



Snapshot

Maningrida and cyclone Monica

Summary

The remote township and outstations of Maningrida, on the coast of central Arnhem Land, support both customary and commercial industries for the predominantly Indigenous residents. The coastal and estuarine location of Maningrida means it is likely to be vulnerable to sea-level rise, increased storm surge and saltwater intrusion, and more intense cyclones. Saltwater intrusion is a particular threat to local plant and animal species that underpin local enterprises. For the community, its demonstrated preparedness for and resilience to cyclone Monica is a good indication of its adaptive capacity; however there are likely to be more serious challenges in the future from threats to industry and well-being.

The township of Maningrida is located on the estuary of the Liverpool River, on the north central Arnhem Land coast, approximately 500 km east of Darwin. With a population of 2,292, more than 94% are Indigenous. Maningrida comprises the main township and 30 outstations largely located along coastal and river inlets and tributaries. The Kunibídjí people are the traditional landowners of this country. Maningrida residents are highly mobile and move between the township and outstations; they are multi-lingual with 13 major Aboriginal languages and over 50 Aboriginal languages spoken in the region. They participate in a hybrid economy of customary (e.g. harvesting of wildlife) and commercial (e.g. production of art for sale) markets. Both subsistence and commercial production rely heavily on natural resources, such as pandanus for art, hunting and fishing. Access to the town is by road and air, but road access is restricted during the wet season. Food and supplies come from Darwin either by sea or road.

Projected climate change impacts

Maningrida is exposed to a range of potential and actual climate change impacts. These include sea-level rise, increased storm surge and saltwater intrusion, and more intense cyclones. Maningrida's customary economy and traditional way of life rely on a number of freshwater plants and animal species. Of particular concern is salt water intrusion that may impact the Pandanus plant as the community relies heavily on this plant for its arts industry. Additionally, Maningrida is highly vulnerable to tropical cyclones.

Keywords

Aboriginal community, remote settlements, Northern Territory, adaptive capacity, resilience

As in much of the tropical north, climate in the Maningrida region is hot and humid, and even a small increase in average temperature would have a significant adverse effect on human health and comfort as well as on flora, fauna and marine species. Moreover, the threat of sea-level rise and increased storm surges associated with more intense tropical cyclones may result in the need to relocate the community.

Cyclone Monica, 2006

In 2006, severe Tropical Cyclone Monica (Category 5) passed to the north of the township, making landfall 35 km to the west. The cyclone caused some form of damage to 75% of houses in Maningrida (Figure 1), extensive defoliation (Figure 2) and loss of vegetation as well as minor to major flooding in some catchments. A storm surge of 5-6 m was reported. The community was well prepared for the cyclone and had cleared loose items that could become airborne, stockpiled clean water, and gathered in cyclone shelters. The cyclone was a close call for the community, but they were able to demonstrate their resilience, capacity and adaptability in dealing with a natural hazard. There was a sense that the Indigenous members of the community were largely unaffected by the cyclone:

"By contrast, the vast majority of non-Aboriginal people were traumatised to some extent. Their preoccupation with cleaning up, restoring functionality and rebuilding was tangible, profound and exhausting. The government response was quite slow, and the Maningrida community was largely left without assistance. Strangely, this seemed to matter little. There were adequate food supplies, the barge service which resupplies the community was only slightly delayed, and telephone, power and water services were restored within a few days. Mattresses and bedding were dried out and normal routines resumed." (Maningrida senior community representatives, quoted in Altman and Jordan 2009, p. 105).



Figure 1: Damage to households caused by Cyclone Monica. Photo: © Glenn Campbell.

Adaptation and resilience

Discussions with representatives from the local community highlight their concerns about the direct impacts of sea-level rise, saltwater intrusion, increased average temperatures and more intense tropical cyclones as well as indirect impacts such as increased costs of goods and services and the impacts of government policies.

"The threat posed by sea-level rise is an obvious impact. Maningrida is a coastal community and the Traditional Owners are 'saltwater people' with an historical knowledge of and reliance upon marine resources. Any environmental modification that impacts on access to food is a serious matter for these people. Significant sea-level rise will lead to dispossession and dislocation of coastal inhabitants" (Maningrida senior community representatives, quoted in Altman and Jordan 2009, p. 104).

For millennia, Aboriginal Australians have adapted to their changing environment. The Maningrida community's response to and recovery from Tropical Cyclone Monica in 2006 hinged on the ability to endure inconvenience, loss and hardship. It is a positive sign of possible high capacity to adapt to future impacts from climate change. Although Aboriginal communities possess a wealth of local knowledge and demonstrated resilience to historical climate shocks, in the future there will be unprecedented weather and climate perturbations due to climate change that will threaten livelihoods, homes and infrastructure.

The Maningrida community illustrates the potential interdependent and fluid dimensions of vulnerability and resilience in the coastal zone. It highlights the need to consider local social and economic factors alongside projected physical risks—such as sea-level rise and tropical cyclones—and that vulnerability research should cut across local, regional and national scales (Adger 2006). Contemporary resilience indicators for the Maningrida community, such as the demonstrated recovery after Cyclone Monica, might be more significant than traditional socio-economic vulnerability indicators, such as income and housing status. However, although people in Maningrida can draw on local knowledge and cultural capital, their geographic isolation and cultural and economic dependence on the local ecology ultimately heighten their risk from environmental modifications arising from climate change. The risk of relocation and disconnection from country because of inundation would also be a very serious outcome.

References

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Figure 2: Defoliation caused by wind gusts that reached up to 360 kmph at Junction Bay during cyclone Monica. Photo: Bill Milne © Commonwealth of Australia, Bureau of Meteorology, 2008.



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