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Habitat and dietary selection of nearshore sharks in Northern Australia

Samantha is originally from Nova Scotia, Canada. She earned a BSc (hons) in Biology in 2010 from Acadia University with research focused on the distribution and effect of ectoparasites on Atlantic sturgeon (*Acipenser oxyrinchus*), a historically important commercial species found off the east coast of Canada. After her graduation, Sam volunteered at the Bimini Biological Research Station in Bahamas, where she was able to work closely with sharks, developing her particular interest in the stabilizing effect top predators have on marine ecosystems. Sam's broader research interests include: trophic interactions, food web dynamics, animal behaviour, and movement and habitat use.

Sharks are important top and meso-level predators that can control the diversity and abundance of species further down the food chain. Quantifying shark habitat use and dietary selection is essential in understanding their relationship with the environment and other marine species; resource selection data can help predict how sharks will respond to environmental fluctuations. Therefore having a clear understanding of how sharks use the environment around them can not only help managers better protect shark populations themselves, but also the habitats where they are found.

Sam's project aims to evaluate how nearshore shark species use coastal habitats and define species dietary breadth within an ecosystem. This has been achieved through tracking individuals from the species *Carcharhinus tilstoni*, *C. fitzroyensis*, and *Rhizoprionodon taylori* using an acoustic receiver array in marine protected areas in Cleveland Bay, North Queensland. Stable isotope analysis of blood, plasma, and muscle samples from separate specimens was used to quantify dietary breadth and trophic position in the community. The data will determine seasonal and temporal patterns of habitat use and diet and isolate any relationships between these two factors.

Sam's most exciting moment so far was the first time she helped to catch and tag a 3 meter tiger shark! It put up quite a fight!

