

PENNSYLVANIA CHAPTER OF THE WILDLIFE SOCIETY

AND

THE SOCIETY OF AMERICAN FORESTERS

---

# 2016 Annual Conference & Workshop



---

*Penn's Woods: The Science Behind Pennsylvania's  
Wildlife Habitat*

---

April 15 – 16, 2016  
Ramada Inn, State College

# Abstracts

## Posters

(listed alphabetically by last name of presenter--italicized)

### **Impact of invasive berry producing plants on feeding guild structure at wetlands in central Pennsylvania.**

Zachary S. Adams, Juniata College, 1700 Moore St, Huntingdon, PA 16652

*Zachary Adams*, (717) 926-3926, adamszs15@juniata.edu; undergraduate student poster

I compared avian feeding guild structure between two wetlands with differing abundance of invasive berry producing plants in Huntingdon County, Pa in the fall of 2015. Two transects at each of the two wetlands were surveyed six times and bird species and counts were recorded. Vegetation was sampled once per transect and a total number of native and invasive berry producing plants was determined. Average abundance, bird density, and conservation scores were calculated for each site. Very few invasive berry producing plants were found at one wetland, while high numbers of berry producing invasive plants such as Autumn Olive (*Eleaegnas umbellatum*) were found at the other wetland. Average abundance at the wetland with no invasive berry producing plants (12.42 birds per visit) did not significantly differ from the wetland with abundant invasive (12.04 birds per visit) ( $t=.04$ ,  $p=.48$ ). Richness, density, and conservation score also did not differ between the two sites. The abundance of invasive species at Fouse's Crossing did not decrease bird abundance in the wetland. However, these results differ dramatically from a previous year's study showing that short term datasets are inadequate to full assess this research question.

### **Under the glow: Increasing funnel trap capture rates for adult vernal pool amphibians**

Michael Antonishak, David Muñoz, and David Miller, Ecosystem Science and Management, The Pennsylvania State University, 435 Forest Resources Building, University Park, PA 16802

*Michael Antonishak*, (570) 406-2202, mxa201@psu.edu; undergraduate student poster

In this study, we aim to improve survey techniques for monitoring amphibian populations that rely on ephemeral wetlands such as vernal pools. Traditional methods usually require significant effort to set up survey equipment (e.g. drift fences), but here we determine how to increase captures for aquatic funnel trap surveys, a viable alternative that provides sufficient capture data while reducing the time and effort it takes to survey one vernal pool. We demonstrate the utility of the method in a local vernal pool network, and we test the hypothesis that commercially available glow sticks will significantly improve capture rates of breeding adult amphibians. Twelve vernal pools were surveyed for the duration of the 2015 amphibian breeding season. Treatments were systematically applied (glow sticks or control) to each trap each night. Treatments were alternated so that each trap received approximately the same number of trap nights with glow stick or control treatment. Over 4500 amphibians were captured. We discovered that glow sticks increased mean captures of the Spotted Salamander (*Ambystoma maculatum*) by

3.28 – 5.30 times, Jefferson’s Salamander (*Ambystoma jeffersonianum*) by 2.06 – 2.72 times, and wood frogs (*Lithobates sylvaticus*) by 2.40 – 2.94 times more than traps without treatment. These results show that aquatic funnel traps are effective at surveying adult vernal pool amphibians, and glow sticks provide a lure for amphibians resulting in an increase of captures. By simply adding glow sticks to aquatic funnel trap surveys, researchers, conservationist, and management agencies can significantly improve the efficacy of their surveys and monitoring programs.

### **Pennsylvania Game Commission’s bat acoustic transect surveys.**

Stacy Wolbert, Mario Giazzon, Tammy Colt, Rich Fritsky, Clayton Lutz, and Daniel Mummert, Pennsylvania Game Commission, 2001 Elmerton Avenue, Harrisburg, PA 17110

*Tammy Colt*, (814) 233-2281, [tcolt@pa.gov](mailto:tcolt@pa.gov); professional poster

In 2014 and 2015, the Pennsylvania Game Commission recorded bat calls on 36 pre-determined mobile survey routes to (1) provide current information on summer location of bat species in PA; (2) track potential changes in species composition and activity over time within established survey routes; and (3) detect the presence of endangered, threatened, rare, and previously undocumented species. Call analysis of 71 sampling nights resulted in 6,078 recorded bat detections. Bat activity ranged from 22 to 169 bat detections with an average of 85.5 per route. Six of the 9 species known to occur in PA were recorded. Analysis software failed to identify 3,608 files (59.4%) to the species level. Of the 2,215 files identified to species, the majority were big brown bat (*Eptesicus fuscus*; 67.3%), followed by hoary bat (*Lasiurus cinereus*; 12.6%), eastern red bat (*L. borealis*; 12.3%), silver-haired bat (*Lasionycteris noctivagans*; 7.0%), tri-colored bat (*Perimyotis subflavus*; 0.6%), and northern long-eared bat (*Myotis septentrionalis*; 0.05%). Also, 4.2% of the files could only be identified to a guild. Interestingly, while not historically common in PA we detected two evening bats (*Nycticeius humeralis*; 0.1%) on different routes in the northeast and southcentral area of the state. While mobile acoustic surveys do provide challenges (e.g., high proportion of unidentified calls), the results can be used to support other datasets.

