

= Typhoon Kirogi (2000) =

Typhoon Kirogi , known in the Philippines as Typhoon Ditang , was a large typhoon that caused severe damage in Japan during early July 2000 . Forming out of an area of disturbed weather on June 30 , Kirogi initially tracked slowly towards the north . On July 3 , the storm underwent rapid intensification and attained Category 4 status on the Saffir ? Simpson Hurricane Scale the next day , according to the JTWC . On July 5 , the Japan Meteorological Agency (JMA) assessed the storm to have reached its peak intensity with winds of 155 km / h (100 mph 10 @-@ minute sustained) and a barometric pressure of 940 mbar (hPa ; 27 @.@ 76 inHg) . Over the following several days , the storm tracked towards the northeast and accelerated towards Japan . Early on July 8 , Kirogi brushed eastern Japan before transitioning into an extratropical cyclone .

Initial news reports stated that Kirogi produced deadly flooding in the Philippines ; however , the storm was too far from the country to have any impacts . In Japan , Kirogi produced torrential rainfall and high winds , killing five people and leaving 15 billion (2001 JPY , \$ 140 million USD) in damages . Flooding inundated nearly 1 @,@ 300 homes around Tokyo and high winds cut power to roughly 20 @,@ 000 residences . Three homes were destroyed in a landslide on Kozushima .

= = Meteorological history = =

Typhoon Kirogi originated out of a disorganized area of showers and thunderstorms on June 30 , 2000 , associated with a weak area of low pressure , situated roughly 650 km (405 mi) east of the Philippine island of Mindanao . The system remained nearly stationary for two days as it became increasingly organized . On July 1 , the Joint Typhoon Warning Center (JTWC) issued a Tropical Cyclone Formation Alert as they anticipated the low to develop into a significant tropical cyclone within 24 hours . Around 0600 UTC the following day , the Japan Meteorological Agency (JMA) began monitoring the system as a tropical depression . At the same time , the JTWC also classified the system as Tropical Depression 05W and six hours later , the Philippine Atmospheric , Geophysical and Astronomical Services Administration (PAGASA) began issuing advisories on the same system , classifying it as Tropical Depression Ditang .

Throughout the day on July 2 , the depression began to take a slow northward track in response to a mid @-@ level subtropical ridge to the east and later that day , the JTWC upgraded it to a tropical storm . Early the next day , the JMA also upgraded the system to a tropical storm , at which time it received the name Kirogi . Although a broad cyclone , convection was gradually wrapping around the southern periphery of the circulation . Several hours after being named , the JMA upgraded Kirogi to a severe tropical storm and later a typhoon . At the same time , the JTWC classified the storm as a typhoon . Upon being upgraded the typhoon featured a well @-@ developed outflow and prominent banding features consolidating around the system .

Not long after attaining typhoon intensity , Kirogi began to undergo rapid intensification . Roughly 18 hours later , the JTWC reported that the storm had attained its peak intensity with winds of 215 km / h (135 mph 1 @-@ minute sustained) , equivalent to a Category 4 hurricane on the Saffir ? Simpson Hurricane Scale . By this time , the typhoon was situated roughly 870 km (540 mi) southeast of Okinawa . The storm featured a 59 km (37 mi) wide symmetrical eye . Early on July 5 , the JMA reported that Kirogi attained its peak intensity with winds of 155 km / h (100 mph 10 @-@ minute sustained) and a barometric pressure of 940 mbar (hPa ; 27 @.@ 76 inHg) . The storm was a relatively large typhoon , with a gale diameter of 520 km (325 mi) .

Several hours after attaining peak intensity on July 5 , a mid @-@ level trough caused convection around the center of Kirogi to weaken and the eye became cloud @-@ filled . Later in the day , most of the convective bands were confined to the eastern periphery of the system . Around this time , the storm took a northeasterly track , which it maintained for several days . Increasing in forward motion , the storm began to weaken ; however , it also grew in size . By July 6 , the storm had a gale @-@ diameter of 925 km (575 mi) . Gradual weakening took place as Kirogi tracked towards Japan , with both the JTWC and JMA reporting sustained winds at 140 km / h (85 mph) by July 7 . Early on July 8 , the storm brushed the eastern coast of Japan near Ch?shi , Chiba with winds of 130 km / h (

80 mph 10 @-@ minute sustained) . Several hours later , the typhoon weakened to a severe tropical storm before transitioning into an extratropical cyclone near the southeast coast of Hokkaido . By this time , the storm took a sharp eastward turn and briefly slowed before re @-@ accelerating . The remnants of the storm persisted until July 10 , at which time it dissipated to the southwest of the Aleutian Islands .

