

## = Tropical Storm Cyprien =

Severe Tropical Storm Cyprien ( JTWC designation : 08S ) was a short @-@ lived tropical cyclone that caused minor damage in Madagascar . Forming on December 30 , 2001 , Cyprien quickly strengthened in a slightly favorable environment . By January 2 , the storm attained its peak intensity with winds of 100 km / h ( 65 mph ) according to Météo @-@ France and 95 km / h ( 60 mph ) according to the Joint Typhoon Warning Center . Later that day the storm made landfall in Morombe , at a weaker intensity , and dissipated early on January 3 . Throughout the affected areas , Cyprien destroyed 957 structures , leaving 1 @.@ 16 billion Malagasy franc ( 2002 MGF ; US \$ 181 @,@ 000 ) in damages . No fatalities were reported ; however two people were listed as missing .

## = Meteorological history =

On December 26 , a cold front exited Mozambique in southeastern Africa into the Mozambique channel . Upon reaching open waters , the front developed an area of convection and later a circulation just inland from the coast on December 27 . The front dissipated but the circulation remained as a distinct low pressure area . Although there was high wind shear in the area , good divergence allowed for convection to continue developing . On December 30 , Météo @-@ France ( MFR ) , the Regional Specialized Meteorological Center , designated the system as a tropical disturbance . Over the next two days , convection became increasingly organized , with banding features developing by December 31 . That day , MFR upgraded the disturbance to a tropical depression , and around 0900 UTC , the Joint Typhoon Warning Center ( JTWC ) issued a Tropical Cyclone Formation Alert . Decreasing wind shear and moderate outflow would allow the system to intensify into a tropical storm .

On January 1 , 2002 , the JTWC classified the depression as a tropical storm , designating it as Tropical Cyclone 08S . The system rapidly organized shortly after and was further upgraded to a moderate tropical storm by Météo @-@ France at 0600 UTC , at which time the Meteorological Service of Madagascar gave it the name Cyprien . In response to a mid to upper @-@ level subtropical high pressure area , the storm tracked in a general eastward direction at 16 km / h ( 10 mph ) . Several hours after being named , the JTWC assessed Cyprien to have reached its peak winds of 95 km / h ( 60 mph 1 @-@ minute winds ) . QuickSCAT satellite passes indicated areas of 100 km / h ( 65 mph ) winds early on January 2 , prompting Météo @-@ France to upgrade Cyprien to a severe tropical storm , with winds peaking at 100 km / h ( 65 mph 10 @-@ minute winds ) . By this time , the central barometric pressure fell to 980 hPa ( mbar ) .

Later on January 2 , the combination of the subtropical ridge to the north , an approaching mid @-@ latitude trough and moderate to strong westerlies caused Severe Tropical Storm Cyprien to turn towards the southwest . Slight weakening took place shortly before the storm made landfall in Morombe ; maximum winds decreased to 50 mph ( 85 km / h 10 @-@ minute winds ) . Increased wind shear and interaction with land caused the deep convection to become substantially displaced to the east from the center of circulation . Early on January 3 , Cyprien was downgraded to a tropical depression by both agencies ; however , some areas were still reporting gale @-@ force winds . It turned to the northeast over land , dissipating late on January 3 .

## = Impact and aftermath =

The precursor to Cyprien dropped heavy rainfall in Mozambique , including 92 mm ( 3 @.@ 6 in ) in Beira .

Due to the low @-@ intensity of the storm , damages in southwestern Madagascar were moderate . Cyprien produced wind gusts as strong as 180 km / h ( 110 mph ) . Heavy rains also fell throughout the region , peaking at 232 mm ( 9 @.@ 1 in ) . The hardest hit area was the city of Morombe ; a total of 900 people in the city were affected by the storm and two people were reportedly missing . Following an assessment of the storm 's impact , 180 homes and 16 administrative buildings were

found to have been destroyed by Cyprien . Damages in the area amounted to 1 @. @ 1 billion Malagasy franc ( 2002 MGF ; US \$ 172 @, @ 507 ) . North of Morombe , the city of Morondava also sustained significant damage ; roughly 1 @, @ 000 people were affected and 661 homes were destroyed . Numerous homes were inundated by floodwaters . Officials reported that floodwaters persisted until January 9 . Damages in the city amounted to 60 million MGF ( 2002 MGF ; US \$ 9 @, @ 287 ) . In all , damages from the storm amounted to 1 @. @ 16 billion MGF ( 2002 MGF ; ~ US \$ 181 @, @ 000 ) .

Following Cyprien , the Government of Madagascar did not request international assistance in post @- @ storm recovery . By January 10 , a cargo plane carrying 65 million MGF ( 2002 MGF ; US \$ 10 @, @ 062 ) worth of relief supplies was deployed to the affected regions . The supplies , consisting of medical supplies , tents , and one tonne of rice , were given to local authorities to be distributed to the affected population . Sanitary items were also distributed by the government to avoid an outbreak of water @- @ borne diseases such as diarrhea and cholera .