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Investigation of habitat selection and resource use by coral trout (*Plectropomus spp.*) in reef systems using telemetry and dietary indicators

Jordan started his biological studies at the University of Guelph in Canada with Honours in Marine and Freshwater Biology. His thesis project focused on metabolic responses to low oxygen levels in hypoxia-tolerant fishes. After graduation Jordan conducted fish abundance and distribution surveys with the Sarasota Dolphin Research Program, Mote Marine Laboratory, Florida. After a 3 year hiatus of work and travel, Jordan returned to study, completing a masters at the University of Manitoba focusing on foraging of top predators (whales, seals and seabirds) in the Canadian Arctic.

Commercial and recreational fishing of reef-associated fishes generates millions of dollars annually for the Australian economy. Currently, there is concern that increasing fishing pressure on coral trout (*Plectropomus leopardus*, *P. laevis*, and *P. maculatus*) could negatively impact reef ecosystems.

As top consumers in the food web, coral trout play an important role in structuring energetic pathways and maintaining the overall health of the reef system. Consequently, there is growing need to understand the factors that influence habitat preference and resource utilization in order to effectively manage populations.

The purpose of this study is to determine the biological and physical factors affecting resource and habitat selection of three iconic reef fish species to improve conservation and fishery management strategies. The main objectives are to:

1. Compare diet of sympatric coral trout species
2. Determine the importance of reef habitats to coral trout species
3. Explore additional factors affecting movement and habitat selection
4. Evaluate habitat and resource differences between reefs open and closed to fishing.

Jordan will be using two main methodological approaches:

1. Acoustic telemetry to track small-scale movements of coral trout throughout water column at several reefs.
2. Stomach content, stable isotope, and fatty acid signature analyses to provide a spatial and temporal indication of diet.

Jordan's goal is to provide important information to help with management decisions such as fisheries regulations by improving information on spatial and temporal habitat use.

Jordan has been fortunate enough to make several trips out to the reef, gaining valuable experience and knowledge working with coral trout. As an early PhD student, gaining preliminary observational knowledge of the behaviours of a study species is beneficial to focus future questions and gather meaningful data.

