



# Notes from the Field

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## How to find a Warbler?

Imagine you are assigned the task of finding Golden-winged Warblers in a 210 square mile area that you have never been to. You must locate five



Photo by C.S. Robbins

points within the block that represent suitable habitat. You know the general habitat requirements, but how do you find it efficiently without driving forever?

This was the task that my husband, Mike Lanzone, and I were asked to do for the Golden-winged Warbler Atlas Project conducted by Cornell Laboratory of Ornithology. We were assigned 43 of these large blocks. Initially we spent hours just trying to locate the habitat. Then Mike who had been working in the Penn State Cooperative Wetlands Center as a field researcher decided to use the habitat model that Joe Bishop and Tim O'Connell had created for the Gap Analysis Program. The Gap Analysis Program (GAP) is a nationwide program that uses GIS to map vertebrate habitats and to determine "gaps" in protection of areas with high diversity. The avian models are based on literature, best professional judgment and loosely on data from the First Pennsylvania Breeding Bird Atlas, but had never been field-tested. Once we began using the Golden-winged Warbler model, we found habitat with ease and our rate of detection increased five times.

This experience spawned the idea that these models might be useful in finding other rare and/or secretive species for, the then upcoming, 2<sup>nd</sup> Pennsylvania Breeding Bird Atlas (2<sup>nd</sup> PBBA) scheduled to run from 2004-2008. The atlas, largely a volunteer based effort, will map the statewide distribution of all species of birds breeding in Pennsylvania. In 2002 Tim O'Connell and Dr. Rob Brooks applied for a grant to design and develop sampling protocols for the 2<sup>nd</sup> PBBA. A portion of this grant was earmarked to incorporate new gap models using updated land cover. The new models would be used by atlas volunteers to locate potential prime habitat and, therefore, improve species detection.

In September 2003 I was hired, under the direction of Joe Bishop, to run these new models. While working on them, I realized that for many reasons, some species models seemed rather vague

and not well defined for the spatial scale we would be looking at. Therefore, I decided to test the current models using data from the first two years of the atlas, which will likely provide some 40,000 geo-referenced records. In addition to testing the models, any which do not pass the test will be improved by using multivariate analysis on the existing data layers and on additional data layers, including mean annual precipitation and temperature, slope, aspect, soils and core/fragmented forest. In addition, for state forests, finer scale analysis will be possible using the Bureau of Forestry's Forest Typing Layer which provides detailed information on stand age and type.

In May of last year, Rob Brooks agreed to take me on as a master's student to test and improve these models. In June, under Dr. Brook's direction, I began writing a grant proposal for the Wild Resources Conservation Fund, and in November my funding was approved. For more information about this project feel free to contact me at [tam30@psu.edu](mailto:tam30@psu.edu) and for more information or to participate in the 2<sup>nd</sup> PBBA visit [www.pabirdatlas.org](http://www.pabirdatlas.org).

~Trish Miller, MS Student

### CANDIDACY EXAM PROCEDURES:

The Ecology Candidacy Examination is administered every fall and spring semester. The Candidacy Examination Committee is currently made up of the following faculty members: Roger Koide, Katriona Shea, K.C. Kim, and Margaret Brittingham. Every student who wishes to pursue a doctorate must take a candidacy exam administered by this committee. The purpose of the candidacy examination is to assess whether the student is capable of conducting doctoral research based on evidence of critical thinking or other measures that they view as essential to a successful doctorate student.

This exam should be taken early in a student's program. The examination may be given after at least 18 credits have been earned in graduate courses beyond the baccalaureate. The exam must be taken within three semesters (summer sessions do not count) of entry into the doctoral program. The student must be registered as a full-time or part-time degree student for the semester in which the candidacy exam is taken.

The exam is composed of a 4-hour written examination followed by a 1-hour oral examination given a week after the written component. This semester, the written exam will be given on March 23 and the oral on March 30. Please contact me, Rosemarie Hibbler (rqh7) and Roger Koide (rkoide) as soon as possible if you would like to take the exam this semester. Otherwise, I will send an e-mail again in early fall semester regarding administering another exam.

