

= Hurricane Edouard (1996) =

Hurricane Edouard was the strongest hurricane in the 1996 Atlantic hurricane season , reaching winds of 145 mph (230 km / h) on its path . Edouard remained a major hurricane for eight days , an unusually long amount of time . A Cape Verde @-@ type hurricane , the storm formed near the coast of Africa in the middle of August . It moved westward then curved northward , and persisted until early September when it became extratropical to the southeast of New England . Edouard was originally forecast to strike the northeast United States , but it produced hurricane @-@ force gusts to portions of southeastern Massachusetts while remaining offshore . The winds caused minor damage totaling \$ 20 million . In addition , the hurricane generated strong waves and rip currents to coastlines , killing two people in New Jersey and causing numerous injuries .

= = Meteorological history = =

A tropical wave moved off the coast of Africa on August 19 , accompanied with spiral bands of convection around an area of low pressure . A large circulation quickly developed once it reached the Atlantic Ocean , and the system organized into Tropical Depression Four late on August 19 while located 345 mi (555 km) southeast of Cape Verde . Initial forecasts predicted for great intensification , including one forecast for the depression to strengthen to a hurricane within three days . However , the depression remained disorganized , and slowly intensified to attain tropical storm status on August 22 .

After becoming a tropical storm , Edouard quickly strengthened due to the establishment of an upper @-@ level anticyclone over the storm . The storm moved to the west in response to a strong subtropical ridge to its north , and Edouard strengthened into a hurricane on August 23 . Due to very favorable conditions , the hurricane rapidly strengthened on August 24 and August 25 to peak as a 145 mph (230 km / h) Category 4 hurricane on the Saffir @-@ Simpson Scale . A weakness in the subtropical ridge allowed for a motion more to the west @-@ northwest , and the hurricane passed about 250 mi (400 km) north of the Lesser Antilles on August 28 . For three days during this time , Edouard maintained Category 4 intensity , though weakened late on August 28 due to an eyewall replacement cycle and vertical shear .

Late on August 29 , Hurricane Edouard developed three concentric eyewalls , an unusual occurrence coinciding with an increase in strength to 140 mph (220 km / h) . A mid @-@ tropospheric trough turned the hurricane to the north to an area of unfavorable conditions , and Edouard weakened to a Category 3 hurricane on August 31 . On September 1 , the hurricane passed about midway between Bermuda and Cape Hatteras , and turned to the north @-@ northeast . Edouard continued to weaken as it turned to the northeast , and on September 2 passed about 95 mi (150 km) to the southeast of Nantucket , Massachusetts as an 80 mph (130 km / h) hurricane , its closest point of approach to the United States . Edouard weakened to tropical storm status on September 3 , and became extratropical shortly thereafter while located to the south of Nova Scotia . As an extratropical storm , Edouard turned to the east , then moved around the periphery of a larger extratropical storm until becoming absorbed by the storm early on September 7 .

= = Preparations = =

A high pressure system over New England resulted in the possibility that Edouard would track to the west and strike the United States . One computer model predicted the hurricane would strike near Atlantic City , New Jersey with winds of over 111 mph (178 km / h) on Labor Day . This caused Cape May County officials to contemplate ordering an evacuation for the busiest tourist weekend of the year , though an evacuation never occurred . Due to the possibility for a landfall on the East Coast of the United States , officials at the National Hurricane Center issued Tropical Storm and Hurricane Watches and Warnings from Cape Lookout , North Carolina to Eastport , Maine at various times . Tropical storm warnings existed from North Carolina to Watch Hill , Rhode Island and

from the mouth of the Merrimack River to the United States / Canada border , while hurricane warnings existed from Watch Hill , Rhode Island to Merrimack River , Massachusetts . Hurricane watches were also issued for the tropical storm warning area .

In North Carolina , Cape Lookout was closed and evacuated prior to the storm 's passage . Because a Hurricane Watch existed for the New York City metropolitan area , New York Mayor Rudy Giuliani urged citizens to take preparations . In addition , city officials set up a hurricane helpline , activated the city 's Emergency Command Center at the Police Headquarters , and distributed leaflets to flood @-@ prone areas . Near New Bedford , Massachusetts , where landfall was predicted to occur , schools were prepared as shelters in case of a direct hit . New Bedford Mayor issued a state of emergency for the city . However , few people stayed in shelters during the storm 's passage . On Cape Cod , thousands of tourists and summer residents evacuated in preparation for the storm , resulting in an 18 @-@ mile (29 km) traffic backup . As a result , many beach resorts lost millions in potential revenue . Of those who remained on Cape Cod , 900 stayed in emergency shelters when the storm passed the area . In Boston 's Logan International Airport , numerous flights were cancelled or delayed to move planes to safety . Many sailors removed their boats from the water prior to the storm . At one time in Mattapoissett Harbor , workers removed boats at a rate of one every eight minutes . In Maine , the Red Cross opened several emergency shelters , though they were never used . Like in Massachusetts , sailors removed their boats , and due to media coverage , residents were well @-@ prepared for the hurricane .

