

# What is a TROPICAL CYCLONE

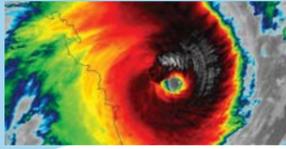


A tropical Cyclone (also known as typhoons or hurricanes) is a violent rotating windstorm that develops over warm tropical waters warmer than 26.5°C and located between 5° and 15° latitude.

Tropical Cyclones affect nearly all Pacific Islands countries and are the most frequent hazard to affect Fiji with around 2 – 3 cyclones occurring every year. As a result of climate change, cyclone frequency has doubled in the last decade. The cyclone season in Fiji runs from November to April and some cyclones do occur outside the season.

## Tropical Cyclone

Strong winds can continue for hours, days, even causing widespread damage to buildings, infrastructure and vegetation and causing loss of life.



Wind speed levels of a tropical cyclone are:  
 Gale Force Winds : 63-87 km/h  
 Storm force winds : 88-117 km/h  
 Hurricane force winds: 117 + km/h

Torrential rains can result in widespread flash flooding and river flooding. Up to 600mm and more of high intensity rain can be produced in one day. These rains can also trigger landslides in hilly areas, which may already be sodden due to previous rains.

Eg. Although Cyclone Dani skirted past Fiji in 1999, it brought with it torrential rains that caused severe flash flooding,

devastating western Viti Levu and killing seven people.

Storm surges and waves created by low atmospheric pressure and strong cyclonic winds blowing over long distance. A storm surge is a raised dome of seawater about 60-80km wide and 2-5m higher than normal sea level. As the cyclone makes landfall, storm surge and waves inundate coastal areas. At the coast, storm surge and waves are the greatest threat to life and property and also cause severe coastal erosion. In low-lying atolls, a surge may inundate the whole island.



Further Salt spray and Lightning can cause considerable damage to crops, forests and infrastructure.

## Cyclone Categories

TROPICAL CYCLONE	SEVERE TROPICAL CYCLONE
<p><b>Damages:</b> Minimal            No real damage to buildings. Coastal road flooding and minor pier damage.            Eg. TC Gene Jan 27-29, 2008.</p> <p><b>Wind Speed (km/h):</b> 119-153</p> <p><b>Storm Surge (m):</b> 1-1.5</p>	<p><b>Damages:</b> Moderate            Damage to roof, window, and door. Piers, shrubs damaged, trees felled. Coastal and low-lying escape routes flood. Craft break moorings.            Eg. TC Mick Dec 13-15, 2009</p> <p><b>Wind Speed (km/h):</b> 154-177</p> <p><b>Storm Surge (m):</b> 1.5-2.5</p>
<p><b>Damages:</b> Extensive            Structural damage to houses, utility buildings. Shrubs stripped, large trees felled. Low lying escape routes cut off. Terrain less than 1.5m above sea level flooded. Coastal evacuation.            Eg. TC Ami Jan 12-15, 2003.</p> <p><b>Wind Speed (km/h):</b> 178-209</p> <p><b>Storm Surge (m):</b> 2.5-3.5</p>	<p><b>Damages:</b> Extreme            Extensive curtainwall failures, roofing failures on small houses. Extensive damage – doors, windows. Low-lying escape routes cut off. Major damage to lower floors of nearshore structures. Terrain lower than 3m above sea level may flood. Massive evacuation up to 10km inland.            Eg. TC Evan Dec 16-18, 2012.</p> <p><b>Wind Speed (km/h):</b> 210-249</p> <p><b>Storm Surge (m):</b> 3.5-5.5</p>
	<p><b>Damages:</b> Catastrophic            Complete roof failures, some complete building failures, utility buildings blown away. Severe and extensive window and door damage. Low-lying escape routes cut off. Major damage to lower floors of all structures less than 4.5m above sea level. Massive evacuation up to 16km inland. Eg. TC Winston Feb 20th</p> <p><b>Wind Speed (km/h):</b> &gt;250</p> <p><b>Storm Surge (m):</b> &gt;5.5</p>

## How to Prepare

### PRE-SEASON PREPARATIONS

- Be aware of Cyclone Warning Systems
- Check your house for structural weaknesses
- Identify the safest room in your house
- Clear your property of loose objects/material that could blow about during extreme winds. Trim tree branches away from windows and power lines
- In case of a storm surge warning, know the nearest safe high ground and the safest access route to it.
- Prepare an emergency kit for the family containing a portable radio with spare batteries, torch, fuel lamp, candles, matches, water containers, canned food with opener, spare clothes and beddings, masking tape for windows and plastic bags.
- Clear all drains and waterways on the property.
- Ensure houses have proper provision for earthing lightning.

### UPON HEARING A CYCLONE WARNING

- Listen to your radio for further information.
- Fill water containers and fuel car (if you have one)
- Store or tie down all loose objects in the house.
- Batten down roof. Fix any loose parts of the house.
- Close off shutters. If you live in a flood-prone area, take flood precautions.
- Ensure all the members of the family are present; keep children away from swollen drains and waterways.
- If your house is not structurally safe, prepare to move to the nearest evacuation centre.
- Collect firewood and keep in a dry place.

### DURING THE CYCLONE

- Disconnect all electrical appliances but listen to your battery radio for further information.
- Open louvres on side away from wind to reduce the pull force of the wind on the roof.
- Remain calm, stay indoors but clear of doors and windows. Remain in the strongest part of the building.
- Only use the telephones for very urgent calls
- If the building breaks up, protect yourself with rugs or mattresses under a strong table/bench or hold onto a solid fixture (eg. A water pipe).

### BEWARE OF THE EYE OF THE STORM:

If the cyclone eye passes over a sudden lull in winds occurs and may last up to two (2) hours. The other side of the cyclone then hits and winds resume with equal strength but blowing from the other direction. It is vitally important to remain in shelter during and after the eye passes.

### AFTER THE CYCLONE WIND STORM HAS PASSED

- Don't go outside until officially advised it is safe
- Do not attempt to drive and don't allow children to roam around outside.
- Beware of fallen power lines, damaged buildings, trees or flooded waterways.
- Listen to your radio for advice and updates.

Tropical Cyclone Winston inflicted extensive damage on many islands and killed 44 people. A total of 40,000 homes were damaged or destroyed and approximately 350,000 people—roughly 40 percent of Fiji's population—were significantly impacted by the storm. Total damage from Winston amounted to FJ\$2.98 billion (US\$1.4 billion).



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