A Comparison of Consumer Dynamics and the Influence of Hydrology Across Multiple Everglades Habitats

JS Rehage¹, SE Liston², JJ Lorenz³, WF Loftus⁴, and JC Trexler⁵

¹Nova Southeastern University, Oceanographic Center, 8000 N. Ocean Drive, Dania, FL; rehage@nova.edu
²Audubon of Florida, Corkscrew Swamp Sanctuary, 375 Sanctuary Road West, Naples, FL; sliston@audubon.org
³Audubon of Florida, Tavernier Science Center, 115 Indian Mound Trail, Tavernier, FL; jlorenz@audubon.org
⁴Florida International University, Department of Biological Sciences, Miami, FL; trexlerj@fiu.edu
⁵US Geological Survey, Florida Integrated Science Center, Everglades National Park Field Station, Homestead, FL; bill_loftus@usgs.gov

WADING BIRDS

OVERVIEW

- Cross-habitat comparisons offer a landscape-level understanding of the responses by consumers to seasonal variation in hydrology and may provide insight into potential responses to long-term variation in hydrological conditions resulting from restoration.

- Aquatic animals in seasonal starvation, stress-related disease, hypoxia, predation, and in the case of Big Cypress Forested Wetlands Greater Everglades Graminoid Wetlands Freshwater Graminoid Marshes

- Electrofishing

Wet & Dry Prey

Which habitats in the ecosystem provide protection from these conditions?

How do those habitats function as refuges?

Fish density

Eastern mosquitofish

Sailfin Molly

Topminnow (5.0%)

Golden shiner

Lake chubsucker

Tadpole madtom

Yellow bullhead

Other

Other

Importance of dry-season refuges

Densities of common aquatic fauna (crayfish, mosquito fish, and fishes) are shown for three wetland types in forested and grassed wetlands. In the 2003 wet season, average crayfish density was relatively high (442/m²) in grassed wetlands (approximately 442/m²), and fish density was relatively low compared to grassed wetlands. For eastern mosquitofish, this density is likely 39% of that measured in grassed wetlands, because of the marked concentrations of fish in dry season refuges. We continue to sample and compare these two communities.

Habitat linkages

Early in the dry season, comparisons of mangrove flats and creeks showed that as prey density decreased on shallow flats, fish numbers increased in mangrove creeks. Upon resurfacing, densities of small fishes in freshwater marshes were significantly greater in 2005-2006, suggesting better recovery from the last severe dry-down.