= = Impact = =

Despite initial predictions , Edouard 's effects were much less than expected . Strong waves struck much of the East Coast of the United States , killing 2 and injuring numerous others . In 2011 the National Hurricane Center reported that Edouard had caused a total of US \$ 20 million with the greatest damage occurring on Cape Cod , where moderate wind gusts resulted in \$ 4 @.@ 6 million (2007 USD) .

= = = Carolinas and Mid @-@ Atlantic = = =

In South Carolina , minor beach erosion was reported in Charleston and Colleton Counties . Swells of up to 15 ft (4 @.@ 5 m) , in combination with strong waves , caused overwash on Route 12 on Hatteras Island . Minor beach erosion occurred . Moderate winds of up to 50 mph (80 km / h) blew down a few trees and caused shingle damage to buildings . In Delaware , rough surf closed numerous coastal beaches , while storm tides and waves flooded a campground near the Indian River in Sussex County . Strong waves in New Jersey killed two people and seriously injured another . Lifeguards made numerous rescues along the coast , while other beaches were closed or had restrictions on bathing . Winds were minor along the Jersey coastline , peaking at less than 30 mph (48 km / h) .

In New York , Edouard produced strong waves and storm tides of one to two ft (0 @.@ 3 to 0 @.@ 6 m) , causing overwash along southern Long Island due to high tide . Coastal flooding occurred , including in Hampton Bays where the waves flooded one road and covered another with sand . The flooding trapped six cars , while the strong waves forced several beaches to close . Because the hurricane moved through the New York Shipping Channel , numerous ships reported winds of over hurricane status , though winds remained below tropical storm force on land . A boat capsized off the coast of Jones Beach Island , though its passengers were not injured . A Celebrity Cruises cruise ship suffered damage from 30 to 50 ft (nine to 15 m) waves , injuring several passengers and crew members . Rainfall was minimal , peaking at less than a half of an inch in eastern Long Island .

= = = New England and Canada = = =

Hurricane Edouard passed about 95 miles (150 km / h) southeast of Nantucket while moving at

only 12 mph (19 km / h) , much slower than previous New England hurricanes . This resulted in several hours of strong waves , winds , and rain . The hurricane produced wave heights of up to 31 feet (9 @. @ 4 m) , which washed twelve boats ashore and damaged numerous others . The strong waves and a storm surge of up to 2 @. @ 1 feet (.6 m) in Nantucket flooded a few coastal roads . Edouard also produced tropical storm force winds across much of Massachusetts , as well as one hurricane @-@ force gust on Nantucket . In addition , there were unofficial reports of stronger gusts , including 77 mph (124 km / h) on Cape Cod , 80 mph (129 km / h) on Martha 's Vineyard , and 90 mph (145 km / h) on Nantucket . The strong winds caused power outages to 2 / 3 of Nantucket , all of Martha 's Vineyard for six hours , and most of Cape Cod for several hours . Power outages , effecting 35 @, @ 000 to 40 @, @ 000 were reported throughout Massachusetts , though far from the power outages caused by Hurricane Bob five years prior . The winds also downed numerous trees , and blew off the roof of the fire station in Hyannis . Rainfall was moderate from the slow @-@ moving hurricane , peaking at 6 @. @ 37 inches (162 mm) in West Dennis with many other locations reporting over 3 inches (76 mm) . The rainfall produced minor street flooding . Damage on Cape Cod totaled to \$ 3 @. @ 5 million (1996 USD , \$ 4 @. @ 6 million 2007 USD) .

In New Hampshire , the hurricane produced winds gusts of up to 38 mph (61 km / h) and around 1 inch (25 mm) of rain along the coast . In Maine , heavy surf closed several beaches and injured two people . Waves also damaged several boats . Winds were moderate near the coast , peaking at 47 mph (76 km / h) with gusts to 54 mph (87 km / h) at Mount Desert Island . The winds knocked over several trees and caused sporadic power outages throughout the state , including loss of power for 1 @, @ 900 Portland residents . In Kittery , water fell through an office building , damaging computer equipment . Rainfall was minor , peaking at 1 @. @ 23 inches (31 @. @ 24 mm) in Eastport .

In southern Nova Scotia , Edouard produced heavy rainfall from 3 @. @ 7 to 5 @. @ 5 inches (95 to 140 mm) . Winds were moderate , peaking at 75 mph (120 km / h) in Cape Breton Highlands . The hurricane also caused beach erosion on southeastern Nova Scotia .