

= 1991 Pacific hurricane season =

The 1991 Pacific hurricane season was a near @-@ average Pacific hurricane season . The worst storm this year was Tropical Depression Five @-@ E , which killed one person in Mexico . Elsewhere , Tropical Storm Ignacio injured forty people in Mexico , and Hurricane Fefa caused flooding in Hawaii . Hurricane Kevin was the strongest system of the season and became resulted the then longest @-@ lasting hurricane in the eastern north Pacific basin . Hurricane Nora was the strongest November storm at that time .

The season officially started on May 15 , 1991 in the eastern Pacific , and on June 1 , 1991 in the central Pacific . It lasted until November 30 , 1991 in both basins . These dates conventionally delimit the period of each year when most tropical cyclones form in the northeastern Pacific Ocean .

= = Season summary = =

During the season , a total of sixteen tropical cyclones developed , featuring ten hurricanes , four tropical storms and two tropical depressions . These totals are close to the climatological averages established since 1966 , when satellite surveillance began . However , the season was less active than 1990 , which had a record 16hurricanes (more than 1991) . On the other hand , it ended late with the first November hurricane since 1966 . On the other hand , the months of July and August , often the most active ones in this basin , only produced two tropical cyclones each . The activity in July is four systems below the average of six at that time due to unusual circulation patterns aloft over the tropical Pacific . A shorter gap from late August to early September was attributed to anomalous flow patterns near the Baja California Peninsula .

None of the tropical storms or hurricanes made landfall . One of the two tropical depressions of the season , Five @-@ E , came ashore near Salina Cruz , Mexico , on the last day of June . The depression caused the only fatality of the season , injured five hundred , with two people missing . Delores , Ignacio and Marty threatened the coast of Mexico , coming close enough to require tropical cyclone watches and warnings . Of these , Ignacio was also responsible for 40 injuries as the system passed just offshore of Lázaro Cárdenas . Public advisories were issued for four other systems due to the threat of heavy rain along the coast .

Several tropical cyclones grew into specially long @-@ lived and intense systems . For example , Hurricane Kevin endured as a hurricane for 12 ½ days to the east of 140 ° W , establishing a new record for longevity in the eastern Pacific .

Tropical cyclone data was gathered at 6 hour intervals throughout the season . Even though most intensity assessments were estimates via the Dvorak Technique , there was a large research mission for Tropical cyclogenesis in the Pacific . A NOAA research mission investigated Hurricane Jimena and gathered a few surface observations . Track forecasts were slightly more accurate than the past three years ; intensity forecasts were comparable to the previous three seasons .

The season began with the formation of Tropical Depression One @-@ E on May 16 and ended with the dissipation of Tropical Depression Nora on November 12 . One named storm formed in May , three in June , two in July , two in August , three in September , two in October , and one in November .

Plus , Dolores was spelled Delores

= = Storms = =

= = Tropical Storm Andres = = =

On May 16 , the first tropical depression of the season formed to the southwest of Baja California , out of a tropical disturbance that had developed during May 5 within the vicinity of Panama . During May 16 the depression gradually developed , before early the next day the National Hurricane Centre declared it a tropical storm and named it Andres . The newly named tropical cyclone reached

its peak intensity of 60 mph (95 km / h) , later that day . After maintaining its peak intensity for 24 hours , Andres started to gradually weaken as upper level windshear over the system increased before it dissipated during May 20 . Throughout its life as a tropical cyclone , Andres moved very little and slowly executed a cyclonic loop , while remaining well away from any land .

== Tropical Storm Blanca ==

A well organized tropical wave over northern Africa entered the Atlantic Ocean on May 31 . The wave never showed signs of organization while crossing the Atlantic . It emerged into the eastern north Pacific on June 10 . It was not until June 13 when the convection associated with the wave became better organized . On June 14 , Tropical Depression Two @-@ E formed at a location about 515 @. @ 7 miles (830 km) from Acapulco , Mexico .

For the next 48 hours , the depression moved toward the west and then northwest in response to a weakening ridge to the northwest . On June 17 , the strong shear relaxed somewhat and the exposed center moved under the deep convection again . Thus , the depression strengthened into a tropical storm about 723 @. @ 9 miles (1 @, @ 165 km) south of the southern tip of Baja California . Tropical Storm Blanca experienced limited development , reaching its peak windspeed of 60 mph (95 km / h) early on June 20 . Then , the center of Blanca became exposed again and weakened into a tropical depression on June 21 . Finally , it dissipated on June 22 over colder waters about 1285 @. @ 9 miles (2 @, @ 380 km) southwest of the southern tip of Baja California . There were no casualties or damages attributed to this tropical cyclone .

