TROPICAL CYCLONE ALFRED

5/3/2025

As per Bureau of Meteorology (BOM) bulletin issued at 0058 UTC 5th March 2025, Tropical Cyclone Alfred has strengthened as a Category 2 cyclone with sustained wind speeds of 95 km/h near the centre and wind gusting to 130 km/h. Cyclone is estimated to be 335 km east of Brisbane. Alfred is forecasted to maintain its strength as Category 2 as it approaches the southeast Queensland coast on Thursday, and cross the coast early Friday morning, most likely between Maroochydore and Coolangatta.

- Current Warning Zone listed by Bureau of Meteorology (BOM) includes cities and towns from **Double Island Point in Queensland to Grafton** in NSW, including Brisbane, Gold Coast, Sunshine Coast, Byron Bay and Ballina but not including Grafton.
- As per current BOM forecast, the system is likely to intensify to a high-end category 2 system prior to landfall. The possibility of Alfred reaching a low-end category 3 strength before making landfall cannot be ruled out.
- State Governments have announced closure of 963 schools in the south-east Queensland and ~122 public schools in northern NSW. As a precautionary measure, a few airlines have already cancelled many flights and several airports located in Tropical Cyclone Alfred's path have been closed.
- RMSI modelled wind speed of Cyclone Alfred based on the track issued by Australian Bureau of Meteorology at 0058 UTC of 5th March 2025 (depicted in Figure 1).
- As per our analysis, maximum sustained wind speed of about 100-112 km/h is likely to prevail over the areas of Moreton Island, Redland Bal, Alexandra Hills, Birkdale, Cleveland, Welington Point, and Victoria Point.
- These wind speeds are likely to pose minor risk to buildings, trees, and power infrastructure.

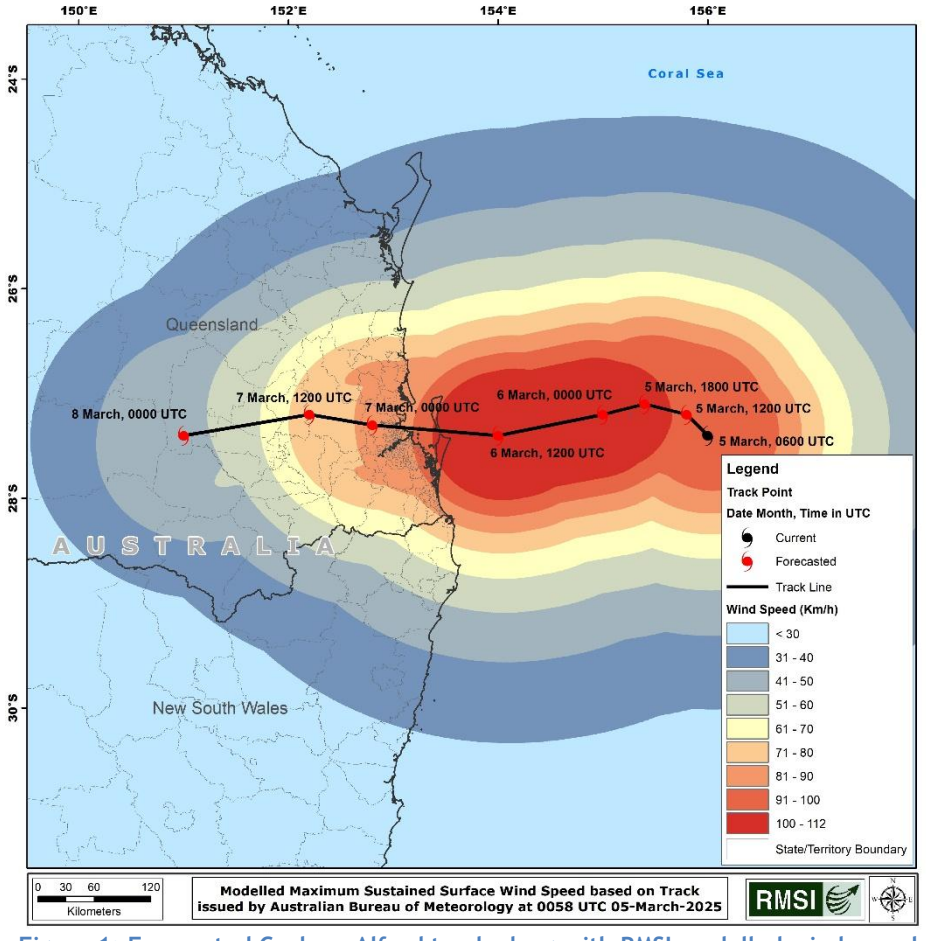

Figure 1: Forecasted Cyclone Alfred track along with RMSI modelled wind speed

RAINFALL ANALYSIS

RMSI has analysed the daily rainfall forecast from 6th to 9th March 2025. Figure 2 shows the 24hr likely rainfall under the influence of Cyclone Alfred.

