

= Typhoon Betty (1987) =

Typhoon Betty , known in the Philippines as Typhoon Herming , was a powerful and destructive tropical cyclone that struck the Philippines in August 1987 . The seventh typhoon and second super typhoon of the active typhoon season , it formed from the monsoon trough that spawned a tropical cyclone on August 8 while around positioned well to the east of the Philippines . It drifted northwestward , becoming a tropical storm on August 9 and a typhoon on August 10 . Betty turned westward , where it rapidly intensified before attaining peak intensity on August 11 . The next day , Typhoon Betty made landfall in the central Philippines . Betty weakened rapidly over the country , but restrengthened somewhat over the South China Sea . Land interaction weakened Betty slightly before it hit central Vietnam on August 16 . The next day , Betty dissipated .

Across the Philippines , Typhoon Betty brought widespread flooding , which resulted in severe destruction . Damage added up to \$ 100 million (1987 USD) . In the Maguindanao and Albay provinces alone , 10 @, @ 000 people were evacuated and 1 @, @ 000 were homeless . However , the capital city of Manila avoided any serious damage . Nationwide , around 200 @, @ 000 people were reportedly homeless , 18 @, @ 000 of winch were from Marinduque and another 11 @, @ 400 resided on Mindoro Island . In the former , 4 @, @ 000 dwellings sustained damage , and all of the banana crop there was lost . In all , 25 @, @ 518 homes received damage . Roughly 400 @, @ 000 people were directly affected by the storm . Overall , 85 people were killed and 324 others were wounded . After striking the Philippines , six people were killed by Betty in Vietnam . Approximately 10 @, @ 000 structures were damaged and 103 people were injured . Elsewhere , in northern Thailand , one person was killed and three others were hurt by the typhoon . Several villages were flooded , and numerous streets were damaged .

= = Meteorological history = =

The origins of Typhoon Betty can be traced back to a tropical disturbance that was embedded in the monsoon trough on August 7 , which extended from the Marshall Islands westward to the Philippines . Intensity estimates via the Dvorak technique yielded winds of 50 km / h (30 mph) around 65 km (40 mi) north @-@ northwest of Belau in the western Caroline Islands . Following a rapid increase in organization , the Joint Typhoon Warning Center (JTWC) issued a Tropical Cyclone Formation Alert (TCFA) for the system early on August 8 . Meanwhile , the Japan Meteorological Agency (JMA) started tracking the system . Around this time , the Philippine Atmospheric , Geophysical and Astronomical Services Administration also monitored the storm and assigned it with the local name Herming . Early on August 9 , Betty intensified into a tropical storm about 1 @, @ 320 km (820 mi) east @-@ southeast of Manila during the morning of August 9 .

Betty continued to intensify , and by midday , the storm attained winds of 80 km / h (50 mph) . By the evening of August 9 , the JMA upgraded Betty to a severe tropical storm . At 0000 UTC on August 10 , both the JMA and JTWC believed that Betty attained typhoon intensity . Tracking westward Betty began an episode of explosive deepening as expected by the JTWC . At noon , the JTWC reported that Betty attained winds of 160 km / h (99 mph) , equivalent to a Category 2 hurricane on the United States Saffir @-@ Simpson Hurricane Wind Scale (SSHWS) . By 0000 UTC on August 11 , the agency upgraded Betty to an equivalent of a Category 4 hurricane . Later that day , the JMA estimated that Betty attained its peak maximum sustained wind of 190 km / h (120 mph) and a minimum barometric pressure of 890 mbar (26 inHg) . However , the JTWC indicated that the system was considerably stronger , with maximum sustained winds of 260 km / h (160 mph) . This concluded the storm intensification period ; according to the JTWC , Betty strengthened 93 mbar (2 @. @ 7 inHg) in a 37 @-@ hour time frame . Furthermore , Betty was the deepest storm of the season , and one of the most powerful storms ever recorded .

At peak , which it maintained for 12 hours , Betty exhibited a small but well @-@ defined eye surrounded by very cold cloud tops . Thereafter , Betty began to weaken as it moved over the central Philippines . Accelerating , Betty continued on a westward track while passing south of a subtropical ridge . According to the JTWC , winds quickly decreased to 190 km / h (120 mph) , and

by the time it emerged into the South China Sea early on August 13 , the typhoon 's winds had diminished to 180 km / h (110 mph) , equivalent to a high @-@ end Category 2 on the SSHWS . The JMA estimated that Betty was slightly weaker , with winds of 170 km / h (105 mph) . Moving west @-@ northwest , Betty began to deepen over open water . By midday , the JMA increased the intensity of Typhoon Betty to 110 mph (180 km / h) . On the morning of August 14 , the JTWC remarked that Betty reached its secondary peak intensity of 210 km / h (130 mph) . Despite this , intensity estimates from the JMA note that Betty did not intensify any further .

