Light Trapping

Purpose:

You can assess the diversity of nocturnal flying insects (moths especially) and see how this compares with the abundance of birds in gardens.

Caterpillars are an important food source for birds. Collecting moths in the summer is one way to assess the abundance and diversity of caterpillars in your area. Different insects fly for different distances, and lights in contrasting habitats are visible for different distances.

Materials

The kind of light trap to use is dependent on availability of electricity. If electricity is present, the most efficient trap is a fluorescent bulb hung in front of a white bed sheet. Always let the base of the bedsheet rest on the ground surface; pull the base of the bedsheet forwards, which allows the incoming fliers to hit the sheet and fall down but remain on a visible background. If batteries are necessary, do not underestimate the difficulty of lugging car batteries around. They are extremely heavy, and no matter how careful you are-they tend to destroy clothes (use dry-celled batteries if available).



Light traps can be purchase through BioQuip (<u>www.bioquip.com</u>)



Procedure

Try to place your light in a position that maximizes its visibility no matter what. This will really help comparisons with other projects in other environments. Run the trap from sunset to sunrise if possible (use photoelectric switch to automatically turn on and off, so you save on battery recharging).

It's important to record weather conditions (especially temperature and rainfall); warmer days with misty precipitation yield the most flying insects.

Unfortunately, you need to kill the specimens. Be sure specimens are dead by freezing for 12 hours. Keep all beetles separate from moths if possible, since they die more slowly and can accidentally rip apart the moths before they die. Separate the moths into different morphospecies. Enumerate.

Store each species separately in a different paper "jeweler's" envelope; the envelope must be made of paper, NOT cellophane, or the moth will mold. If preserving examples of species in showcase form, learn how to "spread" specimens before they dry out and become brittle (24 hrs max). (see figure below to learn how to "spread" moths for display)



The **spreading board**, showing dimensions, details of construction (inset), and a spread specimen. The wings of the specimen may be held in place by a single broad strip of paper as shown on the left wings, or by a narrower strip and pins as shown on the right wings.