida due to Hurricane Ian.

An estimated 375,302 acres (2022 USDA Commercial Citrus Data) of citrus production were affected by hurricane or tropical storm force winds. Charlotte, DeSoto, Glades, Hardee, Highlands, Lee, Manatee and Sarasota counties experienced major hurricane force winds, Hendry and Polk counties experienced hurricane force winds, and Brevard, Collier, Flagler, Hillsborough, Indian River, Lake, Monroe, Okeechobee, Orange, Osceola, Pinellas, Putnam, Seminole, St Johns and Volusia counties experienced tropical storm force winds.

The majority of the citrus acreages for the state of Florida is situated in the affected counties with significant production losses expected. Most of these losses are due to fruit drop, damage to branches, and impacts due to heavy precipitation and flooding. Out of 375,302 acres, 154,846 acres experienced category 4 hurricane force winds, 49,449 acres experienced category 3 hurricane force winds, 24,922 acres experienced category 2 hurricane force winds, 39,098 experienced category 1 hurricane force winds, 143,088 experienced tropical storm force winds. Altogether, estimates are combined at a value range of $146,893,127 to $304,262,703 in citrus damages[3].

Growers are also reporting heavy infrastructure damage, and there are major concerns of flood-caused tree mortality in the near-future. Florida has 55.75 million citrus trees, the citrus industry estimates 8-11% loss of the trees (4,460,584 to 6,133,303). The total citrus tree replacement damages are estimated from $270,012,146 to $371,266,701.

Please note that the United States Department of Agriculture's October 2022 citrus forecast projects all Florida orange production down by 32 percent from last season, non-valencia orange production down by 40 percent, valencia orange production down by 25 percent, all grapefruit production down by 40 percent, and all tangerine and tangelo production down by 7 percent for the 2022-2023 season[1].

Total losses, including crop losses, to citrus producers in the state are estimated to be $416,905,273 to $675,529,404.

Fruits and Vegetables (Excludes Citrus):

$153,722,214 to $230,583,321

Florida is a major producer of fruits and vegetables, with more than $1.72 billion cash receipts in 2019. Major products include fresh tomatoes, strawberries, bell peppers, melons, and potatoes, among many others.

An estimated 187,871 acres (2017 USDA Census) of fruits and vegetables were affected by hurricane or tropical storm winds, with 55,113 acres experiencing winds exceeding 111 mph, 37,329 acres experiencing winds between 74-110 mph, and 95,429 acres experiencing winds between 39-73 mph. The planting season was getting into full gear as Hurricane Ian hit, and many fields lost the plastic and drip-tape irrigation that had been installed. In addition to blown plastic and irrigation, growers have reported clean-up costs which are a significant portion of the total estimated losses. Several growers are also reporting heavy infrastructure losses, including flooding and damage to internal farm roads, dikes, water control structures, and retention areas. Total crop losses for fruits and vegetables are estimated at 10-15% in the affected counties, a value of $153,722,214 to $230,583,321.

Field Crops (includes Sugarcane):

$86,434,127 to $160,358,621

Florida has significant acreage in field crops, including an estimated 410,700 acres in sugarcane, 98,000 acres in cotton, 186,000 acres in peanuts and 36,000 acres in corn. In 2019, Florida cash receipts for field crops represented more than $828 million in production.

An estimated 1,095,149 acres of field crops for the state of Florida were affected by tropical storm or hurricane force winds. 19,832 acres experienced category 4 hurricane force winds, 49,446 acres experienced category 3 hurricane force winds, 21,240 acres experienced category 2 hurricane force winds, 70 experienced category 1 hurricane force winds, 1,004,560 experienced tropical storm force winds. Altogether, estimates are combined at a value range of $86,434,127 to $160,358,621 in field crops damages[3].

Horticultural Crops:
$153,531,344 to $297,047,800

Florida's nurseries provide live plants for landscapers and agricultural producers throughout the nation, and their 2019 cash receipts for floriculture and other horticultural crops totaled more than $2.5 billion. There were approximately 16,237 nurseries and stock dealers affected by hurricane Ian, with 7,989 operations experiencing hurricane force winds. Based on USDA Census data, an estimated 63.9% of Florida's floriculture production was affected by hurricane or tropical storm winds.

An estimated 71,847 acres of horticultural crops for the state of Florida were affected by tropical storm or hurricane force winds. 6,617 acres experienced category 4 hurricane force winds, 3,596 acres experienced category 3 hurricane force winds, 409 acres experienced category 2 hurricane force winds, 326 experienced category 1 hurricane force winds, 60,900 experienced tropical storm force winds. Altogether, estimates are combined at a value range of $153,531,344 to $297,047,800 in horticultural crops damages[3].

Animals and Animal Products (includes Aquaculture and Dairy): $337,385,791 to $492,051,186

Beef Cattle

Beef cattle is one of Florida's most important land uses, with more than 1.63 million animals grazing in approximately 6.1 million acres of pasture and woodlands, and annual sales of $475 million in 2019.