### **Fire frequency and the impacts on habitat at Fort Indiantown Gap.**

Jarrod M. Derr, Temple University; Timothy R. Haydt and Mark T. Swartz, Department of Military and Veterans Affairs, Fort Indiantown Gap NGTC, Wildlife Office Bldg. 11-19 Utility Rd. Annville, PA 17003

*Jarrod M. Derr*, (717) 269-6774, [c-jaderr@pa.gov](mailto:c-jaderr@pa.gov); professional presentation

The use of prescribed fire is a common method used to restore and modify various types of habitat. It is used commonly throughout much of the western and southern United States as management tool but less so in the Northeast. Fort Indiantown Gap National Guard Training Center (FIG-NGTC) and has one of the largest prescribed burn programs on a single landholding in Pennsylvania. The ease and quickness of application allows FIG-NGTC Natural Resource staff to use a rotational prescribed fire regime to manage the landscape for military use and fuels reduction as well as for ecological purposes that support a wide diversity of plants and wildlife. It has proven to be an effective tool for promoting and sustaining warm season grass fields and

wildflower meadows as well as typical Pennsylvania forest communities dominated by oak and hickory species. This method has also been commonly used to manage unwanted vegetation that easily encroaches on preferred habitat. For many years the effects of this management scheme have been monitored through various methods and have confirmed the benefits of using this tool to maintain early successional and forested habitats.

### **Is food diversity and availability a good predictor of barn owl (*Tyto alba*) nest distances in central PA?**

Samantha M. Loh, Laura E. Scales, Rebekah Smith, Emily Mausteller, Laura Spence, Mario Giazzon, Dan Mummert, Clayton Lutz, Richard Fritsky, and Dr. Carlos A. Iudica. Biology Department & Ecology Program, Susquehanna University, 514 University Avenue, PA 17870 & The Pennsylvania Game Commission.

*Samantha Loh*, (240) 605-9083, loh@susqu.edu; undergraduate student poster

Barn owls (*Tyto alba*) are nocturnal predators known for requiring large portions of open land to hunt and roost while breeding. Due to the amount of prey needed to sustain each owl, we averaged a minimum distance of 1-2 km that probably allows them to avoid competition typically separates individual families in central PA. We noticed, however, what seems to be a “nest cluster” in Union County, Pennsylvania separated by a distance close to 0.5 km. With no published data to explain this natural event, we decided to both follow what prey items are available year-round with monthly live trapping, and to analyze consumed fauna in the owl pellets of the individuals in the cluster. Our preliminary data from owl pellet analysis portrays a diverse local fauna of small mammals and birds as prey items. Specifically 80% rodents, 18% insectivores, and 2% birds. Within the rodents, we have found about 90% voles and 10% mice. Within the insectivores, we have found several different species. Our 13 months long live-trapping suggests a high density but low diversity of prey items consisting of only *Peromyscus leucopus* and *Blarina brevicauda*. By comparing the diversity of the regurgitates within our cluster with values and analyses from other nests, combined with the results of our live trapping, we may be able to suggest an explanation of this phenomenon.

### **Does *Canis latrans*' winter diet show similarities to that of *Canis lupus*?**

Madeline L. Metzger, Darrian Washinger, and Carlos A. Iudica, Biology Department and Ecology Program, Susquehanna University, 514 University Avenue, Selinsgrove, PA 17870

*Madeline Metzger*, (570)713-8260, metzgerml@susqu.edu; undergraduate student poster

Are coyotes in Pennsylvania still displaying solitary hunting strategies or are they behaving more like pack predators, as a consequence of their recent hybridization? Coyotes (*Canis latrans*) have been rapidly expanding into the Northeastern Region of the United States since the mid 1900's most likely due to anthropogenic changes in their habitat. Several studies suggest that in addition to being top predators, coyotes are opportunistic feeders and are able to switch prey based on availability and density. We hypothesized that coyote diets could resemble that of the gray wolves (*Canis lupus*) since coyotes in Pennsylvania show a degree of hybridization and are currently playing an apex predator role in our local ecosystems. For our research, one hundred and sixty

eight coyote stomachs were obtained throughout Pennsylvania from 2009-2012 and were dissected to define coyote winter diet. We expect to find insights that may allow us to answer the title question and gain knowledge that may prove useful for future management practices in the Commonwealth.

