

Precautionary measures before a cyclone

1. **Check the strength and stability of buildings**, reinforce all the **fragile** and **breakable parts** of the **house** such as doors, windows and roofs.
2. Cut and **remove** all unsafe dead and **dying branches** around buildings.
3. **Clean up the roof, rain gutters, drain channels and floor drains.**
4. **Protect** windows and glass doors with shutters (e.g. adhesive tape or wooden planks) to avoid breaking.
5. **Secure all light and loose objects** that may be thrown around by the strong wind.
6. Be careful and make sure **no heavy objects** are **blocking** the **exits** and **emergency exits**.
7. **Identify** the **nearest safe places** and the **route to get** there quickly with your family.
8. Know the **contact numbers of family** members and arrange a meeting point in case you lose each other.
9. **Inform** all family members about preparedness measures during and after the cyclone.
10. **Keep important documents** in a **safe place** and **have copies and scans** of these documents in other safe places.
11. Listen to **official news** and **instructions** from the Department of Meteorology and Hydrology.

Measures during a cyclone

1. **Stay inside buildings** to be safe from items blown by the storm.
2. **Close all doors and windows** and make sure that they cannot break with the wind.
3. To prevent injuries by breaking glass, **stay away from glass doors and windows.**
4. The **safest areas** in a house building are those **between double walls.**
5. **Avoid unnecessary calls** that could burden the connection lines.
6. Listen to **officially released news** and follow the instructions.
7. **Turn off electricity** in possible flooding areas.

8. Be prepared to **move to places**, if you are living in coastal or flood-prone areas.
9. **Take pets** with you if possible and **do not bind** them if not necessary.

Measures after a cyclone

1. **Beware of damaged cables, power lines and tree branches.** Inform the relevant authority and help clarify.
2. **Clean up mud and dirty water** after withdrawal of the cyclone.
3. **Check** buildings, water pipes, power lines and other connecting lines **for damages.**
4. **Dry out the parts** of the building that could be damaged by **mould or pests.**
5. **Avoid contact** with flooded areas as electricity may flow from **damaged power lines.**
6. Wear **appropriate footwear** to avoid injuries from sharp objects.

Emergency numbers:

Police Department 199, Yangon: 01 549309
Fire Services Department 191, Yangon: 01 252011
Ambulance (YGH) 01 8256112

Publishers of the pamphlet

Yangon City Development Committee
 Urban Planning Department
 www.ycdc.gov.mm



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Flood Control Centre
 Cologne



Cologne Fire Department,
 Institute for Security Science and Rescue Technology



German Committee for
 Disaster Reduction



Department of Urban and Housing
 Development, Ministry of Construction



University of
 Yangon



Centre of Excellence for Urban and
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Myanmar Environment
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www.myrisk.uni-koeln.de

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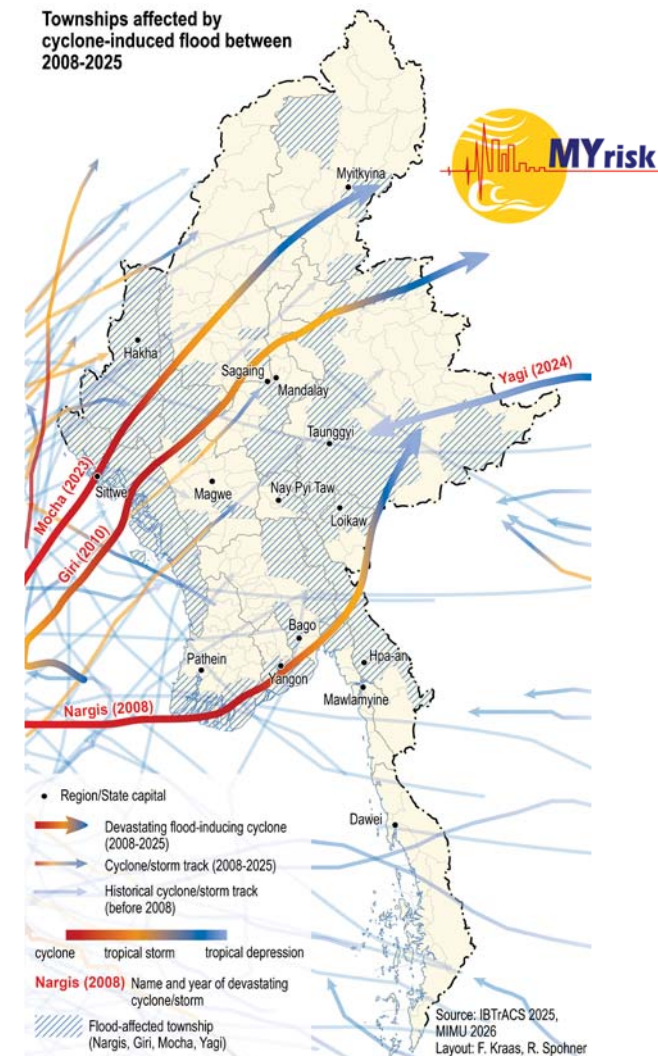
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Recommendations for tropical cyclones

