1970 North Indian Ocean cyclone season

The 1970 North Indian Ocean cyclone season had no bounds , but tropical cyclones in the North Indian Ocean tend to form between April and December , with peaks in May and November . The 1970 season saw a total of seven cyclonic storms , of which three developed into severe cyclonic storms . The Bay of Bengal was more active than the Arabian Sea during 1970 , with all of the three severe cyclonic storms in the season forming there . Unusually , none of the storms in the Arabian Sea made landfall this year . The most significant storm of the season was the Bhola cyclone , which formed in the Bay of Bengal and hit Bangladesh on November 12 . The storm killed at least 300 @,@ 000 and possibly even over half a million people , making it the deadliest tropical cyclone in recorded history .

Storms

Very Severe Cyclonic Storm One

A low pressure area that developed over the southern Andaman Sea late in April moved north into the Bay of Bengal becoming the first depression of the year on May 2 . The depression intensified under the influence of a high @-@ level anticyclone and became a cyclonic storm the next day . The storm then turned to the northeast and strengthened into a severe cyclonic storm on May 4 . Soon after this , it peaked with winds of 150 km / h (90 mph) and a well @-@ defined eye formed . The storm made its landfall near Cox 's Bazar in easternmost East Pakistan (now Bangladesh) early in the morning of May 7 and dissipated over western Burma that evening .
The cyclone brought widespread rain to the Andaman and Nicobar Islands before it moved clear of them on May 3 . Effects in East Pakistan are unknown , but Akyab in western Burma reported winds of 55 km / h (35 mph) as the cyclone approached land .

Depression Two

A depression formed in the northeast of the Bay of Bengal on during the morning of May 23 near the East Pakistan coast . It moved towards the coast and made landfall to the south of Cox 's Bazar that night , before dissipating over southern Assam the next day . Any effects on land are unknown .

Severe Cyclonic Storm Three

A low pressure area developed off the Karnataka @-@ Goa coastline in the Arabian Sea on May 27 and developed into a depression the next day . The system developed further into a cyclonic storm on May 29 as it moved to the north . The storm reached its peak with 95 km / h (60 mph) soon after this as it turned to the west , but soon degenerated into a deep depression over the northern Arabian Sea on May 31 . The depression continued to move west , weakening to a remnant low shortly as it made landfall on the Arabian Peninsula on June 2 . The remnant low dissipated over southern Saudi Arabia the next day .
The cyclone itself had minimal effects on land , but the monsoon advanced into western India in late May in association with the system . As the cyclone moved to the west away from the subcontinent , the incursion of moist air from the Arabian Sea persisted over northwestern India for the first three days of June . This brought moderate rainfall to regions of Gujarat , Rajasthan and western Madhya Pradesh .

Cyclonic Storm Four

A low pressure area developed in the northern Bay of Bengal on June 6 and developed into a

depression the next day as it drifted to the north , moving over south of the Ganges Delta . The depression reversed its course overland , reemerging into the Bay of Bengal on June 8 . Once over water , the depression intensified into a cyclonic storm on the morning of June 9 . The cyclone 's motion shifted to the northwest and it made a second landfall near Balasore in northern Orissa that night . The cyclone quickly weakened to a deep depression overland and tracked to the west over central India , where it degenerated into a broad area of low pressure on June 11 .

Sustained winds of 65 km / h (40 mph) were recorded at Sandheads on June 9 , while the cyclone was at its peak offshore . High levels of rain affected much of Orissa and West Bengal , with over 100 mm (4 inches) falling over large areas of both states . As the storm dissipated overland , it brought severe rain to Vidarbha and southern Madhya Pradesh . The highest recorded rainfall was at Khandwa were 280 mm (11 inches) fell on June 13 alone . The rains led to localised flooding in parts of Vidarbha and disrupted road transport in the region .

= = = Deep Depression Five = = =

A low pressure area that had developed over the northern Bay of Bengal the previous day concentrated into a depression early on June 29 . The depression intensified as it moved to the northwest , becoming a deep depression shortly before it crossed the Orissa coast . After landfall the storm continued to move to the northwest , weakening to a depression again on July 2 over northeast Madhya Pradesh . It degenerated into a remnant low over central Uttar Pradesh during the evening on July 3 .

The depression brought intense monsoon conditions to Orissa , Madhya Pradesh and Vidarbha during its life . Over 210 mm (8 inches) of rain and winds of 85 km / h (50 mph) were recorded in Paradip as the depression made landfall on June 30 . Inland , the heavy rains caused some rivers in Orissa to overflow and flooded rice paddies in Cuttack District . Further west , the Wainganga River overflowed its banks in places . Road transport in Madhya Pradesh was disrupted and there was damage to crops in the Raipur area . Raipur recorded the highest 24 @-@ hour rains associated with the depression , with 230 mm (9 inches) falling there on July 2 .

