

Forecast Rainfall Footprints

Forecast rainfall maps are available, alongside wind and gust footprints, for hurricanes, typhoons, and tropical cyclones, worldwide.

A tropical disturbance can generate torrential rains, which often have more devastating consequences (floods, landslides, and mudslides) compared to the damage from high winds. Unlike the wind, the intensity of rainfall is not linked to the intensity of the disturbance. Relatively weak tropical low-pressure systems (e.g., tropical depressions) can result in heavier rains than mature cyclones. Even for systems of similar intensity, rainfall can vary a lot from one cyclone to another.

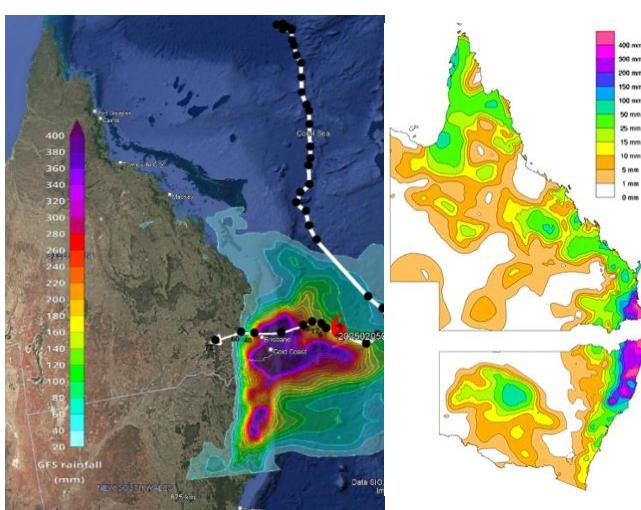


Flooding from Hurricane Harvey, 2017

In August 2017, Hurricane Harvey, one of the most damaging hurricanes on record, made landfall near Rockport in Texas. After a second landfall event, the storm lingered over eastern Texas, depositing in places over a metre of rain, peaking at 1,539mm at Hederland. The storm caused \$125 billion in damage, primarily from catastrophic rainfall-triggered flooding in the Houston metropolitan area and Southeast Texas, making it equivalent to Katrina in impact, and the costliest natural disaster recorded in Texas at the time.

Rainfall forecasts are available at 12, 24, 36, 48, 72, 96, and 120-hour forecast intervals, displayed as 5 km resolution maps. These accumulations, based on the GFS forecast model, are overlaid with storm tracks from national agencies (such as the National Hurricane Center and Joint Typhoon Warning Center) or regional agencies (the Indian Meteorology Department, Japan Meteorology Agency, Bureau of Meteorology, and La Réunion).

Produced with every new advisory, every 3 to 6 hours, the data is available in multiple formats for use in GIS and risk modelling platforms. Access is offered via subscription, either as a standalone product or alongside wind footprints. Downloads can be automated via API, and historical data is available from October 2023 onwards.



Cyclone Alfred (20th Feb – 8th March 2025). The 5-day rainfall forecast from 5th March, 00:00 (left), aligned with observed 7-day rainfall reported after the event (right, source BoM). The rainfall is overlaid with a storm path derived from BoM. Cyclone Alfred was the first storm to cross the coastline in southeastern Queensland since 1974. Parts of Brisbane received over 490mm of rainfall during the event, which reached a Category 4 on the Australian Tropical Cyclone Intensity Scale at its peak.

TSR works with aid agencies, governments, re/insurers, energy, finance, and marine organisations, helping them manage the risks associated with live tropical storms. Contact neha.shah@eurotempest.com to find out more.