~Roger Koide

## Notes From Michael Gannon

Associate Professor of Biology  
PSU Altoona Campus



Although I actively pursue interests in many areas of zoology, evolution, and museum science, my principal research activities focus on topics in population, and community ecology of animals, with emphasis on both tropical and temperate systems, and using statistical techniques to answer questions of interest to both theoretician and field biologist.

Much of my work to date reflects efforts over the past 18 years in the tropical forests of Puerto Rico. The Luquillo Experimental Forest is the site of long-term ecological research funded by the National Science Foundation. As such, I have been able to take advantage of a great opportunity for interaction and collaboration with other researchers and I have developed a long and productive association with several. My research there involves examining ecology of volant mammalian frugivores and the roles they play in the dynamics of a tropical system. To accomplish this, a variety of techniques have been used including population monitoring, radio telemetry, echolocation and direct observation. Research involves examining and tracking populations and their response to major natural disturbances. This work began in 1987 and examines the role of frugivorous bats in the recovery of a tropical rain forest from hurricanes. At present, I am tracking the response of bat populations to two hurricanes that have occurred on Puerto Rico during the course of my study. This research examines the effect and demographic consequences of bats compared to pre-hurricane scenarios. Currently, this is one of the longest ongoing data sets on bat populations available, and the only one to have tracked responses of a bat community to multiple large-scale natural disturbances. Long term ecological research has the advantage of allowing questions to be posed on a number of different scales, some of which may not be evident at present but may ultimately contribute toward our knowledge of conservation of species and biodiversity of ecosystems. The results of this work are being used to evaluate the federal protection

status of at least one species of bat endemic bat in the Caribbean.

My research involving bats has also expanded into other areas of the Caribbean. I have done fieldwork on Dominica, Jamaica, and the U. S. Virgin Islands. This work has allowed me to pursue several questions of a long term nature involving systematics of bats which consider phenetic patterns as they relate to phylogenetic constraints on sexual dimorphism and multivariate morphometrics; reproductive biology of Caribbean bats; and population biology of Caribbean bat ectoparasites. In addition I have had several students work on projects involving ecology and natural history of tropical mammals, birds, and herps.

For the past 13 years I have pursued research on temperate bat communities as well. Much of this work is centered in Pennsylvania and West Virginia, at sites including Canoe Creek State Park in Blair County, and the Allegheny National Forest. I have worked with the Pennsylvania Game Commission, US Forest Service, and US Fish and Wildlife at these sites to examine population and community level questions on the bats occupying these areas. This work involves developing survey methods including ultrasonic echolocation to identify bat species present in different habitat types and at different times of the year. Much of this work centers around the Indiana bat (*Myotis sodalis*), which is federally endangered. Currently, I am working with a student to develop and refine survey methods that can be used to examine the presence of different species of bats and incorporate this into their management schemes.

A complete listing of my publications can be viewed and downloaded from my website <http://www.personal.psu.edu/faculty/m/r/mrg5/>

### Congratulations, Angela!

Angela Anders and Matt Marshall (former postdoc of Duane Diefenbach, and now an ecologist with the National Park Service) have an essay coming out in the February issue of *Conservation Biology*. The essay reviews methods currently used to collect empirical data on landbird productivity and survival, and it recommends implementation of methods that increase the accuracy of these estimates for population models. Widespread use of these methods among field researchers will allow us to more quickly identify the factors that limit avian populations, and will thus provide managers with a better understanding of the factors on which to focus conservation efforts. Anders, A.D. and M.R. Marshall. 2005. Increasing the accuracy of productivity and survival estimates in assessing landbird population status. *Conservation Biology* 19: 1-9.

#### Calendar of Events:

Feb 16<sup>th</sup> EGSO Meeting 5:30 Panera

Feb 19<sup>th</sup> and Feb 25<sup>th</sup> Amish Dinner  
RSVP required [jme145@psu.edu](mailto:jme145@psu.edu)