FAQ: Cape Domett Flatback Turtle Rookery – Monitoring in 2013

Yoorrooyang Dawang Regional Parks

Department of Environment and Conservation

Department of Parks and Wildlife

BACKGROUND

- Flatback turtles (*Natator depressus*) live only on the continental shelf of Australia.
- Flatbacks are the least known of all seven sea turtles.
- Flatbacks have the largest eggs and hatchlings of all sea turtles.

Where are flatback rookeries in WA?

- Cape Domett is a 2 km long beach (or rookery) about 80 km north-north east of Wyndham.
- Cape Domett is the largest flatback rookery in the Kimberley.
- Other large flatback rookeries are also found on the Pilbarra and Kimberley coasts.

METHODS

- We conducted two weeks of monitoring in mid-August 2013.
- We rake across all tracks and count fresh tracks from each previous night.
- We search for nesting females at night. We mark individuals with microchips and flipper tags.
- We take measurements of the carapace (shell).


Raking across the turtle tracks


Raking across the turtle tracks

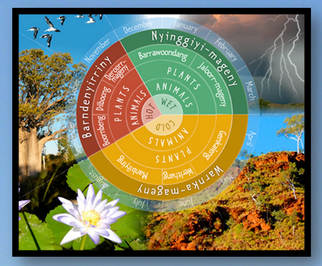

Checking for tags


Releasing a hatchling

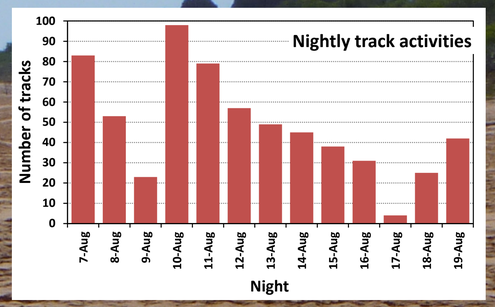

Recording data

The monitoring project was a collaboration of Miriuwung Gajerrong Traditional Owners, Balanggarra Rangers, and WA Dept of Parks and Wildlife. The project establishes a component of the Marine Turtle Project in the Western Australian Marine Science Institution (WAMSI).

INFLUENCES ON NEST COUNTS



- Indigenous Ecological Knowledge (IEK) records the beginning and duration of seasonal events. This guides the track monitoring to establish nesting trends across time.
- Nightly turtle counts were influenced by high tide and moon brightness.
- 14 nights of surveys allows coverage of a range of tides and moon phases. This survey counted 627 nests.



REPRODUCTION

- Cape Domett hosts several thousand flatback nests a year.
- Females crawl ashore to lay eggs on the upper beach.
- Nesting females usually emerge at the highest tide.
- 80% of female emergences result in nests.
- Females skip 2–3 years before returning to breed.
- Females lay 3–4 nests per season.
- Females mature around 20 years of age and are believed to continue nesting for a few decades..
- A nest is about 50 cm deep, and contains 50–70 eggs.


Female laying eggs

CLIMATE CHANGE

- The north Kimberley climate produces warmer sand temperatures than most parts of the Pilbarra.
- The east Kimberley nesting season is in the dry season instead of the summer/wet season like the west Kimberley.
- Eggs incubate for 48–66 days. The warmer the sand, the sooner a nest hatches, and the more female hatchlings are produced .
- UWA scientists use thermal data loggers and weather stations to ask whether climate change affects the ratio of male and female hatchlings into the future.

SUCCESS AND SURVIVAL

- Hatching success at Cape Domett is around 80 %.
- 1 of 1000 hatchlings may survive to the adult stage.

BODY SIZE

- Adults are 80–95 cm long (carapace length) and weigh up to 100 kg.
- Hatchlings are 45 mm and weigh 40 g.


Measuring a female


Releasing hatchlings

PREDATION

- Dingoes excavated about 1 nest a night.
- No tracks were observed from potential egg predators such as goannas, foxes, pigs, rats, or bandicoots.
- Night herons eat many hatchlings at night and birds of prey eat any stragglers that cross the beach in daylight.
- Saltwater crocodiles take hatchlings on the beach nightly and 1–2 females a week.


Egg predation by dingoes

MOVEMENTS

- Flatback turtles migrate between feeding grounds and nesting grounds.
- Flatbacks from the Pilbarra, the Kimberley, and the Northern Territory may share the same feeding grounds.
- A satellite tracking project on Cape Domett flatback migrations and movements is online at http://www.seaturtle.org/tracking/index.shtml?project_id=417

CONSERVATION ISSUES

- Many Kimberley turtles nest, feed or travel through existing or planned areas of industrial gas or petroleum operations.
- Turtles migrate into regions where they can be caught as by-catch (unintended targets) by prawn trawlers or ghost nets.
- We know little about the immature stages of flatback turtles.

FUTURE

- Combining IEK with scientific approaches will help to better understand and manage sea turtles in the Kimberley.
- This project addresses Healthy Country Targets of Indigenous Groups and Management Objectives of DPaW to increase our understanding of the potential threats posed to turtles by climate change.
- Turtle nesting in the Kimberley will be mapped through a joint research project by WAMSI and Indigenous Ranger groups.

Western Australia Marine Science Institution

The Western Australian Marine Sciences Institution (WAMSI) is a collective of scientific partners including WA Government, CSIRO, AIMS and universities. Its objectives are to collect scientific information to support management. A program of projects is currently being developed for the Kimberley.

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BALANGGARRA RANGERS

western australian marine science institution