Townships affected by
 cyclone-induced flood between
 2008-2025

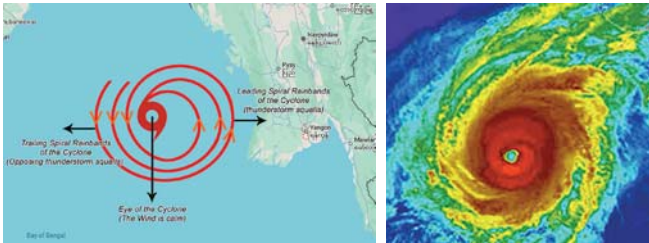


Risk profile of Myanmar

Myanmar is exposed to a variety of hazards such as earthquakes, floods, tropical cyclones, heatwaves, landslides and fires. Dealing with these hazards requires preventative measures and preparation. This pamphlet contains information on **tropical cyclone preparedness.**

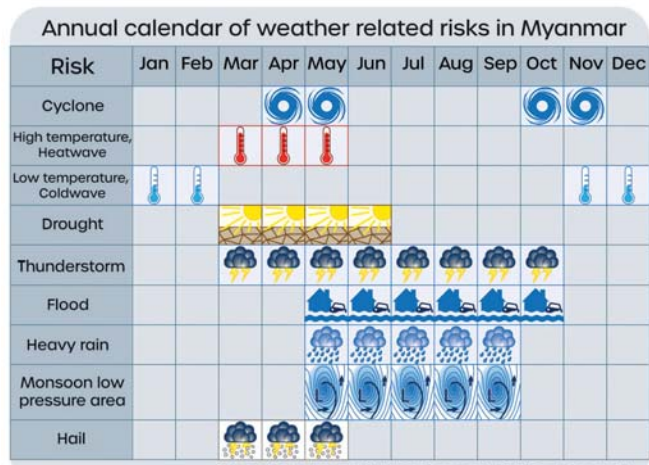
What is a tropical cyclone?

A tropical cyclone is a **storm** that can **cause enormous damage to people, animals and infrastructures**. Cyclones are caused by the evaporation of the warm ocean surface. The humid air with water vapors creates clouds that are constantly forming as the earth rotates and the wind blows harder. These clouds can move from the ocean towards the mainland and can become storms of hundreds of kilometers in size.



Source: Department of Meteorology and Hydrology

Inside the cyclone is a **windless and cloudless area, the 'eye'**. It is surrounded by areas of the strongest winds, heavy rain and clouds. It is important to know how a cyclone is constructed: stormwinds can blow due to the cyclone precursor before the actual cyclone reaches the coast. The wind can calm down at the epicenter (eye). After a calm wind period, strong winds blow again due to the clouds around the cyclone's eye. The **behaviour of a cyclone can change immediately**, even after it has been silent and it could turn out to be a strong cyclone.



Source: Department of Meteorology and Hydrology (changed)

Graph: © R. Spohner

It will be safe only when the relevant authorities and the media report that the cyclone is over. In Myanmar, tropical cyclones occur **mainly** after the intense heat in the **pre-monsoon** season (**April to May**) and **after the monsoon** season (**September to November**).

Possible hazards of tropical cyclones

1. Storm surges **like high waves** are the **most dangerous forces during a cyclone**.
2. Tropical cyclones are particularly **dangerous in coastal areas**.
3. People can be injured by the **objects scattered** in cyclone-affected areas.
4. Invisible **objects floating in flooded areas** can also be dangerous (for example: underwater trees and rocks, and **power lines/electric cables**).
5. Tropical cyclones can cause terrible damage through **thunderstorms** and **violent winds, heavy rainfall** with **floods** in lowland and **landslides** in mountain areas.
6. The cyclone's **pathway can change suddenly** so the exact nature of a cyclone can only be determined shortly before it strikes. Therefore, it is **necessary to be prepared**.

Types of cyclones

Cyclone level	Wind speed level	Distinctive features or characteristics
Low pressure area	< 20 miles	<ul style="list-style-type: none"> • Dust and paper are scattered. • The leaves and twigs move and the wind will blow.
Weak cyclone	20 – 31 miles/hour	<ul style="list-style-type: none"> • Small trees, twigs and the telephone lines swing. • Umbrellas are difficult to use.
Small cyclone	32 – 38 miles/hour	<ul style="list-style-type: none"> • Trees swing and the wind blows.
Cyclone	39 – 54 miles/hour	<ul style="list-style-type: none"> • Branches and small trees break, roofs and chimneys are blown off and some buildings may be destroyed.
Strong cyclone	55 – 72 miles/hour	<ul style="list-style-type: none"> • Trees may uproot and buildings may be destroyed.
Extremely strong cyclone	73 – 137 miles/hour	<ul style="list-style-type: none"> • Trees may uproot and several places may be destroyed. • There are coastal floods and electricity shortage.
Super strong cyclone	>138 miles/hour	<ul style="list-style-type: none"> • There may be complete destruction of wooden houses, collapsed roofs, rising waves, trees falling and electricity shortage.

Source: Department of Meteorology and Hydrology

Cyclone alert colours according to the intensity and tract of cyclone

Yellow	Cyclone forming but not headed towards the Myanmar coastal area
Orange	Cyclone forming and heading towards the Myanmar coastal area
Red	Cyclone approaching and will move towards the Myanmar coastal area in the next 12 hours
Brown	Cyclone directly passing the Myanmar coastal area
Green	Cyclone withdrawing from the cyclone disaster. The area is safe.