After attaining its secondary peak intensity , Betty began to deteriorate as it began to interact with Vietnam . After entering the Gulf of Tonkin , Betty made landfall 350 km (215 mi) south of Hanoi in northern Vietnam on August 16 . At the time of landfall , the JMA estimated winds of 135 km / h (85 mph) and the JTWC estimated winds of 140 km / h (85 mph) . According to the JMA , Betty weakened to a tropical storm on evening of August 16 . It then swept across Laos and eventually dissipated over northern Thailand near Chiang Mai during the evening of August 17 .

= = Preparations , impact , and aftermath = =

Under the anticipation that Betty would strike the Philippines , weather alerts were issued in 11 provinces . Manila was placed on " stage three " alert initially , but after the storm passed south of the city , it was downgraded to " stage two " alert . School classes were suspended and residents in low @-@ lying areas were asked to be ready to evacuate . Warnings urging residents to prepare for the storm were broadcast via television . Eighteen ships were also evacuated . Many radio stations were closed .

Typhoon Betty battered the Philippines at peak intensity , bringing heavy rains while also becoming the deepest tropical cyclone to affect the island nation since Typhoon Ike of the 1984 Pacific typhoon season . It also leveled trees and crops , demolished houses , and knocked down power lines . Many highways , crops , buildings , and homes were destroyed .

Eight @-@ five people perished as a result of Typhoon Betty while 17 were reported missing . Two people were killed in San Pablo ; four died in the city of Batangas . Five people were killed when they drowned in when their boat was capsized in the rough waters of the Pacific . One person was missing and five others were injured . In the Laguna province , three people , including a 6 year old boy were killed . In the resort of Tagaytay , many homes lost their roofs . Communication was lost in the Quezon province . Elsewhere , roughly 2 @, @ 500 individuals were evacuated to shelter in Legazpi , many of whom were housed in schools and churches . However , the metropolis of Manila escaped any major damage , although power was lost in some places .

Along the Maguindanao and Albay provinces , 10 @, @ 000 people were evacuated and crop damage totaled \$ 50 @, @ 000 ; in the latter alone , 1 @, @ 000 families were displaced . Typhoon Betty also destroyed 70 homes on Masbate Island , forcing the evacuation of 412 . Five people were also killed on the island . In Marinduque , five casualties occurred and at least 4 @, @ 000 houses were damaged . There , 100 % of all banana and coconut trees were destroyed . The Sorsogon province sustained the worst effects from the storm , where there were 18 fatalities and at least 57 @, @ 000 homes were demolished . Moreover , 19 people died on Samar Island . Six fisherman were also listed as missing .

Along southern Luzon , railway service was suspended and 11 domestic flights in and out of the country on August 12 were cancelled . The next day , Philippine Airlines called off all domestic flights , including three flights each to Hong Kong , Taipei and Tokyo were cancelled . Trading was suspended on the Manila and Makati stock exchanges for a day .

Overall , damage amounted to more than PHP 2 billion (\$ 100 million 1987 USD) , including \$ 6 million in the provinces of Batangas and Samar . Damage to roads totaled \$ 2 @. @ 1 million . Nationwide , around 200 @, @ 000 people were reportedly homeless , including 18 @, @ 000 in Marinduque and 11 @, @ 400 on Mindoro Island . A total of 25 @, @ 518 homes were damaged . Roughly 400 @, @ 000 people were directly affected by the storm , 371 of which were injured . A few months following the passage of Betty , the nation itself was hit by Typhoon Nina .

After striking the Philippines , six people were killed by Betty in Vietnam . Approximately 10 @, @

000 structures were damaged and 103 people were wounded . Nearly 25 @,@ 000 acres (10 @,@ 000 ha) of rice fields were destroyed and nearly 10 @,@ 000 acres (4 @,@ 000 ha) of other farmland sustained damage In northern Thailand , one person was killed and three others were hurt by the typhoon . Several villages were flooded , and many roads were damaged .

Following the storm , Philippine President Corazon Aquino declared a state of calamity in more than a dozen provinces . Within a few days after Betty hit , the Philippine Airlines resumed normal flight schedules and schools were reopened .