

Habitat-Specific Survival of Juvenile Queen Conch: Are All Seagrass Meadows Alike?

Progress Report

ROMUALD N. LIPCIUS and LIVINGSTON S. MARSHALL, JR.

Caribbean Marine Research Center

Lee Stocking Island

Exuma Cays, Bahamas

and

The College of William and Mary

Virginia Institute of Marine Science

Gloucester Point, Virginia 23062 USA

Juvenile queen conch (*Strombus gigas*) are patchily distributed in Caribbean seagrass beds; often conch are dense in one seagrass bed, but absent from a nearby, comparable seagrass bed. Such a pattern may be due to differences in recruitment, habitat choice, or survival. We postulated that juvenile queen conch do not survive equally in all seagrass beds, due possibly to different predator guilds, alternate prey, or other predation-related causes. We tested this hypothesis by tethering juvenile queen conch (total shell length ranged from 70 – 90 mm) during summer and fall, 1989 in various seagrass beds near Lee Stocking Island, Exuma Cays, Bahamas, and subsequently recording their weekly mortality rates due to predation. There were six seagrass beds: two contained low densities of resident conch, two contained high densities of resident conch, and two were not inhabited by conch. Predation-induced mortality rates were significantly lower in those seagrass beds with resident queen conch, whether at high or low densities. These findings indicate that the distribution and abundance patterns of juvenile queen conch in different seagrass beds are partly regulated by predation, and not merely due to recruitment patterns or habitat choice. In addition, there may be a positive feedback mechanism between the presence of juvenile queen conch and survival of recruits in seagrass beds.