

Annual Report,
1st October 2016 to 31st September 2017

Overview

Commencing in October 2013, the Darwin Harbour Indigenous Marine Ranger Program was an innovative monitoring and training program involving the Department of Environment and Natural Resources (DENR) and Larrakia Nation Aboriginal Corporation (LNAC).

Funding was provided to the Department to establish and implement the Program as an offset for the Darwin Harbour East Arm Wharf expansion managed by the Department of Infrastructure, Planning and Logistics.

Over the past four years the program has developed into a successful collaboration between the Department, Larrakia Nation and other project partners to achieve broader social and environmental benefits through engaging and enhancing Larrakia capacity in marine ecosystem monitoring.



Background

The East Arm Wharf expansion works are subject to the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval. In accordance with the requirements of Condition 33 of the EPBC Act Approval Decision 2010/5304 the Darwin Harbour Indigenous Marine Ranger Program was established.

Implementation of the Darwin Harbour Indigenous Marine Ranger Program was to achieve the following:

- Recruit two indigenous marine rangers.
- Train and engage marine rangers in water quality, sediment health and marine biodiversity monitoring with the DENR.
- Train and engage marine rangers in harbour surveillance and reporting.
- Train and engage marine rangers in migratory bird monitoring with project partners Charles Darwin University & North Australian Indigenous Land and Sea Management Alliance (NAILSMA).
- Contribute to and promote monitoring to stakeholders through the Darwin Harbour Region Report Cards.
- Participate in the annual Darwin Harbour Clean-up Day.

Project Update

For the 2016/17 round of funding rangers were provided with placements within the Department's Aquatic Health Unit and Marine Ecosystem Group. The change in delivery provided both trainees on-the-job training opportunities but also a strong understanding of the background activities involved in monitoring projects. It also strengthened relationships between the rangers and departmental staff who worked closely together during their placements.

Major achievements for this year included the completion of their Certificate III in Conservation and Land Management and Certificate II in Fisheries Compliance courses.

The rangers were heavily involved in harbour water quality, marine fauna, seagrass and sediment monitoring activities. They had an opportunity to work on the Solander (Australian Institute of Marine Science vessel) doing benthic habitat mapping for extended periods at sea.

Training

Approximately 22% of the marine ranger's time has been dedicated to providing opportunities for them to be trained and gain qualifications in the following:

Training Course	Status
Certificate III Conservation and Land Management, Charles Darwin University (CDU)	Complete
Certificate II in Fisheries Compliance, CDU	Complete
Wildlife first aid, handling and rescue training, Darwin Wildlife Sanctuary	Complete
Dolphin Workshop, Department Environment and Natural Resources, Marine Ecosystem Group	Complete
Quad bike training, CDU	Complete
Territory Natural Resource Management, Mapping training	Complete
Marine Fauna Stranding training, Department Environment and Natural Resources Marine Ecosystems Group	Complete
Certificate II in Maritime Operations (Coxswain Grade 1 near coastal)	Ongoing

In addition to formal training the marine rangers also gain on-the-job training provided by the Department and project partners. The training focused on equipping the marine rangers with the skills and knowledge to be able to actively participate in monitoring and research activities in a safe manner.

They included the following:

- Water monitoring techniques (equipment preparation, use and servicing; field techniques; field protocols for recording data, chain of custody requirements; introduction to laboratory chemical analyses and procedures)
- Water flow monitoring, use of equipment, recording data and calculating flow velocities and volumes;
- Seagrass identification, monitoring techniques and data entry
- Dolphin identification, monitoring and data entry
- Migratory bird identification, tracking techniques and I-Tracker
- Microbiology Laboratory skills

- Aquatic pest identification and monitoring techniques
- Marine turtle identification, survey and monitoring techniques
- Dugong monitoring
- Monitoring and surveillance of turtle nesting sites, locations of marine animal remains and unusual marine debris.

On Water Field Activities

It was anticipated that the Darwin Harbour Indigenous marine rangers would spend up to 80% of their time in the field (181 of 230 working days) working towards the following as stated in the offset agreement:

- 39 days/year associated with beach water quality monitoring
- 36 days/year associated with water quality monitoring
- 30 days/year dolphin monitoring
- 20 days/year associated with unscheduled on-water response activities
- 10 days/year associated with unscheduled monitoring and surveillance activities.
- 10 days/year with seagrass monitoring
- 10 days/year fish monitoring
- 10 days/year Marine Wild Watch program
- 10 days/year migratory bird surveys
- 5 days/year with sediment health monitoring
- 1 day/year Darwin Harbour Clean up

Their actual time in the field was approximately 78%, (179 out of 230 working days). Below is a summary of their activities. The remaining days were allocated to training, attending and presenting at conferences, symposiums and conducting community engagement activities.

Field Work Summary Actual	Days/year
Beach water quality monitoring	7
Seagrass and sediment monitoring	41
Water quality monitoring	75
Dolphin monitoring	33
Migratory bird survey (Eastern Curlew project)	5
Seagrass Watch	2
Marine pest & aquatic biosecurity monitoring	2
Darwin Harbour Clean-up day	2
Marine debris, biosecurity and beach cleanup days	12
Marine Wild Watch Program	5

Unscheduled on water response (No incidents of significance occurred)	Whenever on water this activity was undertaken
Unscheduled monitoring or surveillance activities	Whenever on water this activity was undertaken

Community Engagement & Awareness

- Indigenous Land Corporation Regional Conference, Larrakia Nation Rangers display and presentation.
- NT Sea Ranger Conference, Department Environment and Natural Resources, Marine Ecosystem Group.
- Dolphin Workshop @ Crab Claw Island, Larrakia Nation Rangers presentation.
- National Ranger Conference, Katherine, Northern Land Council.
- ABC Darwin news article, Migratory Bird (Eastern Curlew) research project and monitoring with Charles Darwin University.
- Presentations to Mitchell Child Care Centre students about the Darwin harbour monitoring program.
- Rangers attended the Territory Tidy Town Forum
- Kimberly Ranger Forum
- Rangers attended 2016 NT Natural Resource Management Conference, Darwin.
- Active presence of rangers at Tree Point and Gunn Point beaches and Darwin Harbour boat ramps.
- Regular Darwin harbour and marine ranger program reports to the Larrakia Board.

Conclusion

This is the final year of the program delivery. It was a busy year for the rangers and the program again met the requirements of the biodiversity impact mitigation offsets strategy for the East Arm Wharf expansion. A number of the trainee rangers involved in the program over the past four years have had great opportunities and exposure in gaining training and work experience which has contributed to them gaining full time employment with other environmental organisations and businesses. The program has been a great stepping stone for the trainees and building the capacity of Larrakia people in marine ecosystem monitoring.



The Eastern Curlew aerial survey team.



Darwin Harbour Clean-up Day, Larrakia Rangers with NT Fisheries, Biosecurity team.



Rangers & Charles Darwin University conducting migratory bird surveys.



Seagrass monitoring at Casuarina Beach with the Marine Ecosystems Group.

Training with Territory NRM – GPS navigation and mapping

