

NERP Tropical Ecosystems Hub Project Factsheet

Maximising the benefits of mobile predators to GBR ecosystems: the importance of movement, habitat and environment

Project leader: Dr Michelle Heupel (AIMS)

Project summary

This project will determine the movement and habitat use of large predatory fishes such as sharks and coral trout in reef and coastal environments of the Great Barrier Reef. Individual fish are fitted with acoustic transmitters that are detected by an array of acoustic monitoring stations. These monitoring stations record the presence and movement of fish between the coast and the reef, and between reefs. Predator presence and movement will be integrated with habitat mapping and environmental monitoring data to identify factors that lead to changes in movement patterns and to define any preferred locations or conditions that can be targeted for conservation or management.

Why this research is needed

Results of this research will inform managers about residency patterns of predatory fish, their movements between and preferences for various habitat types, and how these are related to the zones of the Great Barrier Reef Marine Park. This information is critical for balancing the competing demands of fisheries and ecosystem sustainability.

Research-user focus

The project will support the conservation and management of mobile predators by federal and state government bodies including the Great Barrier Reef Marine Park Authority (GBRMPA), the Department of Sustainability, Environment, Water, Population and Communities, the Department of Agriculture, Fisheries and Forestry, and the Queensland Seafood Industry Association.

Project Partners:



Red throat emperor fitted with an acoustic transmitter being released.



A tagged blacktip reef shark fitted with an acoustic transmitter.

Photos: Michelle Heupel

Outcomes

- Greater understanding of habitat use and the extent of movement of mobile predator species in coastal and reef ecosystems.
- Greater understanding of the factors that lead to changes in the residency and movement of mobile predators, such as habitat, developmental stage and environmental conditions.
- A more comprehensive understanding of the scale of daily and seasonal movements of marine predators in relation to marine park zoning and the efficacy of zones in providing protection to mobile predators.

Find this project at www.nerptropical.edu.au

Theme 2: Understanding Ecosystem Function and Cumulative Pressures

Program 6: Movements and habitat use by marine apex predators

Project: 6.1

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