



## Project 2.1: Marine turtles and dugongs of the Torres Strait

# Collaborative turtle research in Torres Strait

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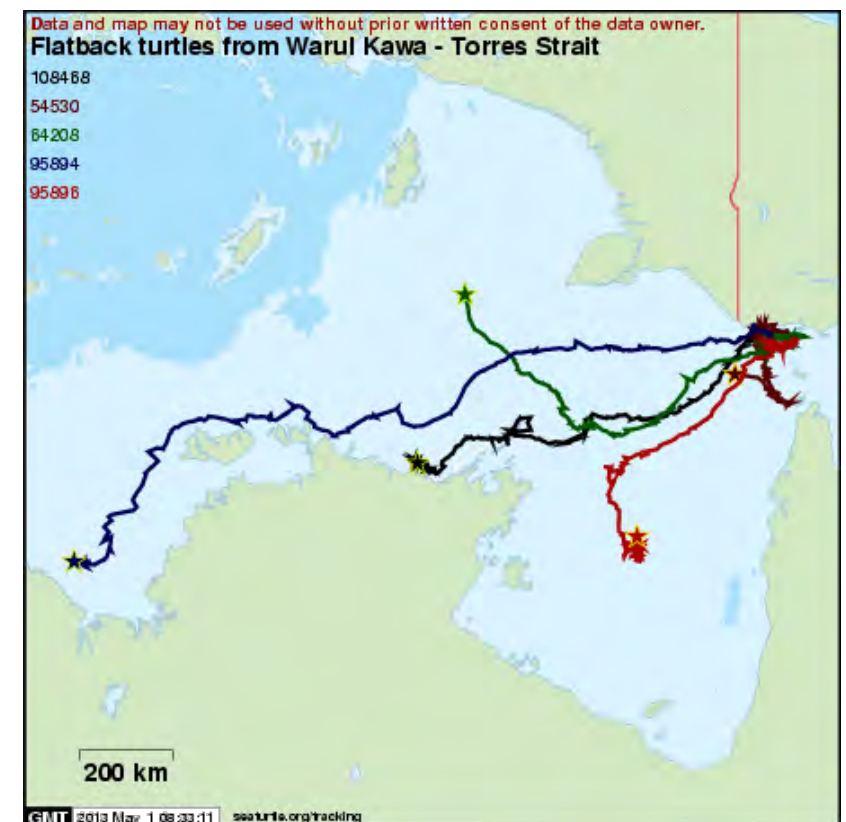
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**Fig. 1** Location of Warul Kawa and Traditional Owner groups

## Introduction

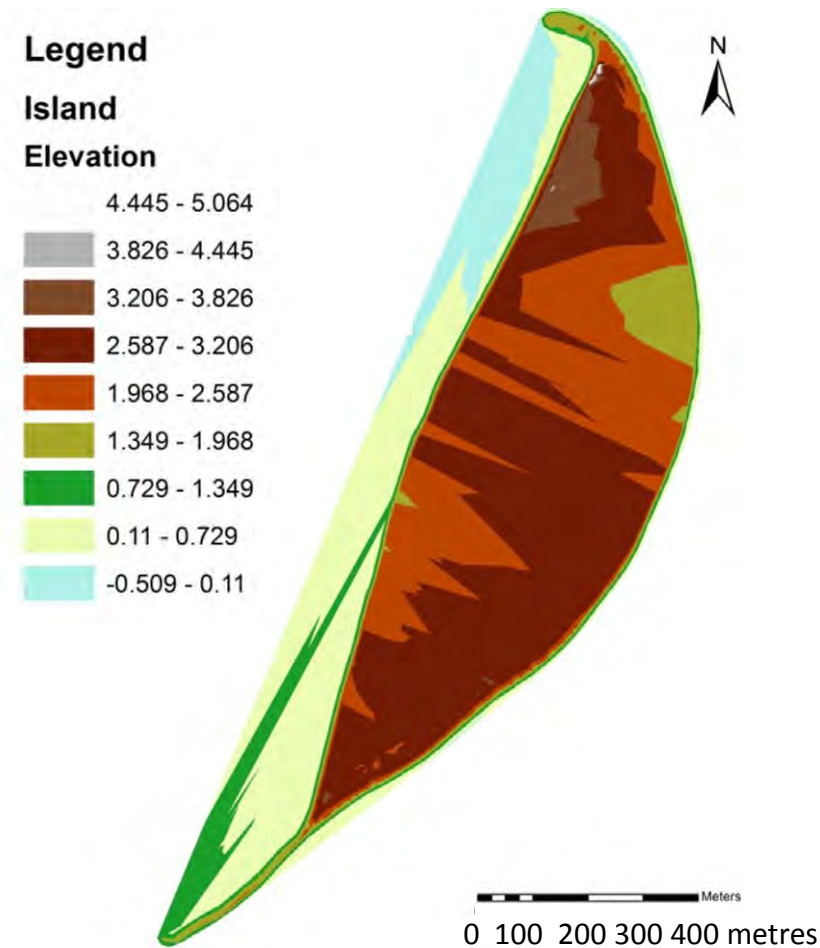
Warul Kawa (Deliverance Island) is an Indigenous Protected Area (IPA) within the Malu Kiai and Mabuiag dugong and turtle management areas. Flatback turtles (*Natator depressus*) are the predominant turtle to nest on the island and their eggs are an important resource for Torres Strait people. Flatback turtles at Warul Kawa are a part of the Gulf of Carpentaria and Torres Strait genetic stock which is the largest of four nesting populations in Australia.<sup>1</sup> This population of turtles are among the least understood in Australia, with the last research conducted in 1987 and only limited records available from before then.<sup>2</sup> The project aims to enhance the ability of Government and community to manage these threatened species, and also add value to the evolving Dugong and Turtle Management Plans and the Torres Strait Land and Sea Ranger Program.



