

= Hurricane Alma (1966) =

Hurricane Alma was a rare June major hurricane in the 1966 Atlantic hurricane season . It was the earliest Atlantic hurricane in the calendar year in fifteen years , as well as the earliest continental U.S. hurricane strike since 1825 . Alma developed on June 4 over Central America , and while moving through Honduras , it dropped heavy rainfall that killed at least 73 people in the city of San Rafael . Offshore northern Honduras , the system produced heavy rainfall in Swan Island . Alma moved northeastward and intensified into a hurricane on June 6 . It crossed western Cuba , causing heavy crop damage and water shortages . Alma destroyed over 1 @, @ 000 houses , and damage was estimated around \$ 200 million (1966 USD) . The storm killed 12 people in the country .

After crossing Cuba , Alma intensified further to reach winds of 125 mph (201 km / h) in the Gulf of Mexico . The hurricane passed west of Key West , Florida , causing a power outage and flooding . Alma dropped heavy rainfall and produced winds across most of Florida , which damaged crops and caused scattered power outages . The hurricane weakened before moving ashore near Apalachee Bay . Damage in Florida was estimated at \$ 10 million , and there were six deaths in the state . Alma crossed southeastern Georgia as a tropical storm , damaging a few houses and causing light damage . The storm re @-@ intensified into a hurricane over the western Atlantic Ocean , and its outer rainbands dropped heavy rainfall in Wilmington , North Carolina . Alma encountered colder water temperatures and transitioned into an extratropical cyclone on June 13 . Its remnants dissipated a day later over Massachusetts .

= = Meteorological history = =

During June 1966 , low atmospheric pressure stretched across the western Caribbean Sea and Gulf of Mexico ? a pattern that is conducive for tropical cyclogenesis . During the first few days of the month , a dissipating trough extended from the southeastern United States into the western Caribbean . A mid @-@ level circulation developed along the trough near Cabo Gracias a Dios on June 3 . By the next day , the circulation had reached the surface , which marked the development of a tropical depression over eastern Nicaragua . On June 5 , the depression crossed Honduras and emerged into the western Caribbean , moving north @-@ northeastward through an area of warm sea surface temperatures . It had a good cyclonic circulation , convection , and moisture content , but most significantly , a passing trough to the north provided the depression with favorable outflow . On June 6 , the depression rapidly intensified into Tropical Storm and later Hurricane Alma . This made it the earliest hurricane in the basin since Hurricane Able in 1951 .

After attaining hurricane status , Alma continued moving slowly to the north @-@ northeast , although its intensification rate slowed . While over the western Caribbean , Alma was a large hurricane with gale force winds covering about 200 @, @ 000 sq mi (520 @, @ 000 km²) . The hurricane accelerated on June 8 , quickly moving across Isla de la Juventud and later mainland Cuba with winds of around 100 mph (160 km / h) . Alma did not weaken over land and entered the Gulf of Mexico , where it turned northwestward and passed between Key West and the Dry Tortugas . Late on June 8 , a station in the Dry Tortugas reported winds of 125 mph (201 km / h) ; this would be Alma 's peak intensity . The hurricane began weakening as it paralleled the west coast of Florida , at which point a developing upper @-@ level low over the northern Gulf of Mexico began to influence its motion . While the hurricane moved northward through the Gulf of Mexico , it had a large , ragged eye that reached 75 mi (121 km) in diameter . Initially , forecasters anticipated Alma would cross central Florida , although the hurricane turned to the north @-@ northwest . Cool water temperatures contributed to weakening , and Alma made landfall near Apalachee Bay with winds of 90 mph (140 km / h) on June 9 . This marked the earliest United States hurricane landfall since a hurricane in May and June of 1825 .

While turning northeastward over northern Florida , Alma quickly weakened to a tropical storm . It moved across Georgia and emerged into the Atlantic near Savannah late on June 10 . Its circulation remained near the coast , although by late on June 11 , Alma had moved far enough offshore that it was able to re @-@ intensify into a hurricane . It developed a large eye and maintained hurricane

intensity for about 18 hours . Afterward , Alma turned to the north into an area of drier air and colder waters , and again weakened to a tropical storm on June 12 . The next day , Alma transitioned into an extratropical cyclone to the east of Maryland . The remnants continued to the northeast and dissipated on June 14 over Massachusetts .

= = Preparations = =

In Cuba , evacuations were ordered for Nueva Gerona on Isla de la Juventud , and for 113 @, @ 754 people on the mainland . Cattle were moved to a safe location for the storm 's passage . President Fidel Castro declared a state of emergency in four western provinces due to the threat to the local sugar industry .

Before Alma struck Florida , officials issued hurricane warnings from the Florida Keys through Apalachicola . A hurricane watch and gale warning were issued for the state 's eastern coastline , extending to Savannah , Georgia . In Key West , residents boarded up houses , and about 1 @, @ 000 people fled to the region 's 11 shelters . The MIM @-@ 23 Hawk antiaircraft missiles in the city were moved to higher ground , having been in place since the 1962 Cuban Missile Crisis . Further north , officials ordered the evacuation of Captiva Island and Sanibel Island . The causeways to Sanibel Island were closed , isolating residents who had not evacuated . Ten emergency shelters were opened in Fort Myers and two in Naples . Overall , about 100 @, @ 000 people were advised to seek shelter , though many of them chose to stay in their homes . All Phantom jet fighters at MacDill Air Force Base in Tampa were transported to Columbus Air Force Base in Mississippi , while aircraft were also evacuated from Homestead Air Reserve Base . Because Alma was initially forecast to cross the central portion of the state , residents along the Florida panhandle were not adequately prepared for the hurricane . Just hours before the storm moved ashore , officials ordered evacuations for residents in low @-@ lying areas around Apalachicola .

