

Pennsylvania Fish & Boat Commission 2015 Annual Summary

State Wildlife Grants



*Susquehanna River @ Union Boat Ramp
Mary Walsh, Western Pennsylvania Conservancy*

In this issue.....

- State Wildlife Grants: Benefits for Pennsylvania's Aquatic Species & Their Habitats.
- The Pennsylvania Amphibian and Reptile Survey (PARS).
- Eastern Pearlshell Mussel Surveys: Increasing our understanding of Pennsylvania's mussel fauna.
- Pennsylvania's Wildlife Action Plan: Addressing current needs while planning for the future.



Northern Cricket Frog, Brandon Ruhe (MACHAC).

February 2015

State Wildlife Grants: Benefits for Pennsylvania’s Aquatic Species & Their Habitats

The State Wildlife Grants Program represents an investment in the natural resources of Pennsylvania and provides practical, tangible benefits for the Commonwealth’s *Species of Greatest Conservation Need*. These benefits include an increased understanding of the species which contributes to their enhanced protection & management. The data gathered from State Wildlife Grant projects are laying the foundation for current and future conservation actions and will be especially important for addressing impacts from factors such as climate change, urban sprawl and energy development. The Fish and Boat Commission has taken a three-fold approach to addressing aquatic resource needs.



*Pine Creek @ Avis.
Mary Walsh, Western Pennsylvania*

1. **Landscape-Scale Approach:** In major ecological systems such as the Allegheny, Susquehanna, and Delaware River Basins, a landscape-scale approach is being used to establish current, comprehensive baseline data on high-priority species and habitats.

The Ecological Setting

The Commonwealth is at a geographic crossroads in the Northeast and thus plays a pivotal role in conserving many species and their habitats. For this reason, the strategies and priorities identified in Pennsylvania’s State Wildlife Action Plan incorporate the needs of Pennsylvania’s “Responsibility Species” and their associated habitats. Examples of Pennsylvania’s ecosystems include:

- An estuary on the Delaware River,
- Woodlots and wide agricultural valleys in the southeast,
- Deciduous forests of the central ridges,
- Extensive mixed forests of the Allegheny high plateau,
- Glaciated woodlands and wetlands, and
- Lake Erie in the northwest.

2. **Collecting Data on Priority Species:** Data collection and management initiatives have been primarily directed towards indicator or keystone species, guilds or communities. These include freshwater mussels and fishes. State Wildlife Grant-funded projects are providing information on the status of many of these animals to allow a more *proactive* approach towards their protection and management.

3. **Resource Planning:** Resource planning includes development of resource management plans and other initiatives that will greatly assist resource managers with efficiently and effectively directing on-the-ground activities to secure species and their habitats. Prior to the State Wildlife Grants funding, few resources were available for *Species of Greatest Conservation Need*, primarily non-game species.

The Pennsylvania Amphibian and Reptile Survey (PARS)

Summary: A comprehensive Amphibian and Reptile database will provide current data to inform conservation decisions. This project has strong citizen support demonstrated by the 998 volunteers who have registered to assist with this project since its inception on June 1, 2013. For the PARS master database, over 100,000 specimen records and 15,000 paper records have been collected for entry into the system.

Objective: To create an effective herpetological atlas and a comprehensive management strategy for the conservation of amphibians and reptiles within the Commonwealth, and to address the needs of the PA Fish and Boat Commission identified in the Pennsylvania's Wildlife Action Plan.

Approach: The Pennsylvania Amphibian and Reptile Survey (PARS) project will:

- Develop a comprehensive, quality checked herpetological database through the compilation of all Pennsylvania herpetological data, including scientific collectors, contract work, environmental review, Pennsylvania Natural Diversity Inventory (PNDI), previous herpetological atlases, museum, and historical PA collections. The PFBC will use this database to link records from all historical sources with future records, thus linking all amphibian and reptile records for the first time in Pennsylvania;

- Develop a systematic volunteer/citizen science driven PA amphibian and reptile atlas, including a user friendly and interactive website;
- Develop focal species teams that target high priority species of concern – species such as the New Jersey Chorus Frog, Southern Leopard Frog, Northern Cricket Frog, and Rough Green Snake, as identified in the Commission's strategic plan;
- Establish long-term amphibian and reptile monitoring sites.

