

= Hurricane Hernan ( 2002 ) =

Hurricane Hernan was the second of three Category 5 hurricanes during the 2002 Pacific hurricane season . The twelfth tropical cyclone , tenth named storm and sixth hurricane of the season , Hernan originated from a tropical wave that formed in the Atlantic Ocean and crossed to the Pacific Ocean . The wave spawned a low pressure system which organized into a tropical depression on August 30 , a tropical storm on August 31 and a hurricane later that day . Hernan rapidly intensified and reached peak intensity as a Category 5 storm on the Saffir @-@ Simpson Hurricane Scale . Proceeding northwest , it maintained this strength for eight hours , but on September 2 it entered cooler waters and began to weaken . By September 6 it had degenerated into a remnant area of low pressure .

Hernan was the second most intense hurricane of the season , and it maintained Category 5 status for the second @-@ longest time of the season , behind Hurricane Kenna . Although Hernan remained far from land , swells of 15 to 20 feet ( 4 to 6 meters ) caused minor beach erosion along the coast of Mexico . In addition , an associated remnant plume of moisture generated light shower activity in southern California as it tracked just offshore .

= = Meteorological history = =

On August 16 , a tropical wave left the coast of Africa . It traveled westward across the Atlantic Ocean , crossing over Central America and emerging in the eastern Pacific , where it merged with a pre @-@ existing intertropical convergence zone disturbance . The system gradually developed moderate convection , and on August 30 it had developed sufficient convection to be designated Tropical Depression 10 @-@ E. The depression produced persistent strong thunderstorms , primarily in two areas of deep convection located to the northeast and west of the center of circulation . Although the center was elongated , wind shear over the system remained light and outflow was good , which led forecasters to predict modest intensification . On the afternoon of August 30 , banding features became evident , and the depression was upgraded to Tropical Storm Hernan with sustained winds of 45 mph ( 72 km / h ) . Further organization occurred , and the center of circulation became encircled by convective thunderstorms . On August 31 , the storm was upgraded to Hurricane Hernan as it moved northwestward about 400 miles ( 634 km ) southwest of Acapulco .

Light wind shear and favorable ocean temperatures led to steady intensification of the storm , and satellite images indicated that an eye had developed late on August 31 . Minimum pressure lowered to 987 mb ( hPa ) , and the maximum winds increased to 100 mph , Category 2 on the Saffir @-@ Simpson Hurricane Scale . The storm quickly reached Category 3 , a major hurricane , and soon after , Category 4 . As it did so , its eye became ragged , while its lateral movement to the northwest rose to 17 mph around the southern periphery of a strong deep @-@ layer ridge over the United States . By September 1 , the hurricane reached its peak intensity of 160 mph ( 260 km / h ) and a minimum pressure of 921 mb ( hPa ) . It had reached Category 5 , the second of three such powerful storms that would do so during the season .

By September 2 , the storm 's convective thunderstorms warmed slightly , indicating weakening to just below Category 5 . An eyewall replacement cycle took place , and two eye structures formed as gradual weakening continued . By September 2 , the storm was downgraded to Category 3 just before it turned slightly to the west . The storm underwent another eyewall replacement cycle as winds decreased further . As the storm entered cooler waters , winds decreased to 100 mph ( 160 km / h ) , below major hurricane intensity . Soon Hernan was downgraded to Category 1 , and the eye became cloud @-@ filled . On September 5 , Hernan was downgraded to a tropical storm as winds rapidly weakened to 45 mph ( 72 km / h ) despite developing a new band of convection . That same day , the storm was downgraded to a tropical depression as it began to lose tropical characteristics . Strong wind shear developed , further dissipating the depression . On September 6 , the system degenerated into a remnant low @-@ pressure system which spawned a remnant plume of moisture that meandered off the coast of California , producing light showers .

= = Impact and intensity = =

Hurricane Hernan remained far from shore and caused little damage to land . It brought light wind to Socorro Island off the coast of Mexico . Rough surf caused minor impact ; in the open waters near the center of Hernan , waves generated by the storm were unofficially estimated to exceed 70 feet ( 21 meters ) . However , official buoys reported swells of 57 feet ( 17 meters ) . Along the coast of Mexico , waves reached 15 to 20 feet ( 4 to 6 meters ) , causing minor beach erosion . A portion of Hernan 's remnant moisture off the southern California coast produced light rainfall and slippery roads . Hernan had no known effects on shipping .

When Hernan grew from tropical storm to Category 5 , it intensified at a rate of 1 @. @ 73 mbar ( hPa ) per hour , just under the threshold for " rapid intensification " . However , for a 12 @- @ hour period from August 31 to September 1 , it deepened at 2 @. @ 58 mbar ( hPa ) per hour , within the range of " explosive deepening " due to favorable conditions including light wind shear and warm water .