

= Hurricane Paul (2012) =

Hurricane Paul was a tropical cyclone that threatened the Baja California peninsula during October 2012 . The sixteenth tropical cyclone , tenth hurricane , and fifth major hurricane of the season , Paul originated from a trough of low pressure west of the coastline of Mexico on October 13 . While turning towards the north , the system quickly organized , reaching hurricane status on the afternoon of October 15 . By that afternoon , Paul had reached its peak intensity as a Category 3 hurricane on the Saffir @-@ Simpson hurricane wind scale (SSHWS) with maximum sustained winds of 120 mph (195 km / h) , but began to weaken rapidly thereafter due to land interaction and strong wind shear . Late on October 17 , Paul degenerated into a remnant low . The remnants of Paul later moved ashore along the central Baja California Peninsula

Prior to the storm 's arrival in Baja California Sur , hurricane watches and warnings were issued for coastal locations . Hundreds of homes were damaged across the region and damage to infrastructure was significant . Power outages also occurred across the region as a result of Hurricane Paul . A total of 400 homes were destroyed , and 300 others were flooded . Damage totaled \$ 15 @.@ 5 million (2012 USD) .

= = Meteorological history = =

On September 28 , a tropical wave emerged off the western coast of Africa . Tracking westward , the northern portion of this wave axis led to the formation of Tropical Storm Oscar on October 3 while the southern portion of the wave continued across the central Atlantic . While approaching the Lesser Antilles the following day , the disturbance lost most of its thunderstorm activity and remained poorly organized across the remainder of its trek through the Caribbean Sea and Central America . On October 10 , the wave emerged into the East Pacific basin , at which time the National Hurricane Center (NHC) began monitoring the system .

Characterized with disorganized convection , a broad surface trough formed in association with the wave the same day and environmental conditions were expected to favor gradual development . Initially , upper @-@ level winds were only marginally favorable , and although the thunderstorms remained disorganized , the NHC estimated a 50 % chance for development by early on October 12 . The next day , the system became better defined , and , the NHC noted that the system was on the verge of becoming a tropical cyclone . Although operationally not classified until 2100 UTC on October 13 , a post @-@ season analysis conducted on the system revealed that it attained enough organization to be considered a tropical depression at 1200 UTC , while positioned about 645 mi (1040 km) south @-@ southwest of Cabo San Lucas .

Tracking westward around the southern periphery of a subtropical ridge , the depression steadily strengthened , intensifying into Tropical Storm Paul six hours after designation . On October 14 , an upper @-@ level low positioned west of the Baja California peninsula led to a break in the ridge which subsequently caused the tropical cyclone to slow and turn northward . During this change in direction , favorable atmospheric conditions allowed for a quick rate of intensification . Convective bands in association with Paul gained curvature and a central dense overcast feature became visible on satellite imagery . In addition , a series of microwave passes late in evening revealed a nearly closed eyewall . At 0600 UTC on October 15 , Paul was upgraded to a Category 1 hurricane on the SSHWS while located approximately 595 mi (960 km) southwest of Cabo San Lucas . Banding features continued to become better defined to the south and east of the center while convection in the eyewall cooled to ? 85 ° C (? 121 ° F) . The cloud pattern became increasingly symmetrical , and an eye became intermittently visible on satellite imagery later that morning . Following an abrupt increase in satellite intensity estimates , Paul was upgraded to a major hurricane , Category 3 on the SSHWS , the fifth of the season , at 1800 UTC on October 15 . Simultaneously , the hurricane also estimated to have attained its peak intensity of 120 miles per hour (195 km / h) .

Upon reaching its peak intensity , the hurricane began to steadily weaken . The cold ring of thunderstorm activity surrounding the eye warmed significantly while the eye became cloud @-@

filled and cool . The circulation became tilted north @-@ northeast with height , likely a byproduct of south @-@ southwesterly wind shear , and the system was downgraded to a Category 2 hurricane at 1200 UTC on October 16 . Accelerating northwestward within deep southwesterly flow , continued unfavorable upper @-@ level winds caused the low @-@ level center to rapidly separate from the convective mass . At 1800 UTC , Paul was downgraded to a Category 1 hurricane ; by this time , little deep thunderstorm activity remained near the center . Six hours later , the system was downgraded to a tropical storm while it passed 50 mi (80 km) west of Baja California Sur . The remainder of shower and thunderstorm activity dissipated early on October 17 and Paul was declared a post @-@ tropical cyclone at 0600 UTC . Following declassification , the system moved ashore Baja California Sur near Bahía Asunción while maintaining gale @-@ force winds . Late that evening , the remnant low @-@ level circulation dissipated about 70 mi (110 km) northwest of Punta Eugenia , Mexico .

