Wildlife Field Day Workshop Descriptions

Friday Evening Demonstration Descriptions:

Advances in microphones, computer software, night vision and thermal imaging technology have made the study of nocturnal wildlife a more common practice. For new users, the ability to field test these tools and compare various technologies is extremely valuable in finding the right device for use in the field. Although costly, these tools have become more affordable in recent years, but the ability to compare multiple items side by side is still limited. During the Friday evening demonstrations, participants will get the opportunity to field test Sonobat Live, night vision and FLIR (forward looking infrared or thermal) monoculars and scopes and learn the strengths and weaknesses of the various devices and how these technologies are used in the field to conduct management and wildlife survey efforts. These demonstrations will be put on by Julie Zeyzus and John Chenger from Bat Conservation and Management Inc. and Kyle Van Why from the US Dept. of Agriculture (APHIS-Wildlife Services).

Saturday Workshop Descriptions:

1) **Introduction to Wildlife Forensics (Dan Lynch, PA Game Commission)**

This workshop will focus on techniques and activities that Game Wardens use to solve wildlife crimes. Crime scene television shows are at an all-time high and using science and clues to solve crimes is a great way to get people involved in both the sciences and the environment. Determining time of death, identification of animal species, tracking and collecting evidence are all topics that will be explored. Participants should expect to be involved in hands on activities both indoors and outside. Dress to go outside.

2) **Mist Netting and Bird Banding: Handling Nets and Birds (Emily Thomas & Nathan Weyandt, Penn State University Dubois)**

Mist netting and banding birds is a common research technique in ornithology; however, it is often difficult to gain experience in this area due to a limited number of biologists with appropriate permits. This workshop will be entirely outdoors and will focus on handling techniques of both mist nets and birds. Participants will learn about and view the process of capturing and banding birds and will have the opportunity to setup and take down mist nets and safely handle and release songbirds.

3) **Wetland Delineation (Jane Rowan, Normandeau Associate, Inc.)**

Wetlands are commonly referred to habitats such as marshes, swamps, bogs, and fens; but what distinguishes wetlands from each other and other water body and terrestrial systems? Federal programs recognize wetlands as critically important habitats that contribute to maintaining the physical chemical and biological integrity of the Nations waters so that impacts to wetlands are highly regulated. Formal delineation protocols that identify the boundary between a wetland and water body or a wetland and upland area have been subject to both scientific and legal scrutiny resulting in boundaries that are both scientifically and non-scientifically derived. This class will review both the science and the policy that distinguishes wetlands from other habitats, and will

touch on wetland related regulatory programs that exist in the United States and in the Commonwealth, and how these programs prioritize certain features of wetlands in their management and conservation.

4) **Measuring and Managing Deer Forest Impacts (Emily Just and Ken Duren, PA Dept. of Conservation and Natural Resources)**

Numerous studies have documented the negative impact high populations of deer can have on forests. To reduce this effect, land managers may set deer population goals and make harvest decision based on these goals. However, this can lead to overlooking an important objective, healthier forests. The Pennsylvania Bureau of Forestry developed the Vegetation Impact Protocol (VIP) to measure the impact deer are having on state forests. Decisions on using the Deer Management Assistance Program (DMAP) to increase deer harvest are then based primarily on data from VIP and the desired condition of the forest. This approach helps ensure deer management is having the desired effect. This workshop will teach you how deer impact forest vegetation and how you can adapt the VIP monitoring program to your needs. You will learn which plants can indicate the level of deer pressure, collect vegetation data and learn how to analyze the data to make management decisions.

5) **Hormone and Genetic Sampling of Vertebrates (Brent Horton, Millersville University)**

This workshop will focus on the value of implementing hormone and genetic sampling in vertebrate field studies, the types of biological samples that can be used in hormone and genetic studies, and techniques for collecting and preserving hormone and genetic samples for analysis.

6) **Wildlife Trapping Techniques (Ralph Wagner, PA Trappers Association)**

Best management practices as outlined by the Pennsylvania Trappers Association are extremely important to follow when live-capturing mammals for research or controlling their numbers for wildlife management purposes. This workshop will be a hands on experience allowing attendees to both review and practice different mammal capture techniques that are both ethical and effective. Topics will include use of foot traps for canine and aquatic animals, a review of trap anchoring systems, the use of box traps and the difference between cable restraints and snares.

7) **Begin Using R for Statistics (Chris Stieha, Millersville University)**

The R programming language is free and open-source software used for everything from programming to statistics with strong support in all branches of science. In this workshop, participants will be introduced to the basics of R, such as reading in data, plotting, and implementing statistical tests, such as ANOVA and regression. Computers will be available for use, but participants may also bring their own laptop. If bringing your own laptop, please install R from cran.r-project.org before attending the workshop. Although not required, you may also want to install RStudio (rstudio.com) as a friendly user interface to R. If there are any questions, please contact me at Christopher.Stieha@millersville.edu

8) **Identification and Management of New Arthropod Invaders (John Wallace, Millersville University, Trilby Libhart, PA Department of Agriculture)**

Invasion ecology is a distinct area of research that addresses the ramifications of human-mediated introduction of organisms into areas outside of their historical ranges as defined by

natural dispersal and biogeographical barriers. Topics covered in this workshop will range from an introduction to invasion ecology, terminology and the processes of invasion to a shared discussion and lab session focused on the identification of recent arthropod invaders to Pennsylvania, their biology and current management strategies as well as some non-native plant introductions and state control efforts.

9) An Introduction to Wildlife Telemetry (Jason Collins, Normandeau Associate, Inc.)

This workshop will explore the methods employed by biologists to track wildlife, with a focus on radio-telemetry. We will discuss the theory and reasoning behind animal tracking including analysis of home range using minimum convex polygons and kernel density. Transmitter and receiver options for various study species will be discussed. During a short field trial, students will learn the "triangulation" method for estimating an animal's location and will have the opportunity hone their skills by finding transmitters placed outside.

10) Electrofishing Basics and Introduction to Fish Identification Fundamentals (Mike Martinek, Normandeau Associate, Inc.)

The first section of this workshop will describe the use of a backpack electrofishing unit deployed when conducting fish sampling surveys in small streams. Due to safety concerns, no waders/hip boots are necessary as streambank observations will provide sufficient viewing opportunity for all workshop participants. Fish will be collected while demonstrating the operation of the backpack electrofishing unit; participants will be provided an opportunity to view and identify the fish collected during the demonstration. Following the electrofishing demonstration, the workshop will shift to a classroom setting to provide an introduction to fish identification for all interested participants. A brief PowerPoint presentation and some common preserved fish specimens will be used to describe the basic skills required to correctly identify various fish species. Latex gloves and dichotomous keys will be provided during this section of the workshop.