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# Coastal towns tailor their blueprints for the future

**Coastal communities cities in Tasmania, Western Australia and Queensland have been given online access to a planning framework for climate adaptation via a new website, 'Coastal Climate Blueprint'.**

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The website has been used by the towns of St Helens in north-east Tasmania (population of 3000), Bowen in North Queensland (population of 10,000) and Geraldton in Western Australia (population of 30,000). It was developed by the University of Tasmania's (UTAS's) Institute for Marine and Antarctic Studies, Murdoch University and CSIRO.

Project leader, Dr Stewart Frusher from UTAS, says the aim of the project was to help households, firms, organisations and governments understand how they could deal with the effects of climate change in the marine environment.

'Our surveys indicate a perception that pressures on the marine environment are coming from sources other than climate change such as fishing pressure,' he says.

'This means [some] inertia must be overcome [in] convincing communities to undertake marine climate change adaptation planning.'

Dr Frusher says the three centres chosen for the study reflect the situation of those Australian communities that rely economically and socially on the sea.

'Rather than re-invent the wheel each time for each community, we suggest adaptation options that may be applicable in areas confronted with the same or similar problems.

‘Our assessment [also] provides each community with a first-step indication of where specific adaptation may be needed to ensure they remain sustainable into the future.’

Dr Frusher says community organisations such as Coastcare, fishing associations and tourism authorities can use the website to investigate their options in the face of changes in temperature, sea level, wind and ocean acidity levels, which may:

1. impact the timing of migrations, spawning, survival and reproduction of marine species
2. impact Tasmanian oyster harvesting
3. cause a a decline in the production of plankton and corals, which may affect entire food webs
4. lead to more than 30 sub-tropical fish species shifting southwards, to temperate waters.

The science team behind the website cited a range adaptation scenarios leading to gains in employment, such as new recreational and charter fishing opportunities. Negative scenarios include the arrival of a competing pest species. For the three study towns, adaption strategies include:

1. **St Helens:** Warmer ocean temperatures impacting local commercial rock lobster fisheries and encouraging invasive sea urchins. Urchin harvesting for export has increased substantially, providing an additional source of employment.
2. **Bowen:** Closure of cyclone-damaged reefs to allow for stock regeneration around affected reefs, to ensure employment and local fish availability for commercial fishers.
3. **Geraldton:** An increase in ocean temperatures and greater southerly extent of the Leeuwin Current will cause higher mortality among ‘cool water’ aquaculture species such as rock lobster, but will benefit the farming of warm water species.

Source: University of Tasmania

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