= 2000 ? 01 South @-@ West Indian Ocean cyclone season =

The 2000 @-@ 01 South @-@ West Indian Ocean cyclone season was fairly quiet with only five named storms , although there was an additional unnamed tropical storm and two subtropical cyclones with gale @-@ force winds . It started early , with a tropical disturbance forming on August 1 ? the first day of the cyclone year . However , the first named storm , Ando , was not named until January 2 , which at the time was the 4th latest on record . Ando would become the most intense cyclone of the year , reaching peak winds of 195 km / h (120 mph) according to the Météo @-@ France office (MFR) on Réunion , the official Regional Specialized Meteorological Center for the basin . The agency tracked storms south of the Equator and west of 90 ° E to the east coast of Africa .

In addition to being the strongest storm , Cyclone Ando was one of two deadly storms during the season . It passed about 205 km (105 mi) west of Réunion , producing 1 @,@ 255 mm (49 @.@ 4 in) of rainfall in the mountainous peaks . The rains led to flooding that killed two people . Ando was one of three storms to attain tropical cyclone status ? winds of at least 120 km / h (75 mph) ? in the month of January . The others were Bindu , which alternated its trajectory several times over open waters , and Charly , which rapidly weakened after encountering hostile wind shear . The next storm to form was Tropical Cyclone Dera , which intensified near Mozambique in early March and killed two people there due to flooding rains . It later moved southward through the Mozambique Channel , maintaining its intensity unusually far to the south before becoming extratropical . There was a month of inactivity in March , including three weeks in which there were no storms worldwide , the first such instance . Subsequently , two storms formed in early April ; one was a small , unnamed tropical storm , and the other was Severe Tropical Storm Evariste , which brought light rainfall to two islands . The season ended with an unusual subtropical storm forming rapidly in the southern Mozambique Channel on June 19 , the only such storm to form in that body of water in the month . It became the strongest storm on record for so late in the season , although it weakened without affecting land , dissipating on June 24 .

= = Season summary = =

During the season , the Météo @-@ France office (MFR) on Réunion island issued warnings in tropical cyclones within the basin . The agency estimated intensity through the Dvorak technique , and warned on tropical cyclones in the region from the coast of Africa to 90 ° E , south of the equator to 30 ° S. At the time , the cyclone year was from August 1 to July 31 of the subsequent year . The Joint Typhoon Warning Center (JTWC) , which is a joint United States Navy ? United States Air Force task force , also issued tropical cyclone warnings for the southwestern Indian Ocean in an unofficial capacity .

Aside from a tropical disturbance in August , the season began later than usual , the fourth consecutive season to do so . At the time it had the 4th latest start on record for the first named storm . Only about 20 % of seasons have their first storm form after the middle of December , and the first named storm of this season , Ando , did not become a tropical storm until early January . However , January was active with three tropical cyclones , two of which became intense tropical cyclones , due to the active phase of the Madden ? Julian oscillation (MJO) . February returned to a period of inactivity , and generally there was minimal convection across the basin due to unusually dry air . This was spread by a powerful and persistent ridge that extended eastward from Madagascar , as well as an inactive phase of the MJO . Drought conditions occurred on Réunion due to the lack of rainfall . After three weeks of no tropical cyclones developing worldwide , an event unseen since 1995 , the tropics became active again in early April .

In contrast with the busy preceding season , this season had much lower activity than usual , with only 36 days in which there was a tropical storm or cyclone active ; this was 17 less than normal . However , the number of days with a tropical cyclone was slightly above normal at 15 . In general , the southern hemisphere as a whole had the least active season since 1954 . There were only five named storms , only the fifth such time since the beginning of the satellite era in 1967 . As most

storms formed toward the eastern periphery of the basin , damage was much less than the preceding year .

= = Storms = =

= = = Intense Tropical Cyclone Ando = = =

The beginnings of Ando can be traced to a circulation within the Intertropical Convergence Zone (ITCZ) about 400 km (250 mi) south @-@ west of Diego Garcia , which became evident on satellite imagery on December 30 . Associated convection , or thunderstorms , gradually organized into a central dense overcast , and the system became Tropical Disturbance 3 at 06 : 00 UTC on December 31 . The upper @-@ level environment generally favored further development , but the system failed to develop more initially due to some easterly wind shear . A large ridge to the south steered the nascent disturbance to the west @-@ southwest . After the shear subsided , the system intensified into a moderate tropical storm on January 2 , given the name " Ando " by the Mauritius Meteorological Service . Also on that day , the JTWC began issuing advisories on the storm as Tropical Cyclone 04S , and around that time , Ando was passing about 465 km (290 mi) east @-@ southeast of Agalega island .

