How to apply for a $500 minigrant to enhance the information infrastructure of the Natural Area Teaching Laboratory

This application information may be downloaded as an MS Word file at http://natl.ifas.ufl.edu/minigrants.htm.

Applications must be submitted as an MS Word or PDF file attached to an email message to natl@ufl.edu, with a signed paper copy sent by campus mail to Jack Putz, NAAC Chair, PO Box 118526, Campus.

To be considered, submissions must include the **bold-faced items** indicated below, and consist of *no more* than three pages.

Proposer or designated leader of group of proposers (must be a UF student)

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Experience or training related to proposed project:

2008-present:	Collections Assistant, Herpetology Department, Florida Museum of Natural History, Gainesville FL.
2008-present:	Necropsies of the Everglades Pythons (*Python molurus*) determining reproductive fitness and dietary choice, Florida Museum of Natural History, Gainesville FL.
2009	TA position, Wildlife Techniques (WIS 4945C), Herpetile Field Techniques, Department of Wildlife Ecology and Conservation, Ordway-Swisher Biological Station, Melrose FL.
2009	Student, Wildlife Techniques (WIS 4945C), Department of Wildlife Ecology and Conservation, Ordway-Swisher Biological Station, Melrose FL.

Sponsor (must be a UF faculty member)

Name Dr. Kenneth L. Krysko
Department Wildlife Ecology and Conservation
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Title of project

Removal and diet of the nonindigenous Cuban Treefrog (*Osteopilus septentrionalis*): with potential management practices for conservation of native treefrogs

Project summary

The Cuban Treefrog (*Osteopilus septentrionalis*) was first documented in Florida on Key West, Monroe County, in 1931 (Barbour 1931). It has spread northward throughout Florida, and was first found in Alachua County in 2002 (Krysko et al. 2005). The Cuban Treefrog is infamous for competing with and consuming Florida's smaller native treefrogs, including the squirrel (*Hyla squirella*) and green (*H. cinerea*) treefrogs (Austin 1973). Once the Cuban Treefrog is found in a certain area, it is commonly observed that the native treefrogs decline rapidly or completely disappear. In December 2006, the first Cuban Treefrog voucher specimen (UF 151327) was removed from the Natural Areas Teaching Lab (NATL) on the University of Florida campus, and subsequently deposited into the Florida Museum of Natural History (FLMNH). Since then, eight additional voucher specimens (UF 151328-35) have been removed, and recent field surveys of the pre-existing PVC pipes on site suggest that Cuban Treefrogs might now be the dominant treefrog species in the NATL. Herein, I propose to remove all captured Cuban Treefrogs found in the NATL, attempt to quantify the effects of predation on treefrog species, and determine if removal is a satisfactory way to manage the current Cuban Treefrog population.

Starting date

Anticipated start date 1 May 2010.

Completion date

Field portion of the project will be completed by 31 July 2010. Stomach contents will be analyzed before 1 October 2010. Final report will be provided by 15 October 2010.

Description of project

Florida currently has more introduced amphibian and reptile species than any other state (Meshaka et al 2004). Introduced species are second only to anthropogenic habitat alteration in their negative effects on native species, habitats, and entire ecosystems, mainly through habitat destruction, competition, predation, and diseases (Parker et al. 1999). In order to obtain a more effective management strategy, diet and competition/predation studies are required. Therefore, I plan to quantify these variables within the population of the nonindigenous Cuban Treefrogs (*Osteopilus septentrionalis*) in Natural Areas Teaching Lab (NATL).

I plan to purchase and install 100 PVC pipes (1-inch diameter) on site. Pipes will be evenly distributed amongst the four main habitat types, including hammock, upland pine, old-field succession, and seepage. All PVC pipes will be numbered, checked two times each week for three months, at which time species and abundance of treefrogs will be recorded. Native treefrogs will not be harmed and released at their capture site; recent studies suggest that individual native treefrogs will remain inside or near the same PVC pipe for more than a year while pipes are checked continuously in long-term studies (Greenberg and Tanner 2006). Cuban Treefrogs will be removed and euthanized humanly, as Florida Statute 372.265 specifically prohibits the release of non-native wildlife without a permit from the Florida Fish and Wildlife Conservation Commission (FWC). An Animal Research Committee (ARC) permit is pending. Cuban Treefrogs will be brought to the FLMNH where they will be dissected and diet contents examined for presence of treefrog species.

With respect to impacts of the proposed study, I address three specific research questions and hypotheses.

1) Will stomach content analysis of removed Cuban Treefrogs support prior hypotheses of cannibalism among conspecifics and consumption of native treefrogs?

2) Will capture and removal of Cuban Treefrogs result in the 1) decrease of this nonindigenous species over the sampling period, and 2) increase of native treefrogs over time?

3) Will removal of Cuban Treefrogs be an effective management practice? I hypothesize that if Cuban Treefrog numbers decline or the species can be eliminated, these data could suggest that removal is an effective way to manage Cuban Treefrog populations in the NATL and other areas around the state of Florida.

Upon completion of this study, data (following a selected scientific journal format) will be delivered in digital format to NAAC, along with a pamphlet designed for the public that distinguishes all treefrogs found in the NATL. Additionally, I would like to develop a lab exercise and present this study to UF students, as well as consider presenting a poster at the subsequent Florida Academy of Sciences annual meeting.

Literature Cited:

Austin, D. F. 1973. Range expansion of the Cuban treefrog in Florida. Florida Naturalist 46:28.

Barbour, T. 1931. Another introduced frog in North America. Copeia 1931:140.

Greenberg, C.H., and G.W. Tanner. 2006. Amphibians using isolated ephemeral ponds in Florida longleaf pine uplands: population and metapopulation dynamics. Final report. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida, USA.

Krysko, K.L., K.M. Enge, J.H. Townsend, E.M. Langan, S.A. Johnson, and T.S. Campbell. 2005. New county records of amphibians and reptiles from Florida. Herpetological Review 36:85–87.

Meshaka, W.E., Jr., Butterfield, B.P., Hauge, J.B. 2004. The Exotic Amphibians and Reptiles of Florida. Malabar, Florida, Krieger Publishing Company.

Parker, I.M., D. Simberloff, W.M. Lonsdale, K. Goodell, M. Wonham, P.M. Kareiva, M.H. Williamson, B.V. Holle, P.B. Moyle, J.E. Byers, and L. Goldwasser. 1999. Impact: Toward a framework for understanding the ecological effects of invaders. Biological Invasions 1:3–19.

Provision for periodic communication with NAAC administration

Monthly meetings could be arranged on the 15th of each month, or at the convenience of NAAC administration.

Signatures

Only the paper copy needs be signed.

Proposer___  Date__9 September 2009___

Sponsor____  _____ Date__9 September 2009___