### **Is the Red-spotted Newt (*Notophthalmus v. viridescens*) a local reservoir of amphibian pathogens?**

Sean R. Quinn, Emily L. Dittman, Helen J. Hampikian, and Kurt J. Regester, Department of Biology and Geosciences, Clarion University, Clarion, PA, 16214

Sean Quinn, (570) 994-4359, S.R.Quinn@eagle.clarion.edu; undergraduate student poster

The chytrid fungus (*Batrachochytrium dendrobatidis* (*Bd*)) and the viral pathogen *Ranavirus* have caused population declines in many amphibian species in some regions of the world. The status of most Pennsylvania species is unknown but the Red-spotted Newt (*Notophthalmus v. viridescens*) is known to be susceptible to both pathogens. Between May and October 2015, we tested 88 adult newts from a local system of 18 permanent ponds on State Game Land 63 (1420 ha) in Clarion County Pennsylvania. We collected one skin swab sample for *Bd* testing, humanely euthanized each salamander, and then dissected and preserved livers and kidneys for *Ranavirus* testing. Pathogen DNA was detected using conventional polymerase chain reaction assays and gel electrophoresis. We detected *Bd* in 18 of 18 ponds with a local prevalence of 0.58 (95% CI = 0.47–0.68, N = 88), *Ranavirus* in 2 of 9 ponds with a local prevalence of 0.09 (0.03–0.22, N = 44), and a local co-infection prevalence of 0.05 (0.01–0.16, N = 43). Our results show the Red-spotted Newt is an asymptomatic local reservoir for *Bd* for at least six months of the year and are the first report of *Ranavirus* in a western Pennsylvania population. The area we studied is a small network of local ponds with multiple species of amphibians present. Understanding the prevalence and distribution of both pathogens in the Red-spotted Newt, one of the most abundant amphibians in the state, is important for surveillance efforts and further studies of disease ecology in the region.

### **Assessment of road culverts as passage barriers to wild and stocked trout in Pennsylvania headwaters.**

Karli M. Rogers<sup>1</sup>, David J. Janetski<sup>1</sup>, Shawn M. Rummel<sup>2</sup>, Kathleen Lavelle<sup>2</sup>

<sup>1</sup>Department of Biology, Indiana University of Pennsylvania, Indiana, PA 15705

<sup>2</sup>Trout Unlimited- Pennsylvania Coldwater Habitat Restoration Program, Lock Haven, PA 17745

Karli Rogers, (267) 909-0851, karlimrogers@gmail.com; graduate student poster

Brook trout (*Salvelinus fontinalis*) are an iconic species in the Eastern United States due to their popularity as a sport fish and as an indicator of ecosystem health. In Pennsylvania, two primary threats to brook trout are habitat alteration and competition with non-native species. Road culverts can pose as barriers to migratory fish and other aquatic organisms, which isolates populations and reduces access to upstream spawning habitat. To categorize the degree to which culverts prevent fish movement, watershed managers use physical measurements to classify the passability of the each culvert. The Little Bear Creek watershed, a wild trout stream in the Loyalsock watershed,

contains three culverts categorized as barriers. It is unknown whether these culverts are indeed barriers to migratory fish, especially trout. Furthermore, brown trout (*Salmo trutta*), a non-native species, are commonly stocked in Pennsylvania streams and often establish reproducing populations that compete for resources with native brook trout. To measure how passable these culverts are, we tagged nearly 500 wild trout in 2015 with 23mm passive integrated transponder (PIT) tags. Antenna arrays were constructed on the upstream side and downstream side of each culvert, as well as a control site lacking man-made barriers to trout movement. Current results reveal that trout are moving through two of the three culverts. We will be able to test for correlations of trout movements with daily stream conditions. By “ground-truthing” culvert assessment methods, we anticipate our study will ultimately help watershed managers better prioritize culverts for removal or replacement.

**PA mammal hair sampling and analysis.**

Nathaniel Borger and Alicia Shenko, Delaware Valley University, Doylestown, PA, 18901

*Alicia Shenko*, (609) 540-1602, [Alicia.shenko@delval.edu](mailto:Alicia.shenko@delval.edu); professional poster

Hair sampling is a standard non-invasive method of monitoring mammal species and has the potential to detect those species able to avoid other survey methods. Data was collected as part of an overall mammal species inventory in which camera traps and live traps were the primary source of species presence. Hair collection devices included scent posts, carpet pads, cubbies, and hair corrals. Scent lures were used with the scent posts, carpet pads, and cubbies, while hair corrals were baited with a deer carcass. Although many species that should have been detected in the area were identified in camera photos and live traps, hair collection devices had little or no success. Most of the hair collection devices relied on the mammals being drawn to a scent lure which may have not been effective. Additionally, data may have been lost if animals were drawn to the scent lures but hair was not captured by the devices. The only successful outcome came from using the hair corral baited with a deer carcass. While this one method was successful, this study demonstrates that abundant and easily detectable species can avoid detection via hair sampling. Future improvements to these methods continue to be needed in order to refine and support their effectiveness when used in the field.