

**LILA Wildlife
Ecosystem Restoration Task Force Abstract
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A key function of LILA is to evaluate wildlife responses to hydrologic conditions with the aim of fine tuning the hydrologic regimes managed by the CORPS and proposed by CERP. We currently focus on two broad categories of wildlife research: 1) Wading bird prey availability and 2) Non-native fishes.



1. Wading bird prey availability

The leading explanation for the decrease in wading bird populations in the Everglades is that aquatic prey availability (a function of both prey density and prey vulnerability) has declined as a result of altered hydrologic patterns, but little is known of the specific conditions that produce patches of highly available prey. Prey availability in LILA is examined through a series of experiments on prey movement patterns and wading bird foraging in response to hydrology. The prey movement studies examined how crayfish disperse in response to water level changes and hence how and when they become available to birds. The wading bird experiments examined how two components of prey availability (water depth and vegetation density) influence foraging habitat selection and success. A current experiment is examining how hydrologic conditions influence crayfish population dynamics.

2. Non-native fishes

Many species of non-native fishes have established in south Florida and pose a potential threat to Everglades ecosystem functioning and restoration. Since many species are tropical in origin, their physiological tolerance to water temperature may be a key factor facilitating establishment and distribution. The cold tolerance of a widely distributed exotic species, the Mayan cichlid, is being examined by caging individuals in a variety of LILA habitats and testing the survival response.



Mayan cichlid

RESULTS:

- 1) Temperatures were lowest in the shallow marsh habitat, where no fish survived,
- 2) Temperatures remained warmest in canal and solution-hole habitats,
- 3) Water deeper than about 1 to 1.5 m provided thermal refuges for tropical non-native fishes.

Future studies are planned in LILA to examine the effects of non-native fishes on native aquatic communities.