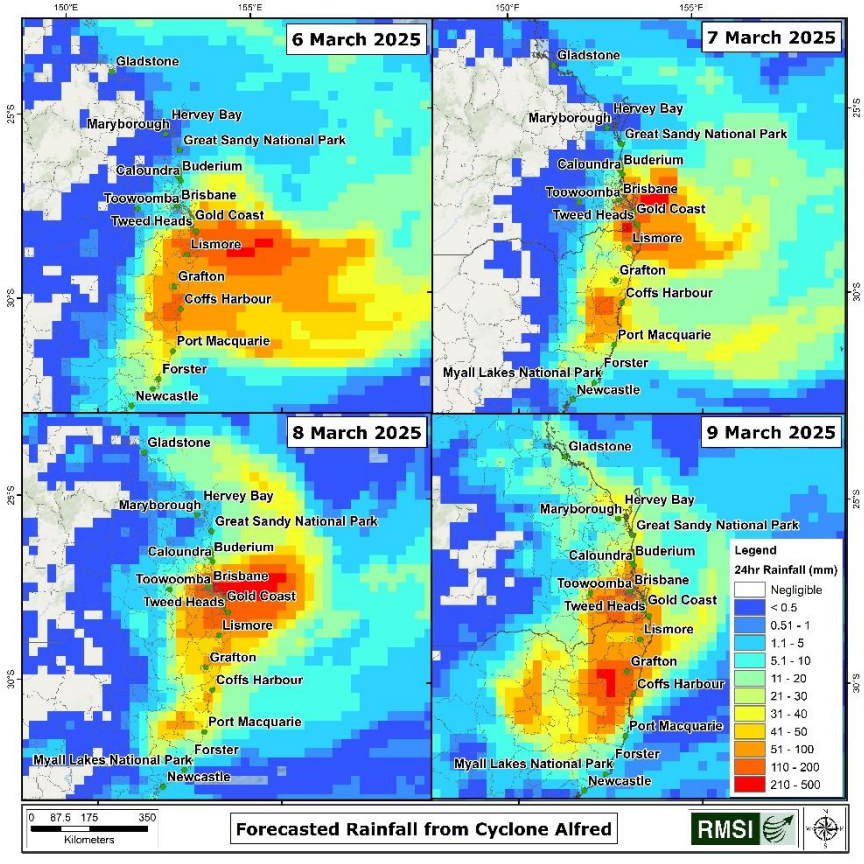

Figure 2: Forecasted Daily Rainfall from Cyclone Alfred (Source: GFS)

- For 6th March, heavy rainfall (51–100+ mm) is expected in the Lismore, Coffs Harbour, and Grafton, while rainfall ranging between 21-50+mm extends in Tweed Heads, Gold Coast, and Brisbane, and with lighter rainfall (11-20 mm) in New Castle and Port Macquarie.
- By 7th March, rainfall is likely to spread southwards, with heavy precipitation (51-100mm) affecting **Grafton, Gold Coast, Coffs Harbour, and Port Macquarie.** Brisbane and Tweed Heads will continue to receive moderate rainfall (21-50mm).
- By 8th March, rainfall intensity slightly decreases but remains widespread. And by 9th March rainfall shifts southwards, with heavy precipitation (51-100 mm) over **Port Macquarie** and nearby areas.

