= Hurricane Nicole (1998) =

Hurricane Nicole was the last hurricane in the 1998 Atlantic hurricane season . It developed from a frontal low to the south of the Azores on November 24 , and quickly strengthened to reach winds of 70 mph (110 km / h) as it moved to the west @-@ southwest . An approaching upper @-@ level trough moved over the system , producing strong wind shear which rapidly weakened Nicole to a tropical depression . After the trough passed , the system entered an area of lighter shear , and steadily restrengthened . An approaching cold front turned it to the northeast , and while moving over anomalously warm sea surface temperatures Nicole attained hurricane status . It reached a peak intensity of 85 mph (135 km / h) on December 1 , and rapidly weakened over the waters of the north Atlantic Ocean . Nicole is one of five December Atlantic hurricanes on record .

= = Origins = =

A strong frontal low located several hundred miles south of the Azores persisted for several days in late November while remaining nearly stationary . After it began moving steadily to the west , a tightly @-@ wrapped band of convection developed near the center , and it is estimated the system developed into Tropical Depression Fourteen on November 24 while located 725 miles (1 @,@ 165 km) south of Lajes , Azores . The system quickly intensified as it moved west @-@ southwestward , and strengthened into Tropical Storm Nicole six hours after forming . Tropical Storm Nicole was a small storm , and upon first forming tropical storm force winds extended only 60 miles (95 km) from the center .

A few hours after attaining tropical storm status , a ship just north of the center reported winds of 41 mph (66 km / h) , confirming the system was a tropical storm . Located to the south of a strong mid @-@ level ridge , Nicole continued to the west @-@ southwest while centered within a large upper @-@ level low . Common for late @-@ season development in the subtropics , this produced light vertical shear over the storm . The storm moved through an area of marginal sea surface temperatures of 77 ° F (25 ° C) . An intermittent eye feature of the small area of deep convection , and Nicole quickly strengthened to reach an initial peak intensity of 70 mph (115 km / h) . After maintaining its peak for around twelve hours , an upper @-@ level trough moved rapidly eastward over Nicole , which produced high levels of wind shear . The shear weakened the storm , and by late on November 25 the center became exposed to the west of the diminishing deep convection . The shear dissipated most of the convection , and Nicole degenerated to a tropical depression on November 26 . Operationally , advisories were discontinued , and regeneration was considered unlikely .

= = Regeneration = =

The low turned to the west , and following the passage of the trough a ridge became established over Nicole . This resulted in a decrease in wind shear , and deep convection redeveloped over the storm . The National Hurricane Center reinstated advisories for Nicole on November 27 while located about 1 @,@ 515 miles (2 @,@ 440 km) west @-@ southwest of the Canary Islands . The low @-@ level circulation was initially exposed on the southwest side of the convection , though Nicole quickly strengthened and unexpectedly re @-@ attained tropical storm status later on November 27 . Upon reaching tropical storm status for the second time , the center of Nicole moved beneath the convection while an anticyclone developed over the storm . Banding features began to develop , and outflow was well @-@ defined . An approaching cold front turned Nicole to the north , and late on November 28 the storm reached its westernmost point while located 1 @,@ 125 miles (1 @,@ 800 km) east @-@ northeast of Bermuda .

After turning to the northeast , shear from the approaching front weakened Nicole slightly , and the center became situated near the western edge of the convection . Upper @-@ level diffluence allowed the convection to persist despite the shearing environment , and an eye @-@ feature developed within the convection . Anomalously warm sea surface temperatures of 3º to 5 ° F (2º to

3 ° C) above normal allowed the storm to continue strengthening , and early on November 30 Nicole strengthened to attain hurricane status while located 1 @,@ 280 miles (2 @,@ 060 km) west @-@ southwest of Lajes , Azores . A nearly complete eyewall organized within the storm , and early on December 1 Nicole reached a peak intensity of 85 mph (135 km / h) . It turned northward and rapidly weakened , and Nicole became extratropical later on December 1 while located 285 miles (460 km) northwest of the Azores . The extratropical remnant turned to the northwest while moving around the periphery of a larger circulation , and on December 2 Nicole dissipated .

When Nicole lasted into December as a hurricane , it was one of only five Atlantic hurricanes on record in the month . The other five attained the intensity during the month , and included an unnamed hurricane in the 1887 season , Hurricane Alice in 1954 , Hurricane Lili in 1984 , and Hurricane Epsilon in 2005 .

= = Impact = =

Nicole remained hundreds of miles away from land throughout its entire lifetime , and as a result it caused no damage or deaths .