= = Preparations = =

When the system first posed a threat to Mexico at 0900 UTC on October 15 , a tropical storm watch was posted for a portion of the central Baja California Peninsula . Six hours later , the watch was upgraded into a tropical storm warning , while tropical storm watches were issued to the north and south of the warning , respectively . At 2100 UTC on October 15 , the tropical storm warnings was upgraded into a hurricane warning , while a tropical storm warning was declared along the eastern side of the peninsula . Early the next day , the tropical storm warning was extended southward , to include the capital of La Paz . On the afternoon of October 16 , when the threat to the area increased , a hurricane warnings was posted for the eastern side of the state . Early the next day , all hurricane warnings were dropped , as Paul had deteriorated into a tropical storm . By 1500 UTC , all watches and warnings had been discontinued .

Prior to the arrival of Paul , activities were suspended for small craft in the ports of Cabo San Lucas , La Paz , San Carlos , Maria Magdalena , and Puerto Lopez Mateos . Moreover , all activities were closed in the port of Mazatlan . Twelve municipalities in Sonora were placed under a " green " alert , though this was quickly upgraded to a " yellow " alert , and later into an " orange " alert . A " blue " alert also declared for Colima , Jalisco , and Nayarit .

On October 16 , a " yellow " alert (moderate risk) was activated for Baja California Sur . State civil protection authorities brought teams from the federal electricity and water commissions to help maintain services during the storm . In addition , the state government opened 143 shelters , including 11 in the towns of Cabo San Lucas , La Paz , Ciudad Constitución , and Loreto , which had a capacity of 30 @,@ 617 persons . Furthermore , 125 cranes and 75 automobiles were mobilized . Statewide , 400 soldiers were deployed . Roughly 500 residents in Comondú were evacuated to shelter .

= = Impact and aftermath = =

During its formative stages , Paul passed near Clarion Island , where winds of 58 mph (93 km / h) and gusts of 77 mph (124 km / h) were recorded . On nearby Socorro Island , 1 @.@ 98 in (50 mm) of rain fell during the storm 's passage .

Even though there were no reports of hurricane @-@ force winds onshore the Baja California Peninsula (the storm weakened to a tropical sotrm when it made its closet approach to the region) , hurricane @-@ force winds did approach the peninsula , and there were widespread reports of gale @-@ force winds . In Puerto Cortes , peak winds of 51 mph (82 km / h) and gusts up to 72 mph (116 km / h) were observed , as well as a peak rainfall total over 6 @.@ 02 in (153 mm) . Furthermore , a minimum barometric pressure of 973 @.@ 4 millibars (28 @.@ 74 inHg) was observed in Cabo San Lucas .

The outer rainbands of the system first brought rains to Baja California Sur on October 15 , resulting in flooding . Around 30 % of Baja California Sur residents were without power at the height of Paul . Across the northern portion of the state , numerous roads were destroyed , especially near Loreto ,

where flooding caused a 45 ft (14 m) sinkhole to form . In addition , Mexican Federal Highway 11 was damaged in five locations from La Paz to Ciudad Constitucion . In Loreto , significant destruction occurred and many residents were rendered homeless . Two creeks overflowed their banks , destroying several homes . In Mulege , 300 homes were inundated , displacing 60 individuals to shelter . Thirty light poles were downed . The Puerto San Carlos area sustained the worst flooding from the storm , due to a combination of nearly a year 's worth of rainfall and storm surge , which toppled a dike . There , about 400 homes collapsed and around 40 % of the town 's houses received damage , forcing 300 people to seek shelter . In San Ignacio , 30 automobiles were swept away and power was lost to the city .

Across the city of La Paz , damage to roads was estimated at MX \$ 200 million (US \$ 15 @. @ 5 million) . In all , approximately 1 @, @ 000 dwellings were damaged in relation to Hurricane Paul ; many other homes across the region were left without electricity and running water . A total of 495 people were taken to shelters , including 93 in Ciudad Insurgentes and 300 in San Carlos . Overall , 5 @, @ 000 families or 16 @, @ 000 people were directly affected by the hurricane .

Elsewhere , in Sonora light rain was recorded . In the aftermath of the storm , the Mexican navy activated a plan to provide aid . A total of 130 troops toured the damaged areas via six vehicles . A state of emergency was declared for four municipalities in Baja California Sur . By October 18 , 95 % of all water , power , and road services had been restored . Roughly MX \$ 2 million (\$ 150 @, @ 000 2012 USD) was spent into to help rebuild businesses lost due to the storm .