

# Project Information for the Wood-Boring Insects Project

## Project Details

**Principal Investigator:** John K. Moulton

**Project Description:** Cataloging metallic wood boring beetles (Coleoptera: Buprestidae) and clearwing moths (Lepidoptera: Sesiidae) of the Great Smoky Mountains National Park

**Project Dates:** Start Date: 4/1/2009 End Date: 3/1/2010

**Protocol:** Purple sticky traps targeting buprestid beetles were set out around Cades Cove, Tremont, Metcalf bottoms, Park Headquarters and Clingman's Dome. Pheromone traps were also set in the same locations targeting clearwing moths. Global positioning coordinates were taken for each trap location and were entered into the ATBI database. Traps were checked biweekly. Specimen found on traps were collected and preserved in 90% non-denatured ethanol for later DNA analysis in an effort to create a barcode each species. Taxonomic determinations were made using current keys for the eastern U.S. Voucher specimens of all Park records and specimen not used to extract DNA were deposited in the GSMNP insect collection.

**Project Notes:** Most collecting was done by Asst. P.I., Jason Hansen. Many collections done in 2008.

**Summary:** A survey of the wood-boring insect families Buprestidae (Coleoptera) and Sesiidae (Lepidoptera) was accomplished using purple panel and pheromone traps deployed in various locations of the GSMNP. A prior literature search revealed potential for over 70 new records of metallic wood-boring beetles alone and over 30 for clearwing moths. Our survey efforts resulted in 33 new Park records 12 of which represent new state records for Tennessee. Twenty-three of the new records were new metallic wood-boring beetles and ten clearwing moths. These records include (*Agrilus subrobustus*), an exotic relative of the emerald ash borer (*Agrilus planipennis*). Luckily *Agrilus subrobustus* is not a threat to the native fauna of the Park as its only known host is the mimosa, which is considered an invasive pest by Park managers. This survey has provide the material necessary to barcode many of the species captured and has resulted in the creation of four scientific manuscripts which are published or in the process of being published in peer-reviewed journals.

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### Data Summary

Data Collection Year(s): 1957 to 2010

Number of Sites Sampled:	18
Number of Samplings:	114
Number of Orders Identified:	3
Number of Families Identified:	4
Number of Genera Identified:	21
Number of Species Identified:	59
Number of Specimens Identified to Species:	190
Number of Specimens not Identified to Species:	2
Total Number of Individuals Counted (actual or estimated):	326
Percentage of Major Watersheds Sampled:	20 %