= = = Deep Depression Six = = =

A low pressure area moved to the west off the Burmese coast on July 5 and developed into a depression the next day in the north central Bay of Bengal . The depression intensified as it moved to the northwest , becoming a deep depression on July 7 . The system made landfall on the Orissa coast during the morning of July 8 and rapidly degenerated into a broad area of low pressure overland . The remnant low moved north over western Bihar and it persisted there until July 12 when it was absorbed by the monsoon trough .

Winds of 55 km / h (30 mph) were recorded offshore at Sandheads when the system was at its peak . The depression brought isolated heavy rains to many places throughout East India , with rains in excess of 100 mm (4 inches) falling every day from the depression 's landfall until the absorption of the remnant low .

= = = Depression Seven = = =

A low pressure area that lay over Burma on August 15 , moved to the west across the Bay of Bengal and developed into a depression on the evening of August 17 when it was 100 km (62 mi) southeast of Gopalpur @-@ on @-@ Sea . The depression moved to the northwest and made landfall near Gopalpur @-@ on @-@ Sea and turned to the west overland . The depression had weakened into a remnant low by August 20 , when it was over western Madhya Pradesh .

The depression and associated weather brought widespread rain to much of south and central India , with heavy rain falling in some locations . The heavy rain in Maharashtra disrupted road transport in many areas , especially in the east of the state . The Godavari River inundated parts of Bhadrachalam and many villages in regions of Andhra Pradesh . The rains also damaged rice

paddies and disrupted transport in Telangana . Rains associated with the depression reached as far west as Bombay with 200 mm (8 inches) falling there on August 19 .

= = = Cyclonic Storm Eight = = =

A low pressure area that was centred over West Bengal on August 31 concentrated into a depression on September 2 when it was 50 km (31 mi) to the east of Midnapore . It intensified as it moved to the west , becoming a deep depression the next day , about 50 km (31 mi) east of Ranchi . The system continued move west across India , before weakening into a depression on September 7 near Ahmedabad , Gujarat . The depression then turned north and entered southwest Rajasthan . On September 8 , the system turned to the southwest and emerged into the Arabian Sea the following evening . Over water it intensified again , becoming a cyclonic storm by the evening of September 10 . The cyclone developed a short @-@ lived eye on September 11 as it drifted slowly to the west , before degenerating into a broad area of low pressure as it neared the Oman coast on September 14 .
This system brought widespread rains to a wide swathe of India during its existence . Some heavy rains in West Bengal flooded vast areas of many districts and resulted in some fatalities , whilst in parts of neighbouring Orissa the floodwaters damaged fields . 390 mm (15 inches) of rain fell on Bardhaman over two days as the depression passed overhead . Several thousand people were made homeless in West Bengal . Both the Narmada and Tapti Rivers inundated parts of Madhya Pradesh and Gujarat . The floods in Gujarat took many lives and caused severe damage to crops and other properties . Between 300 and 400 people were washed away in two villages in Bharuch district . 260 mm (10 inches) of rain fell on Surat on July 7 and a further 80 mm (3 inches) on Kutch District as the cyclone moved out to sea .

= = = Deep Depression Nine = = =

A low pressure area moved from Burma to the Bay of Bengal on September 8 where it developed into a depression . The depression strengthened as it moved to the northwest and became a deep depression the next day , when it was 150 km (93 mi) southeast of Calcutta . The system crossed the West Bengal coast later and moved to the northwest across the Chota Nagpur Plateau . The depression stalled over Uttar Pradesh on September 12 and remained near Lucknow until September 14 . The depression then turned to the east and weakened to a remnant low over northern Bihar on September 18 .
The depression brought widespread rain to West Bengal , Orissa , Bihar , Uttar Pradesh and Madhya Pradesh during its lifespan , with rains of 140 mm (5 @.@ 5 inches) as far west as Lucknow . The rains in Uttar Pradesh caused severe property damage and flooding , with some 150 people losing their lives in the state . The Ganges flooded in northern Bihar , inundating parts of Munger District , whilst the Gandaki River flooded parts of Motihari . The rains worsened floods in south Bengal , increasing the death toll from the floods there to 80 and affecting 8 million people , with considerable damage done to crops and housing . Jaleswar in Orissa was entirely flooded .

= = = Depression Ten = = =

A well @-@ defined low pressure area formed over the west central Bay of Bengal on September 20 and developed into a depression the next morning about 100 km (62 mi) south @-@ east of Visakhapatnam . The depression then moved overland and after crossing Vidarbha weakened into a remnant low over Gujarat on September 23 .
The depression brought widespread rain to northern South India as it passed over the country and its remnants brought scattered rain to Gujarat over the following week . Over a period of four hours , heavy rain fell on Hyderabad and Secunderabad , destroying many houses in the two cities . About 130 mm (5 inches) of rain fell on Bombay as the system dissipated . The heavy rains claimed about 75 lives .