One week before a scheduled hurricane preparedness drill at Kennedy Space Center , Alma presented the facility with an actual storm threat . A full @-@ scale version of a Saturn V rocket was rolled back to the Vehicle Assembly Building on June 8 in less than 11 hours , which was within the anticipated time for such a move and before the expected arrival of 60 mph (97 km / h) wind gusts . Two other rockets were also removed from their pads .

= = Impact = =

During its formative stages , Alma produced heavy rainfall for several days across Central America , primarily in Nicaragua and Honduras . Overnight on June 5 , the city of San Rafael , Honduras recorded about 30 in (760 mm) of precipitation , possibly in relation to a localized cloudburst . The extreme rainfall flooded the entire city and left most of it covered with about 3 ft (1 m) of mud . Most of San Rafael was destroyed , and there were at 73 deaths in the city ; one news report indicated that 75 people died in the city . Many rivers in Honduras became swollen at the height of the storm . On Swan Island , offshore northern Honduras , the storm dropped 14 @. @ 28 in (363 mm) of rain . There was little damage on the island .

Before affecting Cuba , Alma spawned a tornado in Cayman Brac that destroyed a few houses and power lines . On Isla de la Juventud , the combination of high winds and rains destroyed dairy facilities , chicken farms , and large areas of fruit crops . The storm also destroyed a large radio tower on the island . When Alma struck Cuba , it produced high tides in southern La Habana Province that destroyed many fishing boats and wharves . Several towns along the coastline were flooded during the storm . The hurricane crossed western Cuba while strengthening . The Havana Institute of Meteorology recorded winds of 110 mph (180 km / h) and a barometric pressure of 980 mbar (29 inHg) . The strong winds knocked down trees and power lines , including in the capital city of Havana where hundreds of trees fell . The city had power outages and damage to its water systems . More than 1 @, @ 000 houses were damaged in Havana . Many of them were poorly constructed due to lack of government funding to repair the gradually deteriorating structures in the tropical climate . High winds sank a boat in Pinar del Río Province ; one of the occupants drowned ,

and the other two swam to shore .

Alma caused significant crop damage in western Cuba ; it destroyed 13 @, @ 400 acres (5 @, @ 400 hectares) of bananas and 18 @, @ 090 acres (7 @, @ 320 hectares) of corn fields . There were also heavy losses to fruit trees and to the sugar industry , after the storm destroyed sugar mills and the rail lines that carried the cane to the mills . The storm destroyed over 100 tobacco drying barns , including their contents . The destruction of the tobacco represented a \$ 30 million loss for the country . High winds also destroyed 96 tobacco storage facilities , although the tobacco was removed beforehand . In Güines near Havana , Alma destroyed food crops , which further exacerbated Cuba 's existing food shortages . Alma 's passage also resulted in water shortages , prompting the government to urge residents to use less water . There was heavy structural damage across western Cuba , including in Havana , Matanzas , Camagüey , Pinar del Río , and Las Villas . The hurricane destroyed 1 @, @ 083 houses , and overall damage was estimated at \$ 200 million . Alma killed 12 people in the country and injured 78 others . In the storm 's aftermath , Cuban officials sent about 100 @, @ 000 people from Havana to the cities around the capital to repair storm damage . Such forced labor was a complaint about the rule of Fidel Castro , after the food and supply shortages .

Hurricane Alma affected the entire state of Florida with strong winds and rainfall . While the hurricane passed east of the Dry Tortugas , a station recorded winds of 125 mph (201 km / h) , which were the highest winds on land . The station also recorded a pressure of 970 mbar (29 inHg) , which was the lowest pressure recorded on land . Wind gusts reached 70 mph (110 km / h) in Key West , causing a power outage . Rising tides flooded streets in the city , including A1A which sustained damage to an adjacent seawall . Damage in the lower Florida Keys was estimated at around \$ 300 @, @ 000 . In southwestern Florida , the hurricane heavily damaged the mango crop . High rainfall totals occurred across the state , peaking at 9 @. @ 94 in (252 mm) in Dania Beach near Miami . There were eight tornadoes or funnel clouds in the state , including one in Dade County that damaged a home . Along the west coast of Pinellas County , the storm damaged the grapefruit crop . High winds , including a gust of 93 mph (150 km / h) , caused power outages in the Tampa Bay Area . A wind gust knocked a car off of a bridge between Tampa and St. Petersburg , although the occupants were able to escape safely . As it paralleled the coastline , Alma produced a storm tide of 10 ft (3 @. @ 0 m) in New Port Richey . The high tides caused significant flooding in Cedar Key . In northern Florida where Alma moved ashore , wind gusts reached 100 mph (160 km / h) in Crawfordville ; the high winds damaged the local tobacco crop . There were six deaths , of which two were electrocutions , two were drownings , and two were from heart attacks related to the storm . One of the deaths was a man who had a heart attack while preparing to evacuate . Damage throughout Florida was estimated at around \$ 10 million . This was less than other storms of similar intensity , due to the sparse population of the affected area .

Further north , Alma produced 44 mph (71 km / h) wind gusts and 2 @. @ 18 in (55 mm) in Savannah , Georgia . High winds damaged a few houses and downed trees near Albany , Georgia . The winds overturned a bus at Fort Gordon , injuring 11 soldiers . The storm caused about \$ 50 @, @ 000 in damage in the state . Effects were minor in South Carolina , although heavy rainfall totaled 7 @. @ 80 in (198 mm) in Wilmington , North Carolina . Rainfall and increased storm tides extended into Virginia and New Jersey .