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The spatial ecology of Australian blacktip shark (*Carcharhinus tilstoni*) within a nursery area and the effects of extreme weather

Vinay started his undergraduate studies in New Zealand before moving to Townsville where he completed his BSc in Marine Biology. An honours support grant from AIMS@JCU, enabled Vinay to investigate the spatial ecology of the blacktip shark within Cleveland Bay. During his fieldwork, Tropical Cyclone Yasi made landfall in close proximity to his study area. This gave him a unique opportunity to study the effects of large scale weather events in the movement and space use of sharks within coastal bays.

Large scale storm events are very unpredictable, and the effects of these disturbance events on coastal animals are very difficult to study. This unique opportunity allowed for the examination of coastal sharks movements before, during and after tropical cyclone Yasi.

The main focus of Vinay's project was the ecology of Juvenile Australian blacktip reef sharks (*Carcharhinus tilstoni*), however the study was broadened to include the effects of extreme weather on the movements of a number of coastal sharks found in North Queensland (Spottail sharks, *C. sorrah*; Pigeye sharks, *C. amboinensis* and blacktip reef sharks, *C. melanopterus*). Passive acoustic telemetry was used to track the movements and explore the space use within Cleveland Bay.

Vinay's research highlighted the variation in responses to the onset of Cyclone Yasi. All but one species monitored displayed flight responses and left the bay prior to the landfall of the cyclone. However, individuals of the blacktip reef shark (*Carcharhinus melanopterus*) did not display this flight response. This showed that some species may have a high tolerance to degrading conditions prior to large scale storm events in coastal habitats.

Publications

Udyawer, V. et al., 2013. First record of sea snake (*Hydrophis elegans*, Hydrophiinae) entrapped in marine debris. *Marine pollution bulletin*, 73(1), pp.336–8. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/23809333>

Udyawer, V. et al., 2013. Variable response of coastal sharks to severe tropical storms: environmental cues and changes in space use. *Marine Ecology Progress Series*, 480, pp.171–183. Available at: <http://www.int-res.com/abstracts/meps/v480/p171-183/>