= = = Depression Eleven = = =

A low pressure area that developed in the Bay of Bengal passed over the southern Indian subcontinent and developed into a depression in the Arabian Sea off the southern Maharashtra coast on October 11 . The depression did not develop as it drifted west , and it degenerated into an area of low pressure as it was approaching the Arabian Peninsula . The depression brought widespread rains to southern Maharashtra and Karnataka states , with 40 mm (1 @.@ 5 in) of rain recorded in Karwar . Scattered heavy rain was also reported in the Laccadives .

= = = Very Severe Cyclonic Storm Twelve = = =

A depression formed on October 18 in the central Bay of Bengal and moved to the north . It gradually intensified and turned to the northeast , becoming a cyclonic storm on October 20 . The storm became the second severe cyclonic storm of the season the following day , and turned onto a more northerly track towards the Ganges Delta . The storm peaked with winds of 130 km / h (80 mph) before it made landfall near the West Bengal @-@ East Pakistan border during the morning of October 23 . The storm then crossed over East Pakistan , before dissipating over southern Assam on October 24 .
This cyclone brought widespread rain to Tamil Nadu as it formed and to the Andaman and Nicobar Islands as it moved over the Bay of Bengal . After its landfall it brought severe rains to West Bengal , Assam and East Pakistan . The highest recorded rainfall in India was at Shillong where 220 mm (8 @.@ 6 inches) fell on October 24 . A gust of 105 km / h (65 mph) was recorded in Calcutta as the storm passed by to the east , where it caused the failure of the power supply .
The cyclone claimed between 200 and 300 lives in East Pakistan , with the worst of the damage occurring in Khulna District . Over 200 villages were destroyed in the district leaving several thousand people homeless , and there was extensive damage to crops .

= = = Extremely Severe Cyclonic Storm Thirteen = = =

On the morning of November 8 a depression formed in the south @-@ central Bay of Bengal . It moved very slowly to the north , becoming a cyclonic storm the next day . It continued to intensify as it approached the head of the Bay , becoming the third severe cyclonic storm of the season on November 11 . That evening it reached its peak with winds of 185 km / h (115 mph) with a well @-@ developed eye and became the strongest storm of the season . It then made landfall on the coast of East Pakistan during the night of November 12 . The cyclone weakened rapidly as it moved inland and dissipated the next day over south Assam .
This cyclone brought a devastating storm surge of up to 10 metres (33 ft) high to the Ganges Delta . Largely as a result of this surge somewhere between 300 @,@ 000 and 500 @,@ 000 people lost their lives , making this storm the deadliest tropical cyclone ever recorded and one of the deadliest natural disasters of modern times . The total damage from the storm exceeded $ 85 million (1970 USD , $ 480 million 2008 USD) and much of the agricultural and fishing capacity of the region was wiped out . In total some 3 @.@ 6 million people suffered direct effects from this cyclone .
The Pakistani government was severely criticised for its handling of the relief operations following the storm , both by local political leaders in East Pakistan and in the international media . In the December national elections , the opposition Awami League gained a landslide victory , gaining 160 of the 162 East Pakistani seats . Continuing unrest between East Pakistanis and the central government trigged the Bangladesh Liberation War , which concluded with the creation of the state of Bangladesh . This is one of the first times that a natural event helped to trigger a civil war .

= = = Deep Depression Fourteen = = =

A low pressure that had developed over the south Andaman Sea moved west across the southern Bay of Bengal and concentrated into a depression on the morning of November 19 , when it was about 600 km (370 mi) southeast of Madras . The system intensified further into a deep depression as it moved west @-@ northwest and hit the Tamil Nadu the following day . The depression weakened into a remnant low over Tamil Nadu .

The depression brought widespread rain to much of Tamil Nadu , with heavy rain hitting the coastal regions . Low @-@ lying coastal regions from Pondicherry to Atirampattinam . There was damage to crops and housing in Thanjavur District and the rains left thousands homeless in Madras . Cuddalore experienced exceptionally heavy rains with over 440 mm (17 inches) falling there , of which 310 mm (12 inches) fell on November 20 alone .

= = = Cyclonic Storm Fifteen = = =

The remnant low of a depression emerged into the Arabian Sea off Kerala late on November 21 and developed into a new depression the next day as it moved west . The depression moved further west , and gradually turned toward the southwest , intensifying as it did so . It became a cyclonic storm on November 28 to the southeast of Socotra and reached its peak with 75 km / h (25 mph) winds soon after . The cyclone continued to move west @-@ southwestwards and rapidly weakened into a remnant low pressure area off the Somalia coast the next day , ending the season .

The cyclone brought widespread rain to the Laccadives from November 22 to November 24 , with 60 mm (2 @.@ 4 inches) recorded on Amini on November 23 .