

Fish of NATL

Introduction

The purpose of this project was to survey, identify, and record the various species of fish present in the water bodies of the University of Florida's Natural Areas Teaching Laboratory (NATL). This information was then to be made accessible to the public through the NATL website's Fishes page, which would be updated with the new information gathered from the project. Fish specimens were collected using dip-nets, a seine net, or funnel traps and then either released or preserved for identification and storage in the Florida Museum of Natural History's Ichthyology Collection for future reference. This project was funded by the 2015 NATL Minigrant program; the research team consisted of Gabriel Somarriba, an undergraduate in the College of Agricultural and Life Sciences, and his faculty sponsor Dr. Larry Page, Principal Investigator of the FLMNH's Ichthyology Department. Zachary Randall, also of the FLMNH Ichthyology Department, supplied photography equipment, know-how, and images. Dr. Page's staff all contributed to this project with knowledge and supplies. In addition to fish, this project also collected and identified crayfish species in NATL upon the request of the NATL Administrative board. Crayfish specimens were identified by Jesse Breinholt of the FLMNH Kawahara Lab.

Materials and Methods

A total of three water bodies were sampled during the survey: NATL-West's SEEP pond, the sinkhole in the southern portion of NATL-West, and NATL-East's marsh. The surveying period lasted from January 2015 to May 2015, during which time surveys were conducted the second weekend, Friday through Saturday, of every month. The surveys consisted of daily

sampling with a dip-net in addition to two rounds of setting funnel traps overnight and then checking and removing them the next day. On one occasion a two person seine net was used in both NATL-East's Marsh and the SEEP Pond; otherwise, each body of water was sampled in the same manner. Whenever fish were collected with either of these methods, they were either released or kept as voucher specimens and preserved in formalin for later identification. Upon preservation, the date, location, and collector's name were recorded and each specimen received a collection number. Fish specimens were identified by the FLMNH Ichthyology Department staff and then deposited in the collections for future reference. On one collection trip, photographs were taken of each species collected. The fish were photographed using an adjustable photography tank and then preserved for posterity. Crayfish collected were either released or preserved in the same manner as fish, then identified by Jesse Breinholt of the FLMNH Kawahara Lab. Identified specimens were deposited in the FLMNH Invertebrate Collections.

Results

Table 1. NATL Fishes Inventory, 2015.

Collection Date	Species	Habitat
1/10/2015	<i>Notemigonus crysoleucas</i>	NATL-West SEEP
1/10/2015	<i>Gambusia holbrooki</i>	NATL-East Marsh, Sinkhole
1/10/2015	<i>Heterandria formosa</i>	NATL-East Marsh, Sinkhole
2/15/2015	<i>Pimephales promelas</i>	NATL-West SEEP
3/14/2015	<i>Poecilia latipinna</i>	NATL-East Marsh, Sinkhole
4/9/2015	<i>Xiphophorus variatus</i>	NATL-East Marsh

Table 2. NATL Crayfish Inventory, 2015.

Collection Date	Species	Habitat
2/15/2015	<i>Procambarus fallax</i> <i>peninsulatus</i>	NATL-East Marsh, NATL- West SEEP

Discussion

NATL is home to only three sizeable bodies of water, only two of which are submerged year-round. In addition, only one of the two permanent water bodies, the NATL-East Marsh, is natural; the entire SEEP waterway is manmade. Because of this, and the fact that NATL is located far from any other large and natural water bodies from which fish could have flooded in

from, the diversity of fishes was likely to be limited. However, the results of this survey show the presence of at least six species of fish, two of which are non-native. The native species found in the NATL-East marsh (*H. formosa*, *P. latipinna*, and *G. holbrooki*) have all likely been living and breeding there for many years before the creation of NATL, as the marsh has been present on the land since at least 1937 according to the aerial photographs on the NATL website. All three are very small and prolific livebearers which are common throughout Florida. The one non-native species in the marsh, *X. variatus*, is a popular aquarium fish and the population present in the marsh is likely descended from escaped or discarded pets. NATL's SEEP is a very interesting case, however, as it is a man-made body of water that was meant to function primarily as a water treatment, storage, and discharge area. It was not intentionally stocked with fish and none of the fish species present in the East Marsh are found there and vice versa; therefore the flooding that occasionally occurs between the two areas could not be the cause of SEEP's fish population. Of the two species that are found there, *P. pimephales* and *N. crysoleucas*, only *N. crysoleucas* is native. There seems to be no obvious natural cause for their presence in NATL; however, as both species are very commonly used as live bait by fishermen in Florida, the most likely explanation is that a disappointed fisherman who came to SEEP dumped their bait into the water when they realized there were no fish to be caught in the pond. This would better explain the presence of the non-native *P. promelas*. The sinkhole only floods seasonally and is fed by runoff from the East Marsh, therefore the fish species found there are almost identical (*X. variatus* was not recorded in the sinkhole) to those in the marsh as fish are swept downstream by the current. The one crayfish species found, *P. fallax peninsulatus*, was found in both the East Marsh and SEEP. This species is common throughout the state of Florida and likely had an original breeding

population in the East Marsh. Crayfish are capable of migrating overland and likely established themselves in SEEP in this manner.