To measure wind speeds at the storm 's center , the Japan Meteorological Agency and Joint Typhoon Warning Center use 10 @-@ minute sustained winds and one @-@ minute sustained winds respectively . The conversion factor between 10 @-@ minute and one @-@ minute winds is 1.14x. The JMA 's peak intensity for Kirogi was 155 km / h (100 mph) 10 @-@ minute sustained , or 185 km / h (115 mph) one @-@ minute sustained . The JTWC 's peak intensity for Kirogi was 215 km / h (135 mph) one @-@ minute sustained , or 185 km / h (115 mph) 10 @-@ minute sustained .

= = Preparations and impact = =

= = = Philippines = = =

In the typhoon 's early stages , news reports stated that the outer bands of the storm produced heavy rainfall in the Philippines , resulting in 16 fatalities . However , a meteorological analysis of the storm showed that Kirogi was not responsible for the rain ; instead , a monsoon depression that later became Typhoon Kai @-@ tak caused the flooding rains . Typhoon Kirogi was never closer than 835 km (520 mi) from the Philippines . However , large swells produced by the storm caused moderate damage along coastal areas of the Philippines , forcing workers in Manila to clear debris left by the damaging waves .

= = = Japan = = =

In Japan , Kirogi became the first typhoon to threaten the city of Tokyo since a storm in the 1989 Pacific typhoon season , prompting hundreds of residents to evacuate . A total of 120 flights were canceled ahead of the storm and 30 ferry services were halted due to rough seas up to 9 m (30 ft) . On Kozushima , 788 residents were evacuated as heavy rain from the typhoon produced landslides . Forecasters warned that upwards of 250 mm (9 @. @ 8 in) of rain could fall in the Tokyo region . In the city of Tokyo , Japanese officials ordered 800 residents to evacuate to shelters due to the threat of Typhoon Kirogi .

Since the storm weakened considerably from its peak intensity , damage was much less than initially anticipated . In all , damages from the storm amounted to 15 billion (2001 JPY , \$ 140 million USD) . Three people were killed by the storm , all of whom were found in irrigation ditches . The first fatality was an 81 @-@ year @-@ old man , the second was a 30 @-@ year @-@ old man who lost control of his car and crashed into a ditch , and the last fatality was a 3 @-@ year @-@ old boy who fell in a ditch near his home . Two 11 @-@ year @-@ old boys , initially reported as missing , were later found in a ditch after being swept away by flood waters .

About 1 @, @ 300 homes were inundated by flood waters around Tokyo and three were destroyed on K?zushima by a landslide . Widespread power outages took place , leaving an estimated 20 @, @ 000 people without power in Kanagawa and Shizuoka prefectures as winds up to 177 km / h (110 mph) knocked down trees and power lines . Rainfall from the storm fell at rates of 55 mm / h (2 @. @ 2 in / h) . Total amounts reached 416 mm (16 @. @ 4 in) in Tokyo , 400 mm (16 in) on Izu ?shima and 357 mm (14 @. @ 1 in) in Ogatsu , Miyagi Prefecture . These rains were more than double the monthly average for July in eastern Japan .

Rainfall up to 182 mm (7 @. @ 2 in) caused flooding throughout eastern Hokkaid? , resulting in widespread agricultural losses . Throughout Aomori Prefecture , large stretches of roads were washed out by flood waters and several thousand homes were inundated . Damage from the storm in Aomori was estimated at 600 million (2001 JPY , \$ 6 @. @ 6 million USD) . In Obihiro , Hokkaid?

, a total of 2 @, @ 957 ha (7 @, @ 310 acres) of agricultural land was inundated by flood waters . The fishing industry in Urakawa District , Hokkaid? sustained severe losses , amounting to 889 million (2001 JPY , \$ 10 million USD) . High winds in the district resulted in moderate roof damage to several homes , some of which lost their roofs .