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Media Release

Chiefs of Staff, News Directors

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Australian coastal communities plan for a climate future

The most advanced planning tools for coastal communities have been tested in a new climate adaptation analysis for coastal towns and cities in Tasmania, Western Australia and Queensland.

Funded by the Fisheries Research and Development Corporation and the Federal Government, the online tool will help communities respond to the impacts and influences of climate change on marine industries and recreation.

The result is a web site http://coastalclimateblueprint.org.au/ intended to give communities a framework within which adaptation plans can be prepared to meet each community's needs and resource and funding capabilities.

Three coastal centres - St Helens in north-east Tasmania (pop 3,000), Bowen in North Queensland (10,000) and Geraldton in Western Australia (30,000) - were studied during the $495,000 project.

The website was developed by the University of Tasmania's Institute for Marine and Antarctic Studies, Murdoch University and CSIRO. The interactive assessment of community vulnerability to climate change allows community members or local governments to assess where their strengths and vulnerabilities may lie.

Project leader Dr Stewart Frusher said the project was developed so that communities - households, firms, organisations and governments - could understand how they could deal with the effects of climate change in the marine environment.

"Even though there was considerable knowledge with respect to locally observed climate-related phenomena, knowledge and awareness of flow-on consequences and knock-on economic effects of marine climate pressures dependent sectors such as commercial and recreational fishing, marine tourism and aquaculture appeared to be lacking.

"Our surveys indicate a perception that pressures on the marine environment are coming from sources other than climate change such as fishing pressure. This means a certain level of inertia must be overcome with respect to convincing communities to undertake marine climate change adaptation planning.

“We see this as a way forward for coastal communities to manage their climate future,” he said.
Dr Frusher, from the Institute for Marine and Antarctic Studies, said the three centres chosen for the study reflected the situation of many Australian communities which often rely economically and socially on marine sectors.

“Fishing is a relevant example and although not all fishing communities are the same, some general economic, social, cultural and geographic characteristics could make them vulnerable. 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 provides each community with a first-step indication of where specific adaptation may be needed to ensure they remain sustainable into the future,” he said.

Dr Frusher said community organisations such as Coastcare, fishing associations and tourism authorities – can investigate their own options at - www.coastalclimateblueprint.org.au/

Background
Recognising the combined role of climate and non-climate change pressures in shaping marine sectors in small coastal communities is important to allow a holistic overview to be developed and thus avoid potential unintended adaptation consequences.

Impacts
- physical climate changes in temperature, sea level and wind regimes impacting the timing of migrations, spawning, survival and reproduction of marine species.
- varying implications for commercial, recreational and charter fishing by state such as rainfall changes halting Tasmanian oyster harvesting or rises in Qld ocean temperatures.
- Ocean acidity leading to a decline in the production of plankton and corals, which may affect entire food webs.
- Ocean temperature hotspots with gradual warming in south-east Australian leading to more than 30 sub-tropical fish species shifting to temperate waters

Surveys were carried out in 2012 in the three centres – St Helens, Bowen, Geraldton. Businesses surveyed included commercial - recreational fishing, dive - charter tourism, tackle, retail, real estate, caravan parks, accommodation, restaurants, aquaculture education, local government and fish processors.

The science team putting together the coastal climate blueprint cited a range of examples of adaptation options. Some adaptations would be in response to positive impacts ie gains in employment, business in recreational and charter fishing etc with a shift in species.

Others are negative such as the arrival of a competing pest species. An interactive assessment of community vulnerability to climate change allows community members or local governments to assess where their strengths and vulnerabilities may lie.

For example, one community may have very high education levels and financial capital but be lacking in the necessary coastal infrastructure to allow commercial fisheries and aquaculture development. This interactive assessment provides each community with a first-step indication of where specifically adaptation may be needed to ensure they remain sustainable into the future.

Examples

St Helens: Warmer ocean temperatures off north-east Tasmania are impacting local commercial rock lobster fisheries but are a boon for invasive sea urchins. Urchin harvesting for export has increased substantially, providing an additional source of employment.
Bowen: Commercial fishing in Bowen was impacted by the closure of cyclone-damaged reefs to allow for stock regeneration around affected reefs, to ensure employment and local fish availability.

Geraldton: Decline in abundance of rock lobster puerulus expected to cause a decline in breeding stock in future. Climate change induced increase in ocean temperatures and greater southerly extent of the Leeuwin Current increase stress and causes higher mortality of 'cool water' aquaculture species but benefits aquaculture potential of warm water species.

https://www.youtube.com/watch?v=HpWWHmRQ45s#t=135

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