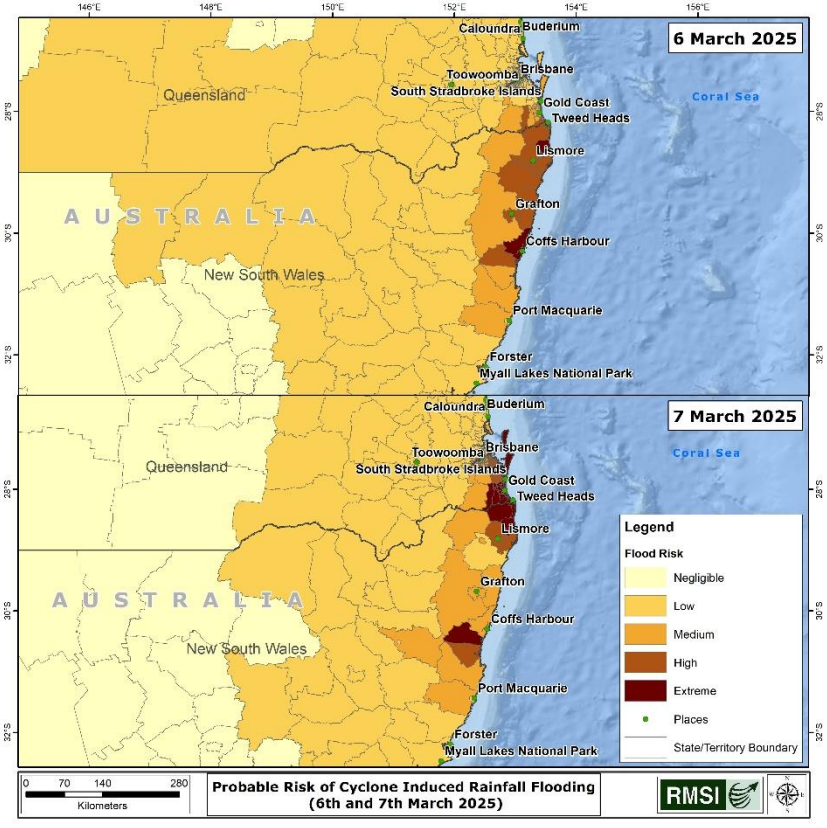

Figure 3: Cyclone induced rainfall Flood Risk

Figure 3 shows the cyclone induced rainfall flood risk on the eastern Australia on 6th and 7th March 2025.

- As per our analysis, areas of **Gold Coast, Tweed Heads, Lismore, and Coffs Harbour,** are at high to extreme risk of cyclone induced rainfall flooding on 6th and 7th March.
- These regions are likely to receive more than 100 mm of rainfall on 6th and 7th March.

RMSI's IMPACT ANALYSIS

Impact analysis of Cyclone Alfred was conducted through **SirennX** (RMSI's Impact Forecasting Platform). RMSI has estimated the impact of cyclonic winds on various exposure categories (Table 1).

Table 1: Estimated Probable impact by cyclonic winds

Infrastructure	Airports	Seaports	Population	Telecom Towers	Buildings
Low Risk	5	1	3,500,000	85,000	1,300,000
Moderate Risk		1	360,000	9,000	150,000

- More than ~1.5 million buildings are under varying risk of impact by the winds.
- 2 seaports and 5 airports are expected to face low to moderate impact. Most airports will experience low wind speeds, except for Brisbane, Gold Coast, and Sunshine Coast, with wind speeds to range between 75–89 km/h.
- ~ 4 million people are exposed to wind speed ranging from 62 km/h to 117 km/h
- More than 94,000 telecom towers are exposed to low to moderate risk from the Cyclone Alfred.

CONCLUSION

Cyclone Alfred has posed a moderate risk to eastern Australia, with **maximum sustained winds of around 112 km/h**, **torrential rainfall that might cause flash flooding** in low-lying areas, and **wind gusts of up to 130 km/h** in isolated areas. While the system is expected to **weaken significantly by March 8**, residual effects such as **coastal erosion, localized flooding, and infrastructure disruptions** may persist. Critical Infrastructure elements such as telecom towers, and other utility are crucial in case of an emergency, hence, the respective infrastructure companies must conduct necessary preventive maintenance before the landfall of any cyclonic event so that these do not experience downtime.

SirennX, *provides utility and telecom service providers with up to 7 days of advanced analytics preparing them to take necessary mitigation measures and carry out preventive maintenance.*

For more detailed information subscribe to RMSI's Impact Forecasting platform or write to info@rmsi.com

Source:http://www.bom.gov.au/cgi-bin/wrap_fwo.pl?IDQ20023.html;http://www.bom.gov.au/nsw/flood/index.shtml?ref=hdr;http://www.bom.gov.au/cgi-bin/wrap_fwo.pl?IDQ20023.html;http://www.bom.gov.au/cgi-bin/wrap_fwo.pl?IDQ20018.txt;https://www.abc.net.au/news/2025-03-03/cyclone-alfred-maps-tracking/105003216;https://www.weatherzone.com.au/news/major-flooding-imminent-as-tropical-cyclone-alfred-approaches-eastern-australia/1890416;
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