Ando rapidly intensified after forming and attained tropical cyclone status early on January 4 , developing an eye in the center of the thunderstorms and outflow to the east . A tropical low over the southern Mozambique Channel weakened the ridge , causing Ando to turn more to the southwest . Late on January 4 , the storm intensified further into an intense tropical cyclone , and early the next day passed about 120 km (75 mi) northeast of Tromelin Island . According to the JTWC , however , Ando attained peak 1 minute winds of 220 km / h (140 mph) late on January 5 . In contrast , the MFR assessed Ando as weakening due to the becoming larger and less defined , while still maintaining a small cloud diameter of about 400 km (250 mi) . However , the eye re @-@ organized , and Ando attained peak 10 minute winds of 195 km / h (120 mph) on January 6 , with a 60 km (35 mi) eye at the time . Continuing around the ridge , the cyclone passed about 205 km (125 mi) west of Réunion that day before starting to weaken due to increased wind shear . On January 8 , Ando weakened below tropical cyclone status , and the convection increasingly separated from the circulation while turning to the southeast . On January 10 , the storm became extratropical , although the remnants turned back to the northwest due to the ridge , dissipating on January 13 .

As a developing storm , Ando produced some heavy rain between December 30 and January 2 over Seychelles . Swaziland also reported that Ando drew moisture from the continent , aggravating a persistent dry spell . While near Agalega island , Ando dropped 108 mm (4 @.@ 3 in) of rainfall , compared to a January average precipitation there of 150 mm (5 @.@ 9 in) . On Tromelin Island , gusts peaked at 125 km / h (78 mph) and rainfall reached 141 mm (5 @.@ 6 in) . Passing north of Réunion , Ando produced gusts of 70 km / h (45 mph) along the coast , but 133 km / h (83 mph) was recorded at Plaine des Cafres in the mountainous peaks . Most parts of the island did not receive much rain , with the exception of mountainous peaks due to orographic lift , particularly after the center passed to the west . Pas de Bellecombe at an elevation of 2 @,@ 200 m (7 @,@ 200 ft) reported 1 @,@ 255 mm (49 @.@ 4 in) over 48 hours . The rains caused flooding and some landslides , which washed away one house and killed two people . Ando also damaged crops and killed several livestock . The highest wave recorded was 5 @.@ 4 m (18 ft) in La Possession . High waves injured several people , several of whom required rescue from lifeguards .

= = = Tropical Cyclone Bindu = = =

On January 2 , an area of convection persisted in the eastern portion of the ITCZ in the Australian basin , located northwest of Cocos Island , or about 1165 km (625 mi) southwest of Sumatra . With a ridge to the south , the system moved generally westward . A nearby ship confirmed that a

circulation formed , and on January 3 , it crossed 90 ° E into the south @-@ west Indian Ocean as a tropical disturbance . With easterly wind shear , the system initially remained weak , but convection increased and organized on January 5 . On the next day , the disturbance intensified into a tropical depression , although the circulation was still exposed from the thunderstorms at that time . After turning to the southwest , wind shear decreased , and the depression became Moderate Tropical Storm Bindu on January 7 . On the same day , the JTWC also initiated advisories as Tropical Cyclone 05S . Moving around the ridge to the south , Bindu slowly intensified , developing outflow and improved rainbands . Early on January 9 , the MFR upgraded the storm to tropical cyclone status as an eye 19 km (12 mi) in diameter formed . The next day , Bindu weakened due to increased wind shear , causing the circulation to be exposed from the convection and for the cyclone to be downgraded into a severe tropical storm .

The building ridge caused the storm to slow and turn back to the west . After the formerly hostile shear relaxed , Bindu became a tropical cyclone again on January 11 , redeveloping an eye . On the next day , the MFR estimated peak 10 minute winds of 150 km / h (90 mph) , while the JTWC estimated maximum 1 minute winds of 185 km / h (115 mph) . By that time , the cyclone had turned back to the south @-@ southwest . Drier air and wind shear resulted in weakening , and Bindu was downgraded to a severe tropical storm on January 14 . At 18 : 00 UTC the next day , the storm passed about 140 km (85 mi) southeast of Rodrigues island , by which time the circulation was exposed north of the dwindling convection . The MFR downgraded Bindu to tropical depression status on January 16 . An approaching trough turned the system to the south on the next day , and Bindu became extratropical late on January 17 . The remnants turned sharply eastward due to a ridge , later looping back to the west on January 20 . Another trough turned the storm southward on January 21 and absorbed the circulation the next day .

