Horror, Homing, and Habituation: Effects of Translocation Between Aggregations of Queen Conch in the FKNMS

Andrew Kough[1], *Benjamin Gutzler*[2]
[1]John G. Shedd Aquarium, Chicago, IL USA
[2]Wells National Estuarine Research Reserve, Wells, ME USA

Overharvest has reduced queen conch (*Aliger gigas*) populations. However, the Florida Keys present a case study for repopulation: conch were nearly eliminated, resulting in a fishery closure for recovery and enabling the evaluation of conservation actions. One action to enhance reproduction is the translocation of non-breeding conch in poor habitat to breeding aggregations. Translocation is currently the remediation action of choice for conch in harm's way. However, fine-scale shifts in behavior and the long-term fate of sexually mature animals when moved between areas of optimal habitat have not been quantified. To fill this knowledge gap, we conducted a multiscale translocation between breeding populations separated by 2, 5 and 17 km in the Florida Keys National Marine Sanctuary. A shorter-distance within-aggregation translocation of 1 km was conducted near Port Everglades. The movement and behavior of 38 adult queen conch were tracked with active acoustic tags and accelerometers for up to a year between June 2024 and 2025. Initially, translocated animals displayed significantly greater activity and displacement than controls. Over short distances, apparent homing behavior occurred. Through time, translocated conch suffered greater mortality than control animals, although displacement and death rates decreased as surviving animals joined new aggregations and began to breed within them. Perhaps differences in camouflage and unfamiliarity with the landscape were initially barriers for translocated animals, and acclimation could help.