



National Environmental
Research Program

TROPICAL ECOSYSTEMS *hub*

NERP Tropical Ecosystems Hub Conference 2013

**Wednesday 8 May 1030-1230
Forum Synopsis**

What does the future hold for Torres Strait and its Indigenous People?

Convener: Damian Miley
Program Manager (Environmental Management)
Land and Sea Management Unit, Torres Strait Regional Authority



Australian Government

**Department of Sustainability, Environment,
Water, Population and Communities**

Forum Synopsis Wednesday 8 May 1030-1230

Forum: What does the future hold for Torres Strait and its Indigenous People?

Convener: Damian Miley, Program Manager (Environmental Management), Land and Sea Management Unit, Torres Strait Regional Authority

The Torres Strait region covers an area of more than 35,000 square kilometres, of which 2.6 percent is terrestrial land, 6.2 percent is tidally inundated reef flats, and 91.2 percent open seas, most of which are relatively shallow. There are more than 247 islands and a multitude of cays, sandbanks and coral reefs scattered throughout the region, which stretches 200 kilometres from the tip of Cape York Peninsula (also referred to as the Northern Peninsula Area) to the south-west coast of Papua New Guinea (PNG).

Located on one of the world's most extensive continental shelves, the Torres Strait has long been recognised for its ecological complexity and biodiversity. The region has significant tropical marine ecosystems, and populations of important and vulnerable marine species. The region also has a multitude of habitats including coral reefs, mangroves and extensive seagrass meadows. The clear waters and coral reefs to the east also provide rich fishing grounds within the most northerly section of the Great Barrier Reef. Marine turtles are found throughout the entire region, however predictions, particularly based on Raine Island data, are that the green turtle will suffer a catastrophic population decline in the next ten years unless dramatic actions are taken. Extensive seagrass beds in the west and north support the World's largest dugong population, and represent a very significant proportion of Queensland's high density habitat for this animal, listed as 'vulnerable' under national environmental law.

The Torres Strait marine environment is of national and international significance. Located at the junction of the Arafura and Coral Seas, it is a major shipping route for transiting between the Indian and Pacific Oceans. The Torres Strait shares international borders with neighbouring PNG and Indonesia. The Torres Strait Treaty between PNG and Australia establishes the Torres Strait Protected Zone and other mechanisms for the shared governance of the region, including access to and management of its marine resources.

The region has one of the highest proportions of Indigenous people, many of whom still have strong affiliation with their land and sea. Native Title determinations have been made for most of the islands in the region, and a Regional Sea Claim process is being finalised.

The responsibility for managing environmental issues in the Torres Strait region is a complex arrangement which spans a number of key organisations to varying degrees. They are the:

- Various State and Federal Australian Government agencies
- Torres Shire Council (TSC)
- Torres Strait Islands Regional Council (TSIRC)
- Torres Strait Regional Authority (TSRA) and, to a lesser extent
- Northern Peninsula Area Regional Council (NPARC).

Of these, the TSRA is the only Commonwealth Statutory Authority and, as such, the bulk of the Australian Government's environmental program is delivered through this agency. Having said that, a lot of effort is put into ensuring all organisations work cooperatively towards a common goal in managing the region's assets including the unique environment.

Global pressures such as peak oil, shipping traffic and climate change will also have complex impacts on environmental assets, particularly when combined with human pressures. The extent of the potential effects of climate change, along with the geographic, social, cultural and spiritual characteristics of the Torres Strait region make Torres Strait communities amongst the most vulnerable in Australia. The effects of climate change threaten not only the islands themselves, but also marine ecosystems; and therefore the life, livelihoods and the unique culture of Torres Strait Islanders. This uncertain future will present challenges

for achieving resilient Torres Strait communities, but may also provide opportunities for optional economic development opportunities.

The five papers presented in this session all contribute in various ways to our understanding of the conservation status (mangroves and wetlands, turtle and dugong, fish, and coral reefs) and addressing the question of resilience and threats (disease dynamics and building resilient communities).

- Professor Helene Marsh and Dr Mark Hamann continue to monitor dugong and turtles in the Torres Strait including movements, connectivity of populations and aerial surveys to estimate abundance. Prof Marsh recently reported that the Torres Strait has the healthiest and largest population of dugong.
- Dr Jon Brodie recently completed a study identifying the main water quality risks in the region and recommending a monitoring program to measure the threats from multiple water quality stressors, including toxic metals, oil, ship anti-foulants and litter.
- Dr Damien Burrows and Dr Norm Duke are assessing and monitoring the condition of mangroves and freshwater wetland habitats in the Torres Straits in collaboration with the traditional owners. Mangroves are important for shoreline stabilisation and as critical habitat for many species of fish, crustaceans and shorebirds.
- Dr Erin Bohensky's research explores potential future scenarios for the region, and will identify 'best bet' strategies to protect livelihoods and achieve sustainable economic development through participatory scenario planning with Torres Strait and PNG communities and stakeholders, informed by integrated ecosystem and climate modelling.
- Dr Hugh Sweatman and Dr Ray Berkelmans have designed and implemented a reef health monitoring program in the Torres Strait. Sea temperature monitoring, remote sensing and real-time monitoring of the health of the coral reef systems are delivered by Indigenous sea rangers in collaboration with the research team.

Please also note that other Torres Strait NERP research not covered in the Forum include work by Dr Susan Laurance (JCU) who is pioneering new surveillance techniques to detect emerging infectious diseases, with future outbreaks predicted to occur in frontier regions of tropical countries. Dr Eric Lawrey (AIMS) is also working closely with TSRA to establish the systems, tools, products and form of information (i.e. e-Atlas) that will maximise the benefit from Torres Strait-based NERP TE Hub research projects. The e-Atlas will be demonstrated by Dr Lawrey during the lunch after this Forum.

Joining the researchers in a Q&A panel session following the presentations will be staff from the TSRA Land and Sea Management Unit who are supporting these projects and delivering on a range of other activities; TSRA elected leaders Kenny Bedford, Member for Erub (Darnley Island) and Fisheries Portfolio Member, and Willie Lui, Member for Warraber and Portfolio Member for Environmental Management, will also be present to provide a political context to the discussion.

Some focus questions for the session:

- Turtles and dugongs are culturally and environmentally important to the Torres Strait, how do we protect populations with the threats of increased shipping, illegal fishing and water quality contaminants in the Torres Strait?
- What role should researchers play in addressing topics such as indigenous hunting in the ongoing media debate?
- As the Torres Strait has one of the most pristine coral reef ecosystems in Australian waters, and coral bleaching, COTS and coral diseases are being detected can and should the GBRMPA extend its research and monitoring activities into the Torres Strait, to cover the GBR reefs north of the Marine Park boundary?
- Are there any other issues you consider to be a threat to the region?