**Fig. 3** Satellite tracks of Warul Kawa nesting flatback turtles (seaturtle.org)

## Project description

Three research trips have been completed (September & December 2012 and February 2013), with research efforts focusing on nesting flatback turtles. Several ranger capacity building supplementary activities have also been incorporated to maximise research effort and cost effectiveness of working in this remote location.



**Fig. 2** Warul Kawa Digital Elevation Model



**Photographs:** (Clockwise from top left). Juvenile green turtle being tagged (F. Loban); Rangers installing satellite tag on flatback turtle (S. Preston); flatback turtle being released (S. Preston); flatback turtle laying eggs below high tide mark with eggs to be relocated (A. Goetze)

## Satellite tracking

Five flatback turtles are currently being tracked since deployment in February 2013 (Fig. 3). Three turtles returned to Warul Kawa after 14 days to nest again, with one also returning to lay a third clutch 14 days later. Satellite tags are expected to transmit for between five and nine months depending on battery life. Their movements can be viewed online at [www.seaturtle.org](http://www.seaturtle.org).

## Project Achievements

- Confirmed late summer peak nesting time
- Marine debris survey and removal
- Digital Elevation Model produced, determination of seasonal change in beach morphology
- Capacity building of TSRA Rangers and Traditional Owners
- Enhancement of relationships and communication between stakeholders

## Ongoing research

- Installation of time lapse cameras for future monitoring of turtle tracks
- Satellite tracking of five flatback turtles
- Titanium flipper tagging of nesting flatbacks and foraging green turtles
- Sand temperature data logging
- Rat eradication program being developed



**Fig. 4** GPS tracks of seasonal change at Warul Kawa. Green: September 2012; Black: February 2013



Photographs (L-R): Traditional Owner capturing foraging green turtle for tagging (N. Waller); Trench used for hatchling survey (S. Preston); Differential GPS demonstration (F. Loban); Flatback hatchling (F. Loban); Marine debris collected during Tangaroa Blue survey (F. Loban); Differential GPS base station and radio antenna (S. Preston); Temporary time-lapse camera installation (S. Preston).

## Acknowledgements:

The role of the Traditional Owner groups is gratefully acknowledged as is the research assistance provided at Warul Kawa by Albert Auda and Mackie Marama from Boigu, Torrance Gizu from Mabuiag and Raymond Baira from Badu. This project would not be possible without the support of these Torres Strait communities. Research assistance has also been provided by Simon Conaty and Andrea Goetze of the TSRA LSMU land team. The rat trapping work and development of an eradication program has been conducted by Natalie Waller from University of Queensland. All research trips have been from aboard the vessel *San Miguel* and the efforts of Bob Wallenburg and his crew from Northern Blue Charters make research in this area very comfortable.

## References

- <sup>1</sup>Limpus, C.J. & Fien, L. (2009). A biological review of Australian marine turtles: Qld Government, Environmental Protection Agency.
- <sup>2</sup>Limpus, C.J., Zeller, D., Kwan, D. & MacFarlane, W. (1989). Sea-turtle rookeries in north-western Torres Strait. *Wildlife Research*, 16(5), 517-525.



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