

NATL infrastructure improvement through construction of a permanent light trap

Entomology and Nematology Student Organization
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Introduction

During the fall and spring semesters the Principles of Entomology (ENY 3005/5006) course sections utilize the Natural Area Teaching Laboratory (NATL) for night collecting of insects. Additionally, students in other courses such as Insect Classification (ENY 4161/6166), Immature Insects (ENY 5611), and Medical and Veterinary Entomology (ENY 4600L) are required to develop insect collections. The NATL is a convenient and fruitful insect collecting locality for these students as well. The Natural Area Advisory Committee (NAAC) is also interested in biodiversity surveying and open reporting of data on the fauna and flora of the NATL.

The objectives of having a permanent light trap in the NATL are to 1) facilitate simple and quick insect collecting learning activities with an emphasis on undergraduate student use, 2) encourage the use of NATL for research insect collecting, and 3) improve infrastructure of NATL for future biodiversity surveys of nocturnal insect groups. Minigrant funding from the NAAC was used to establish a permanent, durable light trapping frame in the NATL SEEP area.

Materials and Methods

Our proposed structure included a six foot high frame (two posts each) with threaded eye-hooks (Figure 1). The frame becomes complete when a rope is threaded through the eye-hooks and secured. Light trap sheets can be draped over the frame. Power for lights is supplied through the outlets on the network towers. A committee of volunteers from ENSO was established to construct the permanent light trap frame. The frame was inexpensive, costing approximately

\$60.00 to construct. The frame has proven to be structurally sound. The top cross beam was reinforced with two 2 x 4 planks of pressure treated wood to increase stability (Figure 2).

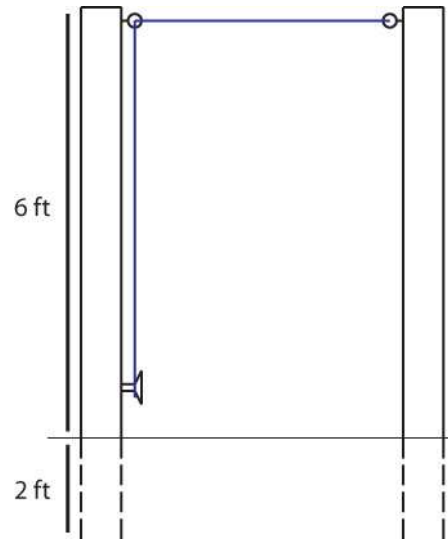


Figure 1. Schematic for light trap frame.



Figure 2. Completed light trap frame near the SEEP area of the NATL.

Results

The light trap frame was completed during the spring semester of 2015. ENSO has established a collecting kit to go along with the frame. This kit includes two sheets, rope, clothespins, extension cord, and a mercury vapor bulb/ballast. A key to the electrical outlets has been deposited in the main office of the Entomology and Nematology Department. Students are required to sign out the key so that the light-trap usage can be tracked. The light trap was used by the Principles of Entomology (ENY 3005/5006) spring 2015 sections and Insect Classification (ENY 4161/6166) students. STEAMquest (UF summer program for high school students interested in STEM and arts) and the entomology undergraduate club used the trap in a large event that totaled nearly 6 instructors and 50 students. The trap was also used for research purposes. The nocturnal scarab beetle species *Callistethus marginatus* was collected in high numbers over the course of two months in the spring and summer for use in bat feeding behavioral experiments (Branham Lab). A list of these collecting events is provided below (Table 1).

Table 1. Log of the NATL light-trap use for spring and summer 2015.

Group	Purpose	Date
Graduate and undergraduate entomology students	Course work	March 3, 2015
Graduate entomology students	Research	March 10, 2015
Graduate entomology students	Course work/Research	March 13, 2015
Undergraduate students (Principles of Entomology)	Educational/Course work	March 18, 2015
Graduate entomology students	Research	May 10, 2015
Graduate entomology students	Research	Daily June 26-July 6, 2015
STEAMquest and undergraduate entomology club	Educational/Fun	July 14, 2015

Conclusion

Currently each fall and spring semester the ENY 3005/5006 courses utilize the NATL for night collecting. Completion of this project affords teaching assistants and students a simple, quick insect collecting teaching lesson that can be utilized at any approved time. Students in other courses have begun to use the light trap to build their collections. We expect that as awareness of the light trap installation grows that its use will increase. Use of the light trap frame can be incorporated in to future NATL Minigrant proposals that seek to describe the insect fauna of teaching lab.