

Tropical Cyclone Yasi causes USD1.3 billion in insured losses

Tropical Cyclone Yasi developed in the South Pacific Ocean in late January, and made landfall in Queensland, Australia just after midnight early on February 2nd. The large Category Four storm (based on the Saffir-Simpson Scale) brought extremely gusty winds and tremendous rains to an area already reeling from a historic flooding event. At least one fatality was directly blamed on the storm.



Source: Alertnet

The cyclone originated on January 30th as a 65 kph (40 mph) tropical storm before steadily intensifying into a cyclone with 120 kph (75 mph) winds on the 31st. Yasi continued to strengthen before undergoing a rapid intensification cycle on February 1st. By early on the 2nd, the storm continued to intensify as it reached its peak as a borderline Category Four/Five cyclone with 250 kph (155 mph) winds. Prior to coming ashore in mainland Australia, Yasi directly crossed Willis Island – a small island located about 450 kilometers (280 miles) east of Cairns. The cyclone officially made landfall while at its peak intensity at approximately 12:00 AM on the 3rd (13:00 UTC on the 2nd) near Mission Beach. After Yasi

came ashore, it began to decelerate while moving inland through northern Queensland and slowly weakening.

Prior to Yasi's arrival, the Queensland government ordered thousands of residents in low lying areas in parts of Cairns, Port Douglas, Townsville, Cook and Hinchinbrook to evacuate due to the threat of storm surge at high tide. Hospital patients in Yasi's path were also evacuated to Brisbane. The Bureau of Meteorology issued a report noting that Yasi was "likely to be more life-threatening than any experienced during recent generations." As the storm came ashore, it was determined that a large storm surge had accompanied landfall in coastal communities south of Cairns. Some recorded storm surge heights included 5 meters (16 feet) at Cardwell, 3 meters (10 feet) at Clump Point and 2.5 feet (8.2 feet) at Townsville. The surge reportedly damaged sea walls and rushed well inland.

After the cyclone made landfall, while widespread effects did occur, the damage was not as extensive as initially feared. Strict building codes were strengthened following 1974's Tropical Cyclone Tracy that devastated the city of Darwin. The townships of Cardwell and Tully (and the



TC Yasi prior to landfall in Queensland (Source: NASA)

nearby tourist center of Mission Beach) were most affected by Yasi, which also cut power to 180,000 Ergon Energy customers. Some preliminary damage assessments noted that hundreds of homes across the region in Hinchinbrook Channel (210), Cardell (110), Tully Heads (72) and Mission Beach (22) had sustained major damage. A water-treatment system (including plants at Douglas and Paluma) in Townsville was also damaged. These numbers later were increased as further assessments were made. Hundreds of boats and yachts were also damaged near the landfall location, including 70 that moored in the marina of the Port Hinchinbrook resort in Hinchinbrook Channel. Additional widespread damage was reported to businesses and a hospital. In total, the Queensland State Emergency Service reported more than 4,000 damage calls for assistance.

Several infrastructures were also significantly affected, mostly the agricultural and transportation infrastructures. Government officials reported that an estimated 90 percent of Australia’s banana crop was destroyed and hundreds of hectares (acres) of sugar cane were inundated. Agricultural losses were estimated to be AUD1 billion (USD1.01 billion) – of which AUD505 million (USD512 million) was attributed to sugar cane damage. The Australian government noted that additional federal economic damages would top AUD500 million (USD508 million). The Insurance Council of Australia declared a catastrophe in northern Queensland in the wake of Tropical Cyclone Yasi making landfall. According to the ICA, at least 71,145 claims have been filed with payouts in excess of AUD1.25 billion (USD1.3 billion).

With Yasi’s landfall location, the storm warrants appropriate comparisons to Tropical Cyclone Larry – which made landfall just south of where Yasi came ashore. At its peak, Larry was a Category Four cyclone with 215 kph (135 mph) winds, which was less powerful than Yasi. The storm came ashore near Innisfail with 185 kph (115 mph) winds (Category Three on the Saffir-Simpson Scale) and caused significant damage, though the majority of the damage was confined to areas closest to the storm’s relatively small center. The most distinct differences between the two cyclones are found when analyzing each storm’s size. As Yasi came ashore, it was more than twice the size of Larry and affected a much broader area of Queensland. According to government statistics, Larry caused economic damages of AUD865 million (USD872 million) and insured losses of AUD604 million (USD611 million) – all numbers have been adjusted for inflation (2010).

See below for a comparison of Larry and Yasi just prior to landfall, according to archived data provided by the Joint Typhoon Warning Center:

Data	*Cyclone Larry (2006)	*Cyclone Yasi (2011)
One-minute sustained winds prior to landfall	185 kph (115 mph)	250 kph (155 mph)
Estimated wind gusts prior to landfall	230 kph (145 mph)	305 kph (190 mph)
Radius of cyclone-strength winds (>64 knots)	30 km (20 miles)	150 km (90 miles)
Radius of tropical storm-strength winds (>34 knots)	150 km (90 miles)	410 km (210 miles)

*Note: There remains a level of uncertainty with Cyclone Yasi’s strength prior to landfall, and the wind speeds may be adjusted. Following Cyclone Larry’s landfall in 2006, the Bureau of Meteorology revised its initial estimate downward after performing forensic meteorology in the hardest-hit damage locations.

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