

= Tropical Storm Odette (2003) =

Tropical Storm Odette was a rare off @-@ season tropical storm that affected the Caribbean Sea in December 2003 . The 15th tropical storm of the 2003 Atlantic hurricane season , Odette formed near the coast of Panama a few days after the official end of the Atlantic hurricane season , and ultimately made landfall on the Dominican Republic as a moderate tropical storm .

The storm caused heavy damage throughout the Dominican Republic from unusually heavy rainfall in December . Preparation preceding Odette 's landfall resulted in only eight deaths and 14 injuries . Total damage is unknown , though crop damage in the Dominican Republic totaled to over \$ 8 million (2003 USD , \$ 10 @.@ 3 million 2015 USD) .

= = Meteorological history = =

By November 30 , the last day of the Atlantic hurricane season , a stationary front extended across eastern Cuba into the southwestern Caribbean Sea . On December 1 , a low pressure area developed within the frontal zone just north of Panama , and an anticyclone aloft produced good outflow over the low @-@ level center . The low remained nearly stationary for the next several days , and it gradually became separated from the stationary front . Convection increased across the area due to moisture from the eastern Pacific Ocean and moderate divergence . Increased wind shear deteriorated the system on December 2 , though convection redeveloped as the system started a northeast drift . On December 3 a mid @-@ level circulation developed about 140 miles (225 km) north of the surface center . Convection increased and became better organized as a weak tropical wave reached the area , and it is estimated the system developed into Tropical Depression Twenty at around 1200 UTC on December 4 while located about 345 miles (560 km) south of Kingston , Jamaica ; initially , the depression was forecast to track north @-@ northeastward and pass over western Haiti .

Upon being classified as a tropical cyclone , the depression was embedded within the southwesterly flow between a ridge over the eastern Caribbean Sea and a mid @-@ latitude trough , which caused a steady east @-@ northeast motion . The convection organized into a central dense overcast with a well @-@ defined cloud band wrapping partially around the center , and based on satellite imagery estimates the depression was upgraded to tropical storm status ; late on December 4 , the National Hurricane Center named the storm Odette . After being named , the storm intensified despite moderate southwesterly wind shear , and an eye feature became evident on microwave satellite imagery . Additionally , about three ? fourths of a mid @-@ level eyewall developed . The storm was assessed with winds of 40 ? 50 mph (65 ? 85 km / h) , though the National Hurricane Center remarked the winds could have been stronger due to lack of structural data . The eye feature diminished as the convective structure deteriorated slightly , and Hurricane Hunters first flew into the storm at around 1200 UTC on December 5 . Odette tracked over an area of warm sea surface temperatures , and the overall cloud pattern gradually improved ; the Geophysical Fluid Dynamics Laboratory predicted the storm to attain hurricane status . Early on December 6 , a TRMM overpass showed an 80 % closed eyewall , and at 0600 UTC Odette attained peak winds of 65 mph (100 km / h) while located about 245 miles (395 km / h) southwest of Santo Domingo , Dominican Republic .

Upon reaching peak intensity , Odette had begun accelerating northeastward , which decreased wind shear and slightly increased its southwesterly outflow . The low @-@ level center decelerated as it approached Hispaniola , though the convection continued quickly northeastward . Failing to maintain vertical organization , Odette weakened slightly and made landfall on Jaragua National Park , in the Pedernales Province of the Dominican Republic , around 2300 UTC on December 6 with winds of 60 mph (95 km / h) . The circulation became disrupted as it crossed the country , and on December 7 it emerged into the Atlantic Ocean with winds of 45 mph (75 km / h) . It accelerated to the northeast ahead of an approaching cold front , and late on December 7 Odette transitioned into an extratropical cyclone as its center became embedded within the front . The remnants continued quickly northeastward before losing its identity within the frontal zone on December 9 ; the

frontal zone that absorbed Odette also absorbed Tropical Storm Peter a few days later .

