

## **Securing Water Supplies for the Remote Aboriginal Community of Milingimbi Island, NT**

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For the 1600 indigenous residents who live in Milingimbi, a remote island off the coast of Arnhem Land in the Northern Territory, Australia drinking water is a scarce and precious resource for which they rely solely on aquifers beneath the island. The island's limited groundwater reserve is vulnerable to saltwater intrusion from the surrounding Arafura Sea and may not be capable of supplying the future water needs of the community. Groundwater recharge of the freshwater lens takes place during the wet season between November and April with very little rainfall occurring during the dry season. Groundwater monitoring has shown that there has been a notable increase in salinity. Recent drilling investigations identified that there is interconnection between the more saline aquifer that lies beneath the fresher shallower aquifer and that over pumping of the fresh aquifer could result in saltwater migration inland and/or contamination by the more saline aquifer below. The main goal of this project was to use hydrogeophysical measurements to support the water supply investigations on Milingimbi Island and engage local community members in training and use of instruments to improve knowledge of the groundwater resource. More specifically, hydrogeophysical methods were used to determine (1) the extent and thickness of the fresh groundwater lens, (2) the salinity distribution across the different aquifers and risks associated with inter-aquifer leakage and saltwater intrusion, and (3) the effective groundwater recharge of the freshwater lens. Involvement of the Crocodile Islands Rangers and traditional owners in the project provided the scientists with important local knowledge about water (gapu) and at the same time, the results of the investigation provided locals with new knowledge about the groundwater system. Collaboration with the ranger group, traditional owners and Milingimbi community will result in water resources management, which is science based and well supported by the local community.