A statewide survey of cattle ranches in the aftermath of hurricane Ian revealed the following losses and damages: An estimated 250 dead animals. An estimated 257,194 calves awaiting to be shipped to out-of-state feedlots, currently in stressful conditions[4].

Forage crops have been severely affected by floods, and as a result many ranchers who lost forage crops to flooding will have to purchase additional hay and supplements to feed their animals during the coming winter[5]. An estimated 1,582,517 acres of pasture has experienced significant erosion and flood damage as a result of Hurricane Ian.

Of the more than 18,000 beef cattle ranches in Florida, an estimated 5,822 suffered significant damages to structures, fences, and equipment, and also have large amounts of storm debris that must be cleaned up. These damages will result in the following estimated costs:

- $12,000 - $15,000 per ranch in debris cleanup and rebuilding fences: $69,864,000 to $87,330,000.
- $20,000 - $25,000 per ranch in damage to barns, sheds, housing, roads, and other infrastructure: $116,440,000 to $145,550,000.
- $5,000 per ranch in equipment damage: $29,110,000.
- Total infrastructure losses to beef industry: $215,414,000 to $261,990,000.

Dairy

Florida is home to over 53 dairies (Florida dairy industry) and 100,000 dairy cows (USDA Census), with annual milk sales over $500 million (2019 USDA Cash Receipts). Most of the milk production is in South Florida where Hurricane Ian's destruction was heaviest, and where most of the damages occurred for the Florida dairy industry.

Cooling systems and structures offering shade and temperature control for dairy cows were damaged during Hurricane Ian. In addition, all affected dairy farms lost electric power for

several days during and after the storm. Stressed animals eat less and spend more energy simply cooling their bodies, resulting in weight loss and reduced milk production which will not recover for several months.

According to the Florida dairy industry, 24 dairy farms suffered significant damages to structures, fences, and equipment, and have significant amounts of storm debris that must be cleaned up. Based on the initial feedback from the dairy industry the estimated damages are approximately $8,500,000. FDACS will update the damage estimates to the dairy industry as more details become available.

Total Infrastructure losses to animals and animal products: $223,914,000-$270,490,000.

Aquaculture

Florida aquaculture is a highly diverse sector with annual sales over $71 million, according to the 2018 USDA cash receipts. Aquaculturists in Florida produce ornamental fish, mollusks, alligators, aquatic plants, live rock and coral, and a diversity of food fish, among other products.

The path and scale of Hurricane Ian has resulted in extensive and severe impacts to the aquaculture industry in the peninsula. Roughly, 350 upland farms were directly in the impact radius of the hurricane, with some additional 200 experiencing some level of impact. Based on initial survey information collected by the Division of Aquaculture, the most heavily impacted sectors will be ornamental fish and plants, food fish and shrimp, and shellfish hatcheries, nurseries and leases. Because aquaculture crops are highly sensitive to environmental changes, economic losses are expected to increase greatly as information becomes available.

Total losses, including crop losses and infrastructure losses to Animals and Animal Products producers in the state are estimated to be $337,385,791 to $492,051,186.

Forestry:
$32,735,554

Nearly 50% of Florida's land, or approximately 17.16 million acres, is forestland cover. The state has extensive natural and planted pine and hardwood forests that are commercially utilized for production of a wide variety of wood building materials, consumer paper and packaging products, chemicals, and renewable biomass fuels. Nearly two-thirds of Florida's forestlands are privately owned by industry, corporations, families, or individuals.

The counties included for this preliminary timber damage assessment report are Charlotte, Desoto, Glades, Hardee, Highlands, Lee, Manatee, Okeechobee, Osceola, Polk, and Sarasota. Timber categories were divided into pine, pine/hardwood, hardwood, and cypress. Average prices were based on past timber sales on Florida Forest Service lands. The primary wood using markets in this area are for mulch. Mulch wood typically brings a significantly lower price than product wood or pulpwood in other regions of the state. No urban land use classifications were used in calculating the damaged timber acreage. This methodology indicates that the total loss experienced by Florida forest products industry in the current year is estimated at $32,735,554.

DATA SOURCES AND METHODOLOGY

Sources Used

1. https://www.nass.usda.gov/Statistics_by_State/Florida/index.php

2. https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_State_Level/Florida/

3. Hurricane Ian Damage Assessments (2022) - Food and Resource Economics Department - University of Florida, Institute of Food and Agricultural Sciences - UF/IFAS (ufl.edu)

4. https://mymarketnews.ams.usda.gov/filerepo/sites/default/files/1704/2022-10-09/639991/ams_1704_00171.pdf

5. https://nwdistrict.ifas.ufl.edu/phag/2021/11/19/how-much-is-that-cheaper-cow-hay-really-costing-you/

Prepared and submitted by:
Florida Department of Agriculture and Consumer Services
Division of Marketing and Development
Bureau of Strategic Development
Marketing.Reports@fdacs.gov