



# Coastal inundation Fact Sheet

2016 Tasmanian State Natural Disaster Risk Assessment

**Coastal inundation events** are the temporary flooding of a portion of land within the coastal zone due a combination of abnormally high tide, waves or storm surge. While coastal inundation presents a significant flood risk to the community now, its full impact will not be realised until the impacts of climate change are felt. Currently the most prevalent types of flooding are flash flooding and riverine flooding.

Coastal inundation events are caused by the interaction of riverine, coastal and oceanic factors, in contrast to tsunamis that are caused by a geological event (e.g. an offshore earthquake). For example, low pressure storm systems temporarily raise local sea level (i.e. the inverse barometer effect, where a fall in surface pressure of 1 hPa = 1 cm rise in sea level), causing a storm surge. High winds during these storms can also push the water against the coast as well as generate or amplify swell and wave action.

Low pressure systems are also associated with high rainfall as river levels rise from out-flowing and in-flowing waters. The most destructive coastal inundation event is known as a 'storm tide', which is when the highest tides (such as a spring 'king tide') coincide with a storm surge.

These events, when combined, bring about abnormally high sea level, resulting in significant inundation of low-lying areas. Recent modelling suggests low-lying areas around rivers and estuaries are particularly susceptible to storm surge inundation. The risk of coastal inundation events also differs by location. Each location has a unique tidal range, influenced by the way ocean waves meet the coastline. For example, regions with shallow coastal waters are more likely to have a protected coastline, as more wave energy is required to reach the high-tide mark. These complex local effects interact with annual tidal cycles that ebb and flow in response to phases of the sun, moon and longer-term ocean cycles.

The 2016 Tasmanian State Natural Disaster Risk Assessment has identified a high risk of a storm tide event causing a localised temporary sea level anomaly of around 2m. Such a scenario would cause widespread inundation and damage within low-lying coastal areas, with some buildings and structures destroyed and some areas inaccessible for 12-24 hours.

## Government, communities and individuals all have a role to play in preparing for coast inundation

### What is the Government doing?

Government is currently undertaking the following activities to help reduce the impact of coastal inundation flood events:

- maintaining emergency response capability
- community education and awareness-raising programs encouraging individual awareness and preparedness to coastal inundation events
- maintenance of critical infrastructure in the coastal zone

### What can you do?

Communities and individuals cannot rely on government alone to prepare for and respond to coastal inundation flood events. You can help reduce the effects of future coastal inundation events by knowing what to do.

## What to do before, during and after a coastal inundation event

### BEFORE

- If you live on or regularly visit the coast, get to know the coastal inundation history and the flood prone areas of your community.
- Be prepared. Don't be fooled by a coastal inundation event - they can occur very quickly and can be widespread.
- Develop a flood emergency plan. Know the nearest high ground and identify safe evacuation routes and centres.
- Understand the impacts of coastal inundation events on you and the people around you, especially people at high risk, including the elderly and people with mobility problems.
- Understand the coastal inundation flood warnings issued by the Bureau of Meteorology.
- Put together your Emergency Kit, including a battery operated radio, torch and spare batteries and know where it is. Place important papers, photos, identification and valuables into your Emergency Kit.

### DURING

To reduce the impact of coastal inundation events on you, take the following actions when a coastal inundation event is expected or occurs:

- Check that family, friends and neighbours know about the warnings and are prepared.
- Be aware of high waves and strong currents.
- NEVER go onto the beach, a breakwater, estuary or harbour to watch a coastal inundation flood event. Stay away from the water's edge - a coastal flood, such as a storm surge, can move faster than people can run.
- NEVER allow children to play in, or near, floodwaters.
- NEVER swim or wade in floodwaters.
- NEVER drive in floodwaters.
- If you are on a ship or boat close to shore and there is sufficient time, return to land and secure your boat before seeking high ground.
- Continue to monitor your local media for updated information and advice.

When you leave – What to take – Where to go:

- For your own safety, always follow the instructions of emergency services and local officials and be ready to evacuate if necessary.
- Turn off the electricity, gas and water at the mains.
- Take your Emergency Kit.
- Take your pets with you.
- Move to friends or family in safer areas, or to an evacuation centre if advised by authorities. Wherever you go, let others know.
- If you cannot reach high ground or an emergency shelter, take shelter in the upper floor of the closest sturdy building and stay there until advised that it is safe to leave.

For the most up-to-date coastal inundation warnings, tune in to your local ABC radio station, visit the Bureau of Meteorology's website at [www.bom.gov.au](http://www.bom.gov.au) or TasALERT at [www.alert.tas.gov.au](http://www.alert.tas.gov.au).

### AFTER

- Keep listening for radio updates, road re-openings, community meetings, etc.
- NEVER return to low lying areas unless you have been told it is safe to do so by emergency services or public officials.
- Be aware of road hazards, such as mud, sand or debris on the road, damaged roads/bridges or crews working on clean-up and repairs.
- If you are on a ship or boat at sea, do not return to port until advised it is safe to do so. Damaging wave activity and unpredictable currents can affect harbours for a period of time after coastal inundation events.

If your home is affected by a coastal inundation flood event:

- Do not turn on your gas and electricity until you are sure it is safe to do so. Have all wiring and electrical equipment tested by an electrician.
- If entering flood-affected buildings, use a torch, never matches or candles.
- Floodwaters pick up sewage and other contaminants, so wear strong boots, gloves and other protective clothing during the clean-up.
- Boil all drinking water until authorities say the water supply is back to normal.
- Do not go to the beach or into the water until you are told it is safe to do so.



**For the most up-to-date information on coastal hazards, refer to the 'Coastal hazards in Tasmania' section of the Department of Premier and Cabinet website [www.dpac.tas.gov.au](http://www.dpac.tas.gov.au)**