= = = Intense Tropical Cyclone Charly = = =

A small circulation formed north of the Cocos Islands on January 8 within the near @-@ equatorial trough . For about a week , it drifted west @-@ southwestward without much development , although an area of convection formed within the system on January 11 about 1240 km (770 mi) southwest of Sumatra . Persistent wind shear prevented much strengthening , and the circulation crossed into the south @-@ west Indian Ocean on January 16 . Another increase in convection merited its classification as a tropical disturbance on the next day , which organized into a central dense overcast . Slow development continued , allowing the disturbance to become a tropical depression and later Tropical Storm Charly on January 19 . On the same day , the JTWC also began tracking it as Tropical Cyclone 06S . Taking a track similar to earlier Tropical Cyclone Bindu , the storm moved southwestward around a ridge to the south . Charly gradually developed outflow and increasingly organized convection due to decreasing wind shear . A ragged eye formed on January 20 and became better defined , and early on January 21 , Charly intensified into a tropical cyclone .

By January 22 , Charly developed a 37 km (23 mi) wide eye , surrounded by deep convection . Based on the increased organization , the storm became an intense tropical cyclone , reaching peak 10 minute winds of 185 km / h (115 mph) , according to the MFR . In contrast , the JTWC estimated peak 1 minute winds of 195 km / h (120 mph) . Late on January 22 , the wind shear and dry air increased while waters became cooler , all of which became detrimental to the storm 's structure . The eye rapidly dissipated as the convection dwindled , and within 24 hours of peak intensity , Charly was downgraded to tropical storm status . On January 24 , the storm passed about 320 km (200 mi) southeast of Rodrigues . By that time , the circulation was exposed from the thunderstorms , and Charly weakened to tropical depression status on January 25 . Caught in the weak low @-@ level flow , the circulation moved erratically , first to the west , then drifting before turning to the southeast . It continued to produce some convection during this time , which spread rainfall over Mauritius and Réunion . A cold front swept Charly to the southeast , absorbing it on January 31 .

= = = Tropical Cyclone Dera = = =

After an extended period of inactivity lasting nearly a month , the ITCZ produced an area of convection on March 1 between Diego Garcia and the Seychelles . There were initially two weak circulations , although the one south @-@ southwest of Diego Garcia ultimately became Cyclone Dera . It moved southwestward without much development at first due to hostile wind shear , with the circulation often exposed from the thunderstorms . On March 4 , the system developed into a tropical disturbance off the northeast coast of Madagascar . Two days later , the storm moved ashore Madagascar about 50 km (30 mi) southeast of Antsiranana . It weakened and became indistinct over land , emerging into the Mozambique Channel near Nosy Be as a weak low . Convection gradually increased across the region as the track shifted westward . After moving toward Mozambique , the system rounded the ridge and turned to the south just off the coast , passing only 10 km (6 mi) east of Angoche . Around that time , the thunderstorms began organizing more , allowing the disturbance to intensify into a tropical depression on March 8 . With warm waters and an anticyclone providing outflow , the depression quickly intensified , becoming Tropical Storm Dera on March 9 and soon after developing an eye feature . Also on that day , the JTWC initiated advisories on the system as Tropical Cyclone 15S .

Late on March 9 , Dera passed about 20 km (12 mi) east of Europa Island , although the large eye passed over the island . On March 10 , Dera attained tropical cyclone status , and after a brief bout of wind shear , the eye became better defined . The cyclone attained peak 10 minute winds of 150 km / h (90 mph) on March 11 , according to the MFR , and 1 minute winds of 165 km / h (105 mph) according to the JTWC . Despite being located unusually far to the south , Dera maintained its intensity due to warm waters , and it accelerated southeastward due to an approaching cold front . Wind shear increased on March 12 , and only on that day did water temperatures drop off , causing a marked decrease in intensity and for the eye to dissipate . Late on March 12 , Dera became extratropical , which continued southeastward along the cold front .

