

Tsunami Explained

A tsunami is a series of waves generated by a sudden upward movement of the ocean floor due to earthquakes.

Tsunamis can also be generated by undersea landslides, volcanic eruptions, and meteorite impacts.

A tsunami can travel great distances, sometimes across entire oceans, at up to 950 kilometres per hour in the open sea. It can range from a few centimetres in height offshore to many metres high once the wave slows down and shoals in shallow water.

Depending on how tsunamis approach the coastline, they may look like rapidly rising or falling tides or a series of breaking waves.

The first wave may not be the highest and because a tsunami is like a surge of water, it is much more powerful than a normal beach wave of similar height.

Not all earthquakes cause tsunamis – only those with significant upward movement of the sea floor.

Although the risk of a tsunami impacting the Australian coast is relatively low, the effect on vulnerable, low lying areas could be significant. Even relatively small tsunamis of between 25 and 70 centimetres can cause unusual currents and rises in sea level that may impact on swimmers and other coastal users.

Difference Between Storm Tides and Tsunamis

Storm tides and tsunamis can both result in significant damage to coastal areas; however they are generated by different forces.

Storm tides are produced by tropical cyclones. Strong winds whip up the sea and generate currents which push a raised mound of seawater, called a storm surge, onto the shoreline. A surge combined with the astronomical tide is called a storm tide. This rise in sea level comes across the shoreline like a rapidly rising tide.

Tsunamis can be generated by undersea events, such as earthquakes, landslides, volcanic eruptions or meteorites. These can trigger a series of sea waves which can affect vast lengths of coastal land.

Prepare – Make a Family Plan

Read the attached maps and determine where each member of the family is during the day and whether they will need to move to higher ground. Make a plan as to where each member of the family will go.

- If you have children, find out what plans are in place at their school and move students to higher ground.
- Discuss with your employer what plans exists if you need to leave your workplace.

Understanding These Maps

- These maps provide general guidance. The areas below the six metre contour are most susceptible to inundation, however higher areas may be affected in a severe tsunami.
- The Bureau of Meteorology may give advice on the expected height of the waves.

Tsunami Warnings

Tsunami warnings will be issued by the Bureau of Meteorology on advice from the Joint Australian Tsunami Warning Centre (JTWC).

The categories of threat level within tsunami warnings are:

- **No threat** - an earthquake has been detected but it has not generated a tsunami.
- **Marine and immediate foreshore threat** - warning of dangerous waves and strong ocean currents in the marine environment.
- **Land inundation threat** – flooding and dangerous waves will affect low-lying coastal areas.
- **Cancellation** – updates may lead to the cancellation of this warning by JTWC.

Specific evacuation instructions will be broadcast on local radio stations when a tsunami threatens our region.

Evacuations

Council does not have the authority to order mandatory evacuations. This responsibility lies with the Chair of the Townsville Local Disaster Management Group. If such an order is issued, it will be implemented by police.

Free Emergency Alerts

Council's emergency alert system will be used to advise residents of tsunami warnings. Visit Council's website to sign up to the Emergency Communications updates.

When You Hear a Tsunami Warning

Move to high ground.
Seek the highest ground nearest to you. In many cases, you will only need to relocate a few streets away. If you are unable to leave the area by vehicle, go to the third floor of the nearest high rise building.

Take water, emergency supplies and listen to the radio.
Continue listening to advice issued by the Bureau of Meteorology. Take other items you need such as baby food and medications. Do not move back to lower ground until an all clear is issued on the radio.

Never go to the shore to watch the tsunami.
As a tsunami travels into the shallow water near the coast, its height grows. If you are at the shore you may be too close to escape.

For Latest Tsunami Warnings

Call 1300 TSUNAMI (1300 878 6264) or visit the Bureau's website bom.gov.au/tsunami

For tsunami assistance call SES on 132 500 or contact Council's Customer Service Centre on 13 48 10

For life threatening emergencies contact 000.

For More Information

Townsville City Council
townsville.qld.gov.au

Emergency Management and Disaster Dashboard
disaster.townsville.qld.gov.au

Bureau of Meteorology
bom.gov.au/tsunami

Modified: 13 December 2023



Townsville Tsunami Evacuation Guide



Regional Map