Status: In the most recent reporting period ending December, 2014, a total of 100,996 specimen records from all sources were collected and evaluated. Of these records, thus far, a total of 60,762 specimen records were considered suitable vouchers with appropriate documentation. To-date, the PARS Verification Committee has verified 23,743 records submitted by volunteers.

Since the launch of the PARS project on June 1, 2013, project volunteers have submitted a total of 16,903 records. During this time, a total of 1,558 tracked species records were reported which included new records of threatened and endangered species and other *Species of Greatest Conservation Need* such as Cope's Gray Treefrog (*Hyla chrysoscelis*), Eastern Cricket Frog (*Acris crepitans*), Western Chorus Frog (*Pseudacris triseriata*), Bog Turtle (*Glyptemys muhlenbergii*) and Northern Red-bellied Cooter (*Pseudemys rubriventris*). Three records were also received

for the Smooth Eastern Earthsnake (*Virginia valeriae valeriae*), a species believed to have been extirpated from Pennsylvania.

For more information: <http://paherpsurvey.org>

Project: T2-14-R-1. The PA Amphibian and Reptile Survey (PARS). Mid-Atlantic Center for Herpetology and Conservation (MACHAC).

Eastern Pearlshell Mussel Surveys: Increasing our understanding of Pennsylvania’s mussel fauna.

Summary: Insufficient distribution and abundance information precludes development and implementation of conservation actions for the Eastern Pearlshell Mussel. Surveys to characterize densities, genetic viability, and habitat characteristics and search for previously unknown populations began in 2013. Final surveys will occur in spring 2015.



*Eastern Pearlshell Mussel.
Mary Walsh, Western Pennsylvania Conservancy*

Goals: Identify sites at which the Eastern Pearlshell mussel was not previously noted;

- Develop baseline information on Eastern Pearlshell populations including abundances, densities, shell lengths, and genetic diversity that can be compared to future monitoring data;
- Assess genetic viability and isolation of Eastern Pearlshell populations;
- Characterize water quality, habitat and watershed characteristics at extant and historic sites;
- Recommend management and conservation activities.

Status: Insufficient information precludes development and implementation of conservation actions for the Eastern Pearlshell Mussel. This project will provide data on the distribution, abundance, genetics and habitat-associations, along with recommended conservation measures. In 2013 and 2014 qualitative and quantitative surveys for Eastern Pearlshell mussels occurred in 23 streams in the Delaware River watershed and genetic samples were collected from Eastern Pearlshell mussels in three locations.

Distribution and Relative Abundance:

Qualitative and quantitative mussel surveys will be conducted on streams that have historically held Eastern Pearlshell mussels. When completed, these surveys will provide the current status of this species in Pennsylvania.

Habitat and Water Quality: A rapid habitat bioassessment protocol and water quality data (e.g., pH, conductivity, dissolved oxygen) will be used to prioritize sites for restoration and conservation. Analysis will include assessment of current habitat and water quality, threats, watershed condition (e.g., acid mine drainage, land use and land cover patterns, dam occurrence and density, road density and crossings, and temperature class) for extant and select historic Eastern Pearlshell mussel locations.

Genetic Analysis: Currently, there are only three known populations of the eastern pearlshell in Pennsylvania. If additional populations are found, this project will evaluate genetic variation, within up to three populations, by sampling tissue from up to 50 individual mussels per population.

Genetic variation is necessary for the long-term viability of wildlife populations. Reproductively isolated populations tend to have reduced genetic variation due to the combined effects of inbreeding and genetic drift. Interventions to improve the long-term viability of a population will be based upon several factors including the significance of the population to the genetic variability of the Eastern Pearlshell mussel in Pennsylvania.

Anticipated Outcome: This project will provide information for Eastern Pearlshell management and conservation in Pennsylvania, including detailed site-level recommendations that managers can use for habitat restoration and potential augmentation and restoration of Eastern Pearlshell populations. The results will also allow protection of newly identified populations (if found).

Project: F13AF00473. PA Assessment of Eastern Pearlshell Distributions, Population, Genetic Diversity and Habitat. Western Pennsylvania Conservancy.



*Preparing mussels for genetic sampling.
Mary Walsh, Western Pennsylvania Conservancy.*

Pennsylvania’s Wildlife Action Plan: Addressing current needs while