== Hurricane Carlos ==

A tropical wave left the African coast on June 4 showing some cyclonic curvature in the low clouds . It passed Barbados six days later , where a low @-@ to @-@ mid wind shift was detected . The wave was followed by a low level wind surge which was observed in Curaçao on June 12 . Most of the shower activity associated with the wave moved westward over South America , and then over Panama on June 14 . The convection became organized and developed into Tropical Depression Three @-@ E on June 16 while it was located 348 miles (560 km) south of Salina Cruz . It became a tropical storm one day later . Carlos reached minimal hurricane strength on June 18 . Two days later , Carlos was briefly downgraded to tropical storm status . A strong high pressure system forced Carlos to move over warmer waters and Carlos began to reintensify . Carlos regained hurricane status and developed a well @-@ defined eye and excellent upper level outflow . On June 24 , Carlos peaked at 955 mbar (28 @. @ 2 inHg) central pressure and 115 mph (185 km / h) maximum sustained winds . The hurricane then weakened when it moved west over colder waters and encountered upper level shear . Carlos dissipated on June 27 . The National Hurricane Center received no reports of impact due to this tropical cyclone .

== Hurricane Delores ==

Delores developed from a tropical wave which moved from Africa to the Atlantic on June 7 . And it was not until June 22 when it gained organization and was identified as an area of disturbed weather south of Mexico .

The system immediately showed signs of rotation and it was designated Tropical Depression Four @-@ E the same day . It was centered about 516 miles (830 km) south @-@ southeast of Manzanillo , Mexico . Then , the depression reached storm strength , and was named Delores on June 24 while 143 miles (230 km) from the coast of Mexico . It rapidly intensified to a hurricane on June 25 as it approached to the coast . However it rapidly weakened and on June 27 it was downgraded to tropical storm status as it was moving over colder waters . Its deep convection gradually diminished and its west @-@ northwestward motion abruptly halted as the system was being sheared . It weakened to a depression on June 28 near Socorro Island and it dissipated on June 29 .

In response to Delores ' approach , the Mexican government issued a tropical storm warning and a hurricane watch from Ixtapa to Manzanillo on June 24 . The watch and the warning were dropped the next day . The cyclone remained far away enough that no reports of high winds were received . Satellite observations indicated that heavy rains fell in affected areas from June 23 to 26 . However , no damages or casualties were reported .

== Tropical Depression Five @-@ E ==

A tropical disturbance south of the Gulf of Tehuantepec became better organized on June 29 and became a tropical depression . Strengthening was very limited as the depression was approaching to land . It made landfall later that day very near of Salina Cruz , Oaxaca . As it continued its west @-@ northwest track , it dissipated inland after bringing torrential rains .

Five @-@ E caused the year 's lone fatality and caused the most significant damage . Five @-@ E destroyed up to 118 homes , injured 500 , and also caused two people to go missing . Rainfall totals as high as 9 @. 2 inches (230 mm) in 24 hours accompanied the depression over Mexico .

== Hurricane Enrique ==

Enrique formed from a westward @-@ moving tropical wave that crossed the Atlantic from June 30 to July 8 . A short @-@ lived cyclonic circulation center within the wave was detected on satellite imagery when the system was over the eastern Atlantic . However , persistent deep convection did not occur until the wave neared the Gulf of Tehuantepec in the eastern Pacific Ocean on July 11 . On July 12 , the convection became more concentrated about 500 nautical miles (930 km) south of Acapulco , near a mid @-@ level vortex within the wave ; however , it had diminished the next day . On July 14 it became better organized . Based on reports from satellite imagery the low had developed into the seasons season 's sixth tropical depression on July 15 . The depression intensified further and was upgraded to Tropical Storm Enrique the next day as it became better organized .

Enrique steadily intensified and by early on July 16 , the National Hurricane Center was anticipating for the system to reach hurricane intensity . Continuing to strengthen , it reached hurricane status On July 17 . However , this was for a short period of time as it developed an eye . Due to uncertainty in the storm 's intensity that day , it is possible that it could have been a hurricane earlier than originally estimated . Wind shear associated with a trough and passage over cooler waters caused Enrique to begin weakening and the cyclone center soon became exposed . Enrique was downgraded to a depression on July 19 and the weakening cyclone crossed into the central Pacific on July 20 . Enrique dissipated shortly thereafter . Enrique 's remnants managed to maintain a very weak center as it passed well to the north of the Hawaiian Islands and then passed near Midway Island . As the storm approached the International Dateline , the system started to redevelop . Shortly after crossing the dateline , Enrique became a tropical storm again on August 1 . It lasted for less than 24 hours before it lost its convection and thus the cyclone began to dissipate . No damages or casualties were caused by Enrique .

