

2012 NATL Minigrant Program Application

Designated leader of a student group:

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Sponsor:

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Title of Project: Inventory of the Herpetofauna at the University of Florida's NATL

Project Summary: Under the direction of my faculty sponsor, I plan to conduct a species inventory of the herpetofauna present in the NATL at UF. Traps and other sampling methods will be used in the upland pine, hammock, old-field, and marsh areas. These methods include: drift fences, PVC pipes, aquatic traps, time constrained searches, and aural surveys. At the end of the project, an EDIS fact sheet will be compiled describing the herpetofaunal species present in NATL. For use on the NATL website, my sponsor will provide digital images of the species we encounter in addition to other species known to already occur on the site but which we don't detect. The fact sheet, which will be available via the IFAS EDIS system, and images will enhance the teaching value of NATL for current and future visitors. I am conducting this project for honors credit in Dr. Johnson's Wildlife of Florida class.

Start Date: February 20th, 2012

Completion Date: May 30th, 2012

Description of Project: The goal of this project is to use numerous standard sampling methods to systematically inventory the amphibians and reptiles of NATL in order to document the species present on the property. Our data will build upon existing species information for the site.

Project Objectives and Procedures

The first objective will be to install and operate drift fence arrays to sample cryptic herpetofauna. One drift fence array will be installed in each of the three following habitats and locations: upland pine (academic use area, northern portion), old-field (southeast corner of D-plot), and hammock (northern portion of NATL east). I will work with NATL assistants to determine the specific location of each array so as not to disturb existing projects. Each array will consist of 3 'arms' of steel flashing buried ~20 cm in the ground installed in a 'Y' pattern. Each arm will be ~4 m long. Single-ended funnel traps (made from wire window screen) will be deployed at the ends of each array arm during trapping periods. When deployed, traps will be shaded with a board or cloth. Traps will be removed during non-trapping periods. PVC-pipe refuges (1 m sections of 1 ¼ inch schedule 20 pipe) will also be installed at the ends of each array arm to sample treefrogs.

The arrays in the upland pine and old-field habitats will be removed at the end of the project. The array in the hammock will be left in place to be used as a demonstration for courses that use NATL (e.g., Natural Resource Sampling, FNR3410). Pitfall traps consisting of 5-gallon buckets will be installed at this array only. Pitfall traps will be filled with soil when not in use so as to not inadvertently trap animals. An informational placard will be installed at this array to educate NATL users about its purpose.

Drift fence arrays will be installed sometime in late February to early March. There will be three multi-day trapping periods during which funnel traps will be deployed and checked. Funnel traps will be deployed on the first day of each trapping period and checked in the morning on days two and three of the trapping periods. The funnel traps will be removed after they are checked on the third day. The trapping schedule has yet to be determined, but there will be one trapping session in mid-March, a second in early April, a third in late April, and a final session in mid-May.

The second objective is to deploy 20 aquatic funnel traps within the SEEP and central marsh areas to sample aquatic herpetofauna. These will be standard aquatic funnel traps used by herpetologists (e.g., minnow traps, siren traps). Like the funnel traps at the drift fence arrays, aquatic traps will be deployed during four, 3-day sampling periods. Aquatic traps will be deployed and checked on the same days that the drift fence array traps are operated. Traps will be removed during non-sampling periods. Chest waders will be worn to set and check aquatic traps.

The last objective will be to use time-constrained searches and aural surveys in an attempt to detect species not encountered with the traps. Four additional time-constrained searches will be employed in the upland pine area, the old-field habitat, and the hammock. These searches will consist of several people slowly walking through the various habitats visually looking for herpetofauna. During these searches natural cover objects (e.g., logs) will be overturned by hand, but they will be rolled back into their original location to minimize disturbance. Time-constrained searches will be conducted during day two of the sampling periods described above. Effort expended during each search will depend on the number of volunteers available on a particular day. I will recruit volunteers from the Wildlife of Florida class and via the Student Chapter of the Wildlife Society.

Finally, two aural surveys of the marsh and SEEP areas will be performed in attempt to document calling frogs. These surveys will be conducted during the first two hours following

dusk. One aural survey will be conducted in March, and the other in late April or early May. These surveys will be carried out by my sponsor and I and several volunteers.

Animals captured will be identified to species, photographed, and released at the point of capture. Venomous snakes will not be handled. Traps and waders will be cleaned and sanitized with a bleach solution (rinsed with fresh water after bleaching) before and between uses at NATL. Dr. Johnson, has a UF animal care and use permit for this class that covers the proposed sampling methods.

Potential Lasting Impacts

After this project is completed, all project materials (arrays and PVC pipes) will be removed from NATL, with the exception of one drift fence array, which will be disabled, but left in the academic sampling area for potential future use. During time constraint searches, if any logs are rolled they will be immediately replaced. My sponsor, I, and any volunteers will be extremely careful to cause only limited disruption to the NATL habitats. Overall, long-term negative effects on NATL should be negligible. Positive lasting impacts include publication of an EDIS fact sheet about the herpetofauna of NATL, use of project images on the NATL website, and maintenance of a drift fence array as a teaching tool.

Project Deliverables

Upon completion of the project the following will be provided to the NAAC: a summary report outlining trapping/sampling effort and animal captures/observations during my project, a CD of digital images of NATL herpetofauna, and a fact sheet published and housed electronically in the IFAS EDIS system. Publication of the EDIS document will take time, and therefore final delivery of this document will likely not occur until sometime in August. Dr. Johnson will ensure this is delivered to the NAAC. Dr. Johnson will be responsible for maintaining the permanent trap array in the hammock of NATL-east and submitting annual reports of its use (e.g., student numbers) in courses and the species captured when in use.

Project Benefits

Although this project will not likely provide a complete inventory of the herpetofauna species present in NATL, it should significantly enhance existing information and identify knowledge gaps and targets for future projects. The NATL website will be enhanced by including the images this project will provide and the EDIS fact sheet will enable future NATL visitors to become more knowledgeable and informed about the amphibians and reptiles that occur on NATL, as well as the importance of maintaining their habitats. Finally, I will be conducting this project to earn honors credit in my sponsor's class and will gain valuable experience organizing and conducting fieldwork.

Communication with NAAC Administration:

Monthly updates on the project will be sent to the NAAC Chair via email. These updates will include both written accounts and photographs of the project's progress. Updates will be submitted on February 29, March 30, April 30, and May 31. I will post information and images about my project on the NATL Facebook and Twitter sites.