The precursor of Dera dropped heavy rainfall in Mayotte , reaching 193 mm (7 @.@ 6 in) on Pamanzi . The precipitation came in intense squalls , with hourly peaks of 49 mm (1 @.@ 9 in) recorded , which flooded rivers and some houses . In addition , the system produced gusts of 101 km / h (63 mph) , strong enough to damage roofs , cause power outages , and damage fields and trees . Heavy rainfall also spread across Mozambique , producing additional river flooding Zambezi in a region that had been flooded for weeks . The floods wrecked dozens of homes and covered many roads , while killing two people . Later , gusts peaked at 155 kilometres per hour (96 mph) on Europa Island , while rainfall reached 72 mm (2 @.@ 8 in) .

= = = Severe Tropical Storm Evariste = = =

The ITCZ became active in late March , spawning several areas of convection across the Indian Ocean and into the adjacent Australian basin . The westernmost system had a circulation as of March 31 about 600 km (370 mi) west @-@ southwest of Diego Garcia . Despite favorable conditions , the system failed to organize at first , although it became Tropical Disturbance 9 on April 2 after the structure improved . Drifting to the southwest and later to the south , the associated convection waxed and waned , finally organizing more on April 4 ; on that day , the disturbance quickly intensified into Moderate Tropical Storm Evariste . A day prior , the JTWC had initiated advisories on the system as Tropical Cyclone 18S . A trough to the south weakened the ridge , turning the storm to the southwest . A small eye formed on April 5 , but later dissipated after an increase in thunderstorm activity . On that day , the MFR estimated peak 10 minute winds of 110 km / h (70 mph) , just shy of tropical cyclone status , while the JTWC estimated 1 minute winds of 140 km / h (85 mph) . On April 6 , increased wind shear from the approaching trough began weakening Evariste and turned it to the south . That day , it passed about 135 km (85 mph) east of St. Brandon , and on April 7 , Evariste bypassed Rodrigues about 200 km (125 mi) to the southwest . The convection gradually deteriorated and left the circulation exposed . Late on April 7 , the storm suddenly turned southwestward toward a developing low east of Madagascar , although the

southwest motion resumed soon after . On April 8 , Evariste dissipated , dissipating ahead of the nearby trough .

Evariste produced peak gusts of 91 km / h (57 mph) on St. Brandon , with 23 mm (0 @.@ 91 in) of rainfall recorded . Stronger winds were recorded on Rodrigues while the storm passed , reaching 109 km / h (68 mph) . Rainfall was minimal , reaching only 15 mm (0 @.@ 59 in) , and failing to alleviate drought conditions .

= = = Moderate Tropical Storm 10 = = =

A small area of convection not associated from the ITCZ became Tropical Disturbance 10 on April 1 , about 215 km (350 mi) west @-@ northwest of the Cocos Islands in the Australian region . It moved west @-@ southwestward , entering the south @-@ west Indian Ocean on April 2 , and on the same date the JTWC classified it as Tropical Cyclone 16S . The thunderstorms organized into a small central dense overcast , and there was evidence of an eye feature , suggesting the system could have been much stronger . Although satellite imagery had difficulty in tracking the low @-@ level circulation , a nearby ship on April 3 confirmed the presence of a circulation . Operationally the system was only classified as a tropical depression . However , data from QuikSCAT helped upgrade the system to moderate tropical storm status in a post @-@ season analysis , with peak winds of 65 km / h (40 mph) on April 3 ; as a result , it was not named . After previously moving to the west @-@ southwest , the small storm turned back to the west due to a strengthening ridge to the south . Wind shear increased on April 4 , which rapidly dwindled the convection and thereby leaving behind an exposed circulation . It underwent the Fujiwhara effect with a larger disturbance to the east , causing the system to turn back to the north and dissipate on April 5 .

= = = Subtropical Cyclone 11 = = =

Similar to a Subtropical Depression 13 in April 2000 , there was an unusual subtropical cyclone that formed in June to end the season . A trough exited South Africa on June 18 with an associated frontal wave in the southern Mozambique Channel . On the next day , the system separated from the front and became a cut @-@ off low . It moved north @-@ northwestward along the eastern periphery of a ridge in southern Africa , becoming a subtropical depression on June 20 . The associated convection initially diminished , although the thunderstorms redeveloped due to the atmospheric instability in the region . On June 21 , the depression passed about 100 km (60 mi) east of Maputo , Mozambique , while moving into an area of much warmer waters . As such , the structure became more tropical , with a small central dense overcast forming over the circulation only 75 km (45 mi) in diameter . The JTWC initiated advisories on June 21 as Tropical Cyclone 12S . The small size of the storm merited the MFR calling it a " midget cyclone " , with a small eye forming late on June 21 . Based on the feature , the JTWC estimated peak 1 winds of 120 km / h (75 mph) ; in contrast , the MFR estimated 10 minute winds of 95 km / h (60 mph) . Despite the structure , the convection was shallow , which brought uncertainty to the true intensity of the storm . Turning to the northeast and east , the subtropical storm rapidly weakened on June 22 to depression status after the environment became hostile , and the convection largely dissipated . The exposed low turned northwestward on June 23 , dissipating the next day .