== Hurricane Fefa ==

A tropical wave became better organized and it developed into Tropical Depression Seven @-@ E while 976 miles (1570 km) south @-@ southeast of Cabo San Lucas on July 29 . The depression intensified quickly and became Tropical Storm Fefa the same day . Fefa continued to strengthen over the warm Pacific water and reached hurricane status on July 31 . Satellite imagery showed the appearance of an eye on August 1 . Fefa peaked on August 2 with a central pressure of 959 mbar (28 @. 3 inHg) and winds of 120 mph (195 km / h) , making it a Category 3 hurricane in the Saffir @-@ Simpson Hurricane Scale . Fefa crossed into the north central Pacific basin on August 5 . As it crossed , wind shear increased and Fefa began to weaken as it approached the Hawaiian Islands as a tropical storm on August 7 . Fefa passed over the Big Island and rapidly weakened back to a

tropical depression later that day . It finally dissipated on August 9 when northwest Kauai .

The remnants of Fefa caused heavy rains and strong winds in the counties of Hawaii and Kauai . Flash flooding was reported in the Kohala and Hamakua districts . Lightning injured two persons on the Big Island .

= = = Hurricane Guillermo = = =

A significant tropical wave with very little deep convection left Africa on July 22 . It crossed the Atlantic , with convection associated with its southern part passing over the Windward Islands on July 28 and crossing Central America on July 31 .

Signs of organization were evident late on August 2 when the wave was south of the Gulf of Tehuantepec . Then , on August 4 , Tropical Depression Eight @-@ E was formed while centered 348 miles (560 km) south @-@ southeast of Acapulco . Despite the presence of easterly shear , the depression gradually intensified as the center moved toward the west @-@ northwest , paralleling the coast of Mexico . Then , it reached tropical storm strength the same day . At that time , it was centered south @-@ southwest of Acapulco . It peaked on August 5 with a central pressure of 993 mbar (29 @.@ 3 inHg) and maximum sustained winds of 75 mph (121 km / h) while 255 miles (410 km) of Manzanillo , Colima . After its peak , Guillermo weakened to tropical storm status as it began losing convection . It subsequently weakened to a tropical depression and dissipated after that on August 10 . There were no damages or casualties associated with this tropical cyclone .

= = = Tropical Storm Hilda = = =

Satellite imagery showed a convective area with some cyclonic turning in connection with a tropical wave over Africa on July 22 . The convection gradually diminished as the system moved west @-@ southwest into the Atlantic . On July 31 , the wave passed south of Trinidad , where a low @-@ level wind shift was detected . For the next couple of days , this system passed over Venezuela and Colombia . Then it crossed into the Pacific basin . It was not until August 6 , while it was south of Guatemala , when the convection became organized . Then , the wave strengthened into a tropical depression about 230 miles (370 km / h) south @-@ southwest of Acapulco , on August 8 . The system intensified further and became Tropical Storm Hilda August 9 . The storm reached its peak intensity on August 11 with estimated 60 mph (100 km / h) maximum winds and a pressure of 993 hectopascals (29 @.@ 3 inHg) . The tropical storm moved on a general west @-@ northwest track for the next couple of days and then turned toward the north on August 13 as it was under the influence of an upper level trough . Later on that day , tropical storm force winds were reported on Guadalupe Island as the center of Hilda was located about 150 nautical miles (280 km) from the island .

Hilda gradually weakened over cool waters but maintained a rather large level of circulation . This caused its dissipation to be slower than normal . Tropical Depression Hilda dissipated on August 14 . Its large remnant circulation continued northwards and eventually passed over California . There were no casualties or damages attributed to this tropical cyclone . Hilda 's remnants caused rain as far north as San Francisco .

= = = Tropical Depression Ten @-@ E = = =

A tropical disturbance southwest of Manzanillo , Colima became a tropical depression on September 12 when its convection became persistent around a newly formed center of circulation . Conditions were not favorable for development because of strong wind shear environment caused by a trough . The depression took a northward track and dissipates on September 13 as it was being sheared just south of the Gulf of California .

Tropical Depression Ten @-@ E brought heavy showers to parts of Mexico . There were no reported deaths or damages .

