



Ecological effects of harmful algal blooms on the wildlife communities associated with submerged aquatic vegetation

Introduction:

Sea grass habitats are highly productive and ecologically rich areas for estuarine species. The Florida Fish and Wildlife Conservation Commission lists submerged aquatic vegetation (i.e., sea grass) as a priority habitat with a “very high” threat status and a “poor and declining” condition. Among the highest category of stress to sea grasses are harmful algal blooms (HABs), or red tide. HABs are a source of ecological disturbance thought to alter water quality, species composition and patterns of primary productivity in sea grass. HABs in this region are

primarily caused by *Karenia brevis* blooms, which produce a potent toxin.

Objectives:

To understand the extent to which HABs affect the local abundance and habitat use of individual species and composition of fish and avian communities utilizing sea grass habitats in Sarasota Bay.

Approach:

Our study design includes seasonal surveying of:

1. Fish (purse seining)
2. Birds (visual surveys)
3. *K. brevis* cell counts
4. Water quality (dissolved oxygen, salinity, temperature)

Benefits:

Although much is known about how red tide toxins affect individual animals,

little is known about the ecological effects of red tide on entire populations or communities of animals. This project will quantify the level of threat that red tide poses to sea grass communities, which should help FWC resource managers protect these species. Data from this study can be used to help guide future strategies for managing animal communities in an environment frequently affected by red tide.

Location:

Passage Key Inlet to Phillippi Creek, including Anna Maria Sound and Sarasota, Palma Sola, and Roberts Bays (Manatee & Sarasota counties, Florida)

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