The storm was the only one on record to form in the Mozambique Channel in June . In addition , it was the strongest storm to form so late in the season .

= = = Other storms = = =

On August 1 , in the middle of the southern hemisphere 's winter , an area of convection persisted in the northeastern portion of the basin about 740 km (460 mi) northeast of Diego Garcia . At that time , an associated circulation was exposed to the east of the thunderstorms . At 06 : 00 UTC that day , the MFR initiated advisories on Tropical Disturbance 1 . After the system organized further , the JTWC also began tracking the system as Tropical Cyclone 01S , estimating winds of 65 km / h (

40 mph) . With a ridge to the south , the system tracked generally westward , briefly becoming a tropical depression on August 1 . An approaching trough weakened the ridge , allowing the depression to turn southwestward . Located in an area of moderate wind shear , the system failed to intensify further , and it dissipated on August 3 .

An area of convection formed on November 9 to the east of Diego Garcia , possibly the result of the MJO . A circulation was evident by November 11 , and the following day it developed into Tropical Disturbance 2 about 830 km (515 mi) southeast of Diego Garcia . Also on November 12 , the JTWC classified the system as Tropical Cyclone 02S . It moved to the southwest , but looped back to the east on November 13 , during which time the MFR upgraded it to tropical depression status . Later that day , the agency ceased issuing advisories , but the system reorganized on November 14 . On November 17 , it turned back to the southwest , but the MFR discontinued advisories on the next day .

An area of convection persisted on January 19 off the east coast of Madagascar , which became Tropical Disturbance 6 two days later . It drifted to the east , strengthening to tropical depression status on January 22 , and passing 330 km (205 mi) west of Réunion . Increased wind shear caused the system to weaken as it turned back to the west , dissipating over Madagascar on January 24 . On Réunion , the system dropped about 100 mm (4 in) of rainfall , including a total of 50 mm (2 in) falling in a 90 minute period in Cape Bernard .

On January 23 , a weak tropical low began affecting Mozambique for two days , causing flooding that killed six people . Although newspaper sources indicated that the system was a tropical storm , it remained unclassified by MFR .

Toward the end of January , a broad low persisted south of the Chagos archipelago , becoming a tropical disturbance on January 30 about 650 km (400 mi) south of Diego Garcia . The convection gradually organized as the system moved to the south @-@ southwest , steered by a break in the ridge to the south caused by the remnants of Cyclone Charly . Initially the circulation was very broad , and due to its involvement with the monsoon , it resembled a monsoon depression . Early on February 1 , the disturbance intensified into a tropical depression while turning more to the south . Around that time , it passed about 500 km (310 mi) east of Rodrigues . The system became extratropical on February 3 , after increased wind shear weakened the convection . The former depression intensified as an extratropical storm , attaining gale force winds while accelerating its forward motion due to an approaching trough . The system was no longer tracked after February 6 as it approached the polar latitudes .

On April 17 , a weak low exited from the coast of South Africa and moved southeastward over the warm waters of the southern Mozambique Channel . By April 19 , it had organized into a subtropical depression and produced gale force winds . The MFR did not classify the system , however , due to it being located from 33 ? 35 ° S , which was outside of the agency 's area of warning responsibility at the time .

= = Storm names = =

A tropical disturbance is named when it reaches moderate tropical storm strength . If a tropical disturbance reaches moderate tropical storm status west of 55 ° E , then the Sub @-@ regional Tropical Cyclone Advisory Centre in Madagascar assigns the appropriate name to the storm . If a tropical disturbance reaches moderate tropical storm status between 55 ° E and 90 ° E , then the Sub @-@ regional Tropical Cyclone Advisory Centre in Mauritius assigns the appropriate name to the storm . A new annual list is used every year so no names are retired .

= = Contemporaneous seasons = =

List of Southern Hemisphere tropical cyclone seasons
Atlantic hurricane seasons : 2000 , 2001
Pacific hurricane seasons : 2000 , 2001
Pacific typhoon seasons : 2000 , 2001

North Indian Ocean cyclone seasons : 2000 , 2001