Inter-nesting distribution of green *Chelonia mydas* and flatback turtles *Natator depressus* at the Lacepede Islands, Western Australia

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(Lutz and Musick 1997, p. 53)
Green Turtles (*Chelonia mydas*)

- Vulnerable (EPBC Act).
- Large population in WA.
- 47 satellite tags in WA.
- Telemetry studies conducted at Maret Islands, Barrow Island and Scott Reef.
- Studies indicate that green turtles generally remain within the inshore areas during the inter-nesting period.
Flatback Turtles (*Natator depressus*)

- Vulnerable (EPBC Act).
- Data Deficient (IUCN Red list).
- Large population in WA.
- 83 satellite tags in WA.
- Telemetry studies conducted at Maret Islands, Barrow Island, Onslow, Port Hedland and Broome.
- Studies indicate that flatback turtles can travel up to 70 km from the nesting beach between nesting events.
Research questions

• What is the extent of their inter-nesting distribution?

• What is the movement of turtles within these areas?

• Are the movements different for green and flatback species?
Methods

- Twenty-two transmitters (20 F4G-291A and 2 Mk10-AF) were deployed in early December 2009 and February 2010.

- Fifteen provided inter-nesting data (10 green and 5 flatback).

- F4G-291A - GPS acquisition every hour.
- Mk10-AF – GPS acquisition every 20 minutes.

- Location and time data were obtained from Argos Satellite System.
Methods

Data Filtering:
• Decoding data: Sirtrack Fastloc Admin Tool Version 1.1.5.8 and Data Analysis Program Version 2.0
• GPS locations ≥5 satellites (greatest error 140 m)

Data Analysis:
• ArcGIS to interpret the spatial distribution of transmissions
• EON Fusion to display individual tracks
• Density histogram – density of transmissions within distance categories
• Boxplot – examine the variation in distance from the deployment location
Conclusion

- GPS data can provide useful spatial information about turtles during the inter-nesting period.

- Flatback turtles have a broad inter-nesting distribution (up 50 km) compared to other Cheloniids.

- Green turtle prefer to stay within 10 km of the shore during the nesting season.

- Coastal and offshore developments need to consider the spatial extent of inter-nesting habitats, not just nesting activity on the beach.
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