

TROPICAL CYCLONES IN THE NORTHEASTERN AND NORTHWESTERN AUSTRALIAN REGIONS, 1962-63 SEASON

NOTE: An abnormal number of cyclonic disturbances in both these Regions during the 1962-63 season has resulted in the complete reports being too lengthy for inclusion in the Magazine. Only short summaries of these reports are given here.

In future no reports of the cyclone season will be included in the Australian Meteorological Magazine unless it is considered necessary to draw attention to some special feature in them.

The complete reports commencing with this season will, however, be published as a Meteorological Summary and distributed to all recipients of the Magazine.

INTRODUCTION

The tropical disturbances of each region are allotted a sequence number for the season and are classified as follows:-

- Class 1. Major tropical cyclones associated with winds exceeding 33 knots and extending more than 100 miles from the centre.
- Class 2. Tropical cyclones associated with winds exceeding 33 knots but not extending more than 100 miles from the centre.
- Class 3. Minor tropical disturbances associated with wind speeds not exceeding 33 knots.

NORTHEASTERN REGION

by Staff of Divisional Office, Brisbane

LIST OF TROPICAL DISTURBANCES

Number	Class	Dates	Locations Affected
1	3	24-27 December, 1962	Coral Sea, east of Willis Island.
2	1	31 Dec., 1962-1 Jan., 1963	Double Island Point, Maroochydore.
3	3	13-14 January, 1963	West Coral Sea.
4	2	20-23 January, 1963	Central and Southeast Coral Sea
5	3	25-27 January, 1963	Waters off Central Coast, Queensland
6	2	3-8 February, 1963	Willis Island to North Island, New Zealand region.
7	2	15-20 February, 1963	East Coral Sea to North Island, New Zealand.
8	1	1-8 March, 1963	East Coral Sea - New Caledonia - New Hebrides - to East of North Island.
9	3	14-16 March, 1963	Southern Queensland Coast.
10	3	22-25 March, 1963	Central Coral Seas - Townsville region.
11	3	25-26 March, 1963	Gulf of Carpentaria.
12	3	26-30 March, 1963	Gulf of Carpentaria to Central Queensland.
13	1	30 March - 6 April, 1963	South Queensland Coast to Kermadec Island.
14	1	10-14 April, 1963	Arnhem Land.
15	1	20-26 April, 1963	North and East Coral Sea and North Tasman Sea
16	1	2-9 May, 1963	North Coral Sea and southern half Queensland coast.
17	2	6-8 May, 1963	Moreton Division (Q'ld.), Northern Rivers (N. S. W.) and adjacent inland.
18	2	7-8 May, 1963	Moreton and Northern Rivers coast.
19	1	8-14 May, 1963	Southeastern and Eastern Coral Sea Islands.
20	3	10-12 May, 1963	New Caledonia.
21	3	22-25 June, 1963	Central Coral Sea - New Caledonia.
22	1	23 June - 4 July, 1963	South Coral Sea and North and West Tasman Sea.
23	1	25-29 June, 1963	Southern Coast Queensland, Northern Rivers (N. S. W.) and Southeast Coral Sea.

SUMMARY

In marked contrast to the past two cyclone seasons, no fewer than 23 disturbances affected the Northeastern Australian Region during the 1962-63 season. The first cyclone occurred just prior to Christmas and cyclone activity continued well into the Autumn.

At least 14 of the disturbances were associated with gales but only one (15-20 Feb.) appears to have attained full hurricane intensity. Of the seven tropical cyclones, five developed northwest of a jet maximum in a region of anticyclonic curvature at 200 mb. In addition, in three of these cases the Durst - Sutcliffe effect operated. Of the remaining two, one developed below a ridge at 200 mb without the presence of a jet, and one developed due to the Durst - Sutcliffe effect in association with a cold pool to the west. Seven tropical depressions moved to the subtropics and intensified to gale force disturbances and were probably cold cored. The remaining nine disturbances did not reach gale force.

A noteworthy feature of the season was the prevalence of upper trough conditions over the Central Coral Sea, and it is suggested that this bears some relationship of cause and effect to the unusually large number of disturbances which developed. In general, however, the atmosphere was too cold (thickness values too low) and thermal gradients too weak for their further development.

In most cases, direction of movement was in good agreement with that indicated by the 300 and 200 mb charts and thermal steering, as shown by the 1000-500 mb thickness.

The presence and persistence of the I. T. C. Z. in relation to tropical cyclogenesis was again confirmed during the 1962-63 season.

NORTHWESTERN REGION

by Staff of Divisional Office, Perth

LIST OF TROPICAL DISTURBANCES

Number	Class	Dates	Location Affected
1	1	6-16 Oct. 1962	Central Indian Ocean to Malagasy
2	1	16-29 Dec. 1962	Central Indian Ocean
3	1	1-11 Jan. 1963	Central Indian Ocean
4	1	7-15 Jan. 1963	Timor Sea to off West Coast of W. A.
5	1	9-17 Jan. 1963	Central Indian Ocean to Malagasy
6	1	19-30 Jan. 1963	Timor Sea to off west coast of W. A.
7	2	21-24 Jan. 1963	Northeast Indian Ocean
8	2	29 Jan-4 Feb 1963	Central Indian Ocean
9	1	3-10 Feb. 1963	Northwest coast of W. A. to inland Gascoyne and Goldfields
10	1	12-17 Feb. 1963	Kimberley to off Northwest and West Coasts of W. A.
11	1	16-19 Feb. 1963	Timor Sea off Northwest and Upper West Coasts of W. A.
12	1	15-24 Mar. 1963	Northeast Indian Ocean

SUMMARY

During the 1962-63 season twelve cyclones originated east of latitude 80°E in the Indian Ocean and seas off northwestern Australia, and ten of these developed into major storms.

Of the twelve cyclones, five moved west of latitude 80°E , two remained over the central Indian Ocean and five operated in waters off the Western Australia coast. Although these latter five cyclones developed into major systems, only two developed winds of hurricane force of which one crossed the coast. This was cyclone No. 9 which devastated Onslow on 7th February.

Although a number of weak circulations persisted over waters adjacent to northwestern Australia, there was less cyclogenesis than normal in these areas.

The invaluable role of weather satellites in the detection of areas favourable for cyclogenesis and in the location of actual cyclones, was illustrated during the existence of four of the twelve cyclones. Tiros satellite not only detected the favourable area in which cyclone No. 2 formed, but also located the vortex several days later in a position which would not have been expected by experience.