

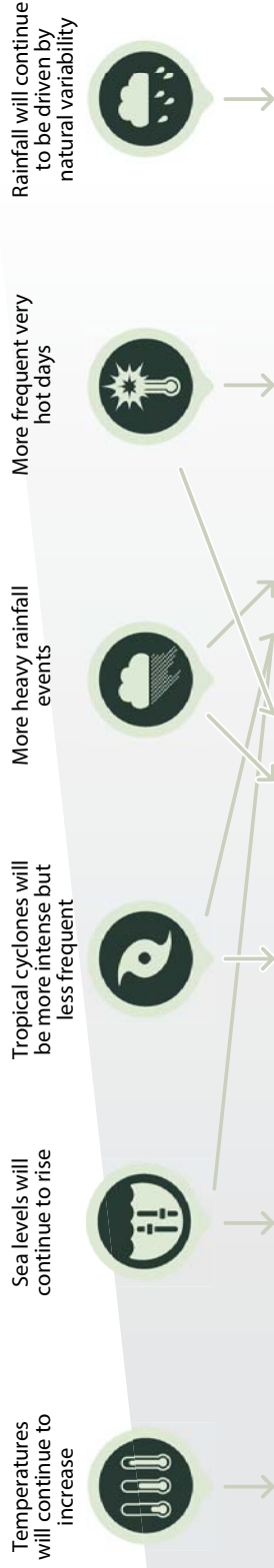


Coastal communities and climate change



What changes
are likely?

What can
be done?



- Livability in some coastal areas will be affected by more frequent or intense extreme weather.
- Infrastructure and services will be damaged or interrupted more frequently.
- Remote coastal settlements are especially vulnerable to reduced access to services and deteriorating climate conditions.
- Islands and low-lying areas will be most affected by sea level rise.

- Damage to coastal vegetation through sea level rise, cyclonic winds, increased erosion and flooding will expose coastal homes and infrastructure.
- Coastal agriculture will be affected by increased river flooding, the upstream extension of tides and saltwater contamination of freshwater wetlands and groundwater.
- Fishing and tourism will be affected by changes in fish distribution, declining condition of the Great Barrier Reef and estuaries.
- Cultural values will be impacted by changes in fish, turtle and dugong numbers, as well as changed patterns of flowering and fruiting in food plants.

Plan

- Identify and evaluate alternative strategies to respond to impacts, including protective structures such as sea walls, elevating buildings or relocating from vulnerable locations.
- Plan for climate change adaptation within the context of other key pressures on communities, such as the severe economic disadvantage of some Indigenous communities.
- Use information about locations vulnerable to sea level rise, storm tide inundation, flooding from heavy rainfall and coastal erosion to plan buildings and infrastructure.
- Anticipate the more frequent need for disaster response and recovery.
- Develop strategies that consider implications for communities of being isolated from healthcare and other services more often.
- Include the economic value of services provided by natural systems.

Research

- Develop clear understanding of the areas threatened by sea level rise, storm surge, flash flooding, excessive heat and bushfires.
- Develop understanding of the cultural, social and economic consequences of relocating people from vulnerable areas.
- Evaluate the ecological, social and cultural impacts of adaptation options, as well as economic implications.
- Monitor impacts of climate change on Indigenous cultural practices such as harvesting.

Implement

- Work together across community sectors to promote community-based adaptation to climate change.
- Increase vegetation cover on dunes to buffer coastal homes and infrastructure.
- Promote building design that reduces exposure to heat and disease vectors such as mosquitoes.
- Generate rainwater storage and power generation by households or local networks
- Construct more cyclone shelters in vulnerable areas such as the Cape. Ensure residents can get there.
- Develop backup water and power supplies.

Educate

- Increase awareness of the impacts of climate change on coastal communities.
- Promote understanding of the need to make changes (adapt) in response to climate change.
- Communicate the opportunities to get involved in planning for adaptation.

Coastal communities and climate change

Adaptation to the changes brought about by climate change will involve all of society. The type and extent of action required will depend on how much we are able to reduce emissions of global greenhouse gases. Some adaptation actions may require relatively small, continuous improvements in current practices, whereas others will involve fundamental changes to our ways of doing things, including what we do and where we do it.

Coastal communities in the Wet Tropics cluster region are particularly vulnerable to a range of climate changes, in particular sea level rise, more intense tropical cyclones and more heavy rainfall events. These changes will directly impact coastal communities. Changes in natural systems will also affect coastal communities, for example through changes in the viability of industries such as reef tourism or fisheries. Developing and implementing suitable adaptation strategies will require strong links between researchers, planners, NRM groups, industry bodies, conservation agencies and residents. Community-led discussions will help ensure that adaptation pathways are based on realistic understanding of community values, opportunities for change, and the capacity of the community to change.

Additional information

Hilbert, D. et al. (2014) Climate change issues and impacts in the Wet Tropics NRM region. <https://terranova.org.au/repository/climate-change-issues-and-impacts-in-the-wet-tropics-nrm-cluster-region-1>

Moran C. et al. Eds. (2015) Adaptation pathways and opportunities in the Wet Tropics NRM cluster region. <https://terranova.org.au/repository/adaptation-pathways-and-opportunities-for-the-wet-tropics-nrm-cluster-region-volume-1-introduction-biodiversity-and-ecosystem-services>



What's happening in your region

Projected changes in climate (and degree of confidence)



Substantial increases in average, maximum and minimum **temperatures**
Very high confidence



Substantial increases in the temperature, frequency and duration of **hot days**
Very high confidence



Average **sea level** and height of extreme sea-level events will continue to rise
Very high confidence



Increases in **evapotranspiration** in all seasons
High confidence



Increased intensity of **extreme rainfall**
High confidence



Less frequent but more intense **tropical cyclones**
Medium confidence



Changes to **rainfall** are possible but unclear
Low confidence

http://www.climatechangeinaustralia.gov.au/media/cia/2.1.5/cms_page_media/172/WET_TROPICS_CLUSTER_REPORT_1.pdf
The degree of confidence in each projection is determined by considering the number of models that project a similar long-term trend, together with how well we understand the mechanisms underlying the models. If the evidence is robust and there is a high level of agreement among models about trend in that climate variable, scientists have a high level of confidence in the projection.

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