= = Preparations = =

Prior to Odette 's predicted arrival , the Dominican Republic government issued for the evacuation of more than 10 @,@ 000 people , mostly from those living near rivers . At least 2 @,@ 000 shelters were set up , capable of housing up to 800 @,@ 000 people . In addition , the government mobilized the army to force those unwilling to leave from their homes . Such precautions were taken due to already saturated grounds from heavy rainfall three weeks prior .

A tropical storm watch was issued between Santo Domingo and the Dominican Republic / Haiti border on December 4 , 56 hours prior to landfall . This was raised to a tropical storm warning on December 5 while 32 hours before landfall . In addition , tropical storm warnings were issued for all of the Haitian coastline and Jamaica .

= = Impact = =

While over the southwestern Caribbean Sea , Odette dropped heavy rainfall , including prior to its formation . For several days , the storm caused rains in Panama , Costa Rica , and the east coast of Nicaragua . In Colombia , the storm caused rainfall totals of up to 8 inches (200 mm) in Puerto Colombia . In Jamaica , the storm dropped moderate rainfall , flooding several roads in Saint Ann and Saint Mary Parishes . Odette caused moderate damage and 8 deaths in the Dominican Republic .

= = Dominican Republic = =

Winds from Tropical Storm Odette were relatively light across the Dominican Republic , with a peak gust of 60 mph occurring in Santo Domingo . The storm dropped heavy rainfall for several hours , amounting to a maximum of 9 @.@ 07 inches (230 mm) in Isla Saona . Several other locations reported over 4 inches as well . The rainfall caused mudslides and flash flooding , forcing several rivers to overflow in combination with previous rains . In addition , a tornado was reported near Santo Domingo , destroying one house and uprooting several others .

The flooding and mudslides damaged up to 60 @,@ 000 homes and destroyed 34 . Gusty winds caused power outages . River flooding caused two bridges to collapse , isolating several communities . Landslides buried several roads , though authorities quickly repaired them . The rainfall also flooded fields , resulting in severe crop damage . As much as 85 % of the banana crop was lost , while the coffee crop suffered losses shortly before harvest season . Crop damage totaled to around \$ 8 million (2003 USD) . In addition , excess flooding contaminated water supplies , leaving several areas without clean water or sanitation .

In all , Tropical Storm Odette caused 8 deaths and 14 injuries , mostly due to flash flooding and mudslides . In addition , two indirect deaths are associated with the storm due to heart attacks . Neighboring Haiti experienced little from the storm .

= = Puerto Rico and United States Virgin Islands = =

Though Odette passed 280 miles to the west of Mayagüez , Puerto Rico , the storm caused moderate rainfall across Puerto Rico and the United States Virgin Islands . Rainfall in Puerto Rico was heaviest in the southeast , where a peak of 8 @.@ 73 in (221 @.@ 74 mm) was recorded in Jajome Alto . The storm also caused up to 2 @.@ 2 in (55 @.@ 9 mm) of rainfall in Christiansted on Saint Croix .

Odette 's rainfall caused flooding throughout the island 's rivers . The river flooding destroyed three bridges , resulting in \$ 20 @,@ 000 in damages (2003 USD) . The flooding also caused a mudslide near a cemetery in Humacao . The rainfall also covered numerous roads , though overall damage was minimal throughout Puerto Rico and the Virgin Islands .

= = Aftermath and records = =

In all , 65 @, @ 000 people were affected by Tropical Storm Odette . The Dominican Republic Red Cross and Red Crescent deployed 105 volunteers to the impacted areas , primarily in the area of Monte Cristi . The organization provided food and hygiene kits to thousands of people , as well as mosquito nets . The Red Cross also gave a 5 @, @ 000 liter water tank for the citizens in Monte Cristi , an area without clean water or sanitation .

When Odette formed on December 4 , it became the first tropical storm since the beginning of the modern tropical cyclone record to form in the Caribbean Sea in the month of December ; a documented December Caribbean hurricane occurred in 1822 . However , Tropical Storm Karen , which formed in November 1989 , persisted until December while located in the northwestern Caribbean Sea . In addition , Odette was the first Atlantic storm to form in the month of December since Hurricane Lili in 1984 .

The 2003 season was the first season since 1953 to have a pre @-@ season storm and a post @-@ season storm , with Ana in April and Odette .