== Tropical Storm Ignacio ==

On September 11 , a tropical wave entered the eastern Pacific . An area of convection developed when it was 286 miles (460 km) west of the southern tip of Baja California Peninsula . A trough axis extended southward from the low to the west of the convection . By September 15 , the area of disturbed weather included some convective bands . The organization of the convection improved and the cloud system became Tropical Depression Eleven @-@ E the next day . The trough that was near the depression moved the cyclone to the north @-@ northwest and during that period it strengthened and became Tropical Storm Ignacio , all on the same day . With time , the influence of the trough over Tropical Storm Ignacio diminished . The track of the tropical storm transcribed a small clockwise loop , and Ignacio reached the northernmost point of the loop on September 17 . The storm was centered about 28 miles (45 km) offshore and was near its peak intensity , 60 mph (100 km / h) . Further intensification was precluded by the storm 's proximity to land and by shear associated with the upper level low near the Baja California peninsula . As Ignacio turned toward the east , its forward motion slowed . When the storm began moving to the south , it lost its identity very rapidly . Ignacio weakened to depression status and dissipated six hours later . The remnants of Ignacio moved toward the west @-@ southwest over the next two days .

When Ignacio was closely approaching the coast of Mexico , a tropical storm warning was issued from Zihuatenejo to Cuyutan on September 16 . When Ignacio was forecast to move up the coast , the warnings were extended to Cabo Corrientes on September 17 . The warnings were dropped when the cyclone dissipated . Ignacio caused street flooding in Acapulco . Forty people were injured , but no further casualties or damage were reported . Rain fell over a large area of Mexico . The highest amount recorded was 15 @-@ 43 inches (392 mm) at Pasa de San Antonio .

== Hurricane Jimena ==

Part of the same tropical wave that formed Tropical Storm Danny in the Atlantic crossed over the Isthmus of Panama and became a disturbance in the Intertropical Convergence Zone during mid to late September . On September 20 the cloud pattern had increased in organization and the system was designated a tropical depression .

Continuing to strengthen , the depression became a tropical storm on September 21 . The tropical storm then headed towards the northwest . Development was rapid , especially after September 22 as a banding type eye was forming . Further rapid development took place by the following day and the maximum sustained winds increased to near 130 mph (210 km / h) by the afternoon of September 23 . Later , on September 24 , Jimena reached its peak with maximum winds of 140 mph (230 km / h) and a minimum central pressure of 945 hectopascals (27 @-@ 9 inHg) . Jimena maintained itself as a powerful hurricane for three days , moving west until September 26 , when it turned toward the west @-@ northwest . Jimena began to weaken on September 27 . A northwestward movement commenced on September 29 in response to a large upper level trough which developed in its northwest . It continued to weaken and on September 30 it regained tropical storm intensity before becoming downgraded to a depression . On October 2 , Jimena dissipated as a tropical cyclone . Hurricane Jimena caused no reported damage or casualties .

== Hurricane Kevin ==

Kevin formed from a westward @-@ moving tropical wave which emerged from the northwest coast of Africa on September 11 . The wave crossed into the Pacific basin on September 21 with no signs of development . Cloudiness and convection became better organized on the first hours of September 24 , becoming Tropical Depression Thirteen @-@ E the next day as it was located about 404 miles (650 km) southeast of Acapulco . Then the depression moved toward the west . The banding pattern became more pronounced and the depression was upgraded to Tropical Storm Kevin later that day , being centered about 316 miles (509 km) south @-@ southeast of Acapulco .

The convective banding increased for the next 24 hours and Kevin strengthened to hurricane status on September 26 , while 230 miles (370 km) south @-@ southwest of Acapulco . Kevin continued to strengthen and an eye intermittently appeared on September 27 and 28 .

By September 29 , Kevin had a well @-@ defined eye and this feature persisted for several days . The hurricane continued to strengthen and on October 1 reached its peak intensity while centered 404 miles (650 km) south @-@ southwest of the southern tip of Baja California , with estimated 145 mph (233 km / h) maximum winds and a minimum pressure of 935 mbar (27 @.@ 6 inHg) . Kevin was moving toward the west at this time . It turned toward the west @-@ southwest due to a strong high pressure system located northwest of the hurricane . Then , Kevin began to weaken gradually and its eye became poorly defined on October 4 . It weakened on October 6 as the hurricane began turning toward the northwest and continued this general motion for the next few days .

However , a well @-@ defined eye reappeared in the system and Kevin re @-@ intensified to a low @-@ end Category 3 hurricane with maximum winds of 115 mph (185 km / h) and a minimum pressure of 960 hectopascals (28 inHg) on October 7 . But this was short @-@ lived and on October 8 the hurricane began to weaken again and on October 9 it had entered into the Central Pacific basin as a waning Category 1 hurricane . After this crossing , it was subsequently downgraded to storm strength the same day and on October 11 , to a depression . It dissipated as a tropical cyclone that same day . The remnant circulation did persist a while longer as it slowly drifted north to finally lose its identity late on October 14 . Despite its long life , Hurricane Kevin caused no damage or casualties . Because Kevin passed north of Hawaii , its only effect on land was increased trade winds .

== Hurricane Linda ==

The tropical wave that ultimately produced Hurricane Linda emerged from the northwest coast of Africa on September 16 and tracked westward across the tropical Atlantic . The convection increased markedly upon approaching the Lesser Antilles on September 21 . The tropical wave 's northern portion split off to the north and caused showers in Jamaica , the Bahamas and Cuba while the southern part continued and crossed Panama into the Pacific basin on September 25 as a group of disorganized cloud clusters . It took many days to organize and it was not until October 3 when organization improved and the wave became Tropical Depression Fourteen @-@ E.

The tropical depression moved toward the northwest while strengthening and became Tropical Storm Linda within 12 hours . As Linda then drifted to the north it was upgraded to a hurricane on October 5 . Then , the hurricane reached its estimated peak intensity of 120 mph (190 km / h) and a minimum central pressure of 957 hectopascals (28 @.@ 3 inHg) that same day . Linda began to weaken as it was following Kevin 's track and entered to colder waters . Linda turned the west @-@ northwest and passed 50 nautical miles (90 km) from Socorro Island , where it caused 80 mph (130 km / h) sustained winds on October 7 . Later that day , Linda weakened to a tropical storm . On October 9 , as Linda was following Kevin 's track , the cyclone continued to weaken and was downgraded to a depression , although deep convection continued to intermittently appear . Finally , on early October 14 , Linda dissipated . There were no reported casualties or damages from Linda .

== Hurricane Marty ==

On October 5 , a tropical wave crossed Central America and it began to organize the next day . Based on satellite classifications , the weather system was upgraded to tropical depression status about 273 miles (440 km) south of the Gulf of Tehuantepec on October 7 . It became a tropical storm on October 8 and was named Marty . It reached hurricane status early on October 10 while moving parallel to the coast of Mexico . There were several occasions when an eye was becoming apparent in satellite imagery but it never fully developed . An upper trough over the Western United States forced Marty to moved toward the northwest and north for a while , bringing the hurricane to waters previously cooled by hurricanes Kevin and Linda . Then , Marty disorganized and weakened

into a tropical storm . Also , the trough which forced Marty northward moved out of the area , which made that Marty turned sharply to the west , then west @-@ southwest around a high pressure system . Marty weakened further and remained as a tropical depression . It finally dissipated on October 18 .

On October 8 , Marty was threatening enough to prompt the Mexican government to issue a tropical storm watch from Manzanillo to Acapulco . The warning was dropped on October 9 when Marty moved away . There were no associated casualties or damages with this tropical cyclone .

= = = Hurricane Nora = = =

On November 7 , an area of convection associated with a tropical wave developed into a tropical depression , while located about 560 mi (900 km) to the southeast of Acapulco , Mexico . During that day the depression moved towards the northwest , intensified into a tropical storm and was named Nora later that day . During the next day , the storm gradually intensified further while temporarily moving towards the west , due to the flow field around a strengthening high pressure system located to the north of Nora . During November 9 , the NHC noted that Nora had developed an eye , before reporting that the system had developed into a category one hurricane .

On November 9 , Nora . It peaked as a Category 2 hurricane on November 10 . A large trough moved in from the west and formed a low . Shear increased and disrupted Nora 's convection . The low also caused an abrupt change of course to the northeast . Nora weakened to a depression on November 11 and dissipated the next day . Nora 's remnants continued to the northeast , showing brief flare @-@ ups of convection . No deaths or damage were reported to have occurred in association with Nora , despite probable rainfall totals of around 3 in (76 mm) within the Mexican states of Sinaloa and Nayarit .

= = Storm names = =

The following names were used for named storms that formed in the eastern Pacific in 1991 . Names that were not assigned are marked in gray . The names not retired from this list were used again in the 1997 season . This is the same list used for the 1985 season . Also , the name " Dolores " was misspelled " Delores " in this season ; however in subsequent seasons , the typo was corrected .

? ? The initial spelling is Dolores , however the name Delores was used this season .

For storms that form in the Central Pacific Hurricane Center 's area of responsibility , encompassing the area between 140 degrees west and the International Date Line , all names are used in a series of four rotating lists . The next four names that were slated for use in 1991 are shown below , however none of them were used .

= = = Retirement = = =

The World Meteorological Organization retired one name in the spring of 1992 : Fefa . It was replaced in the 1997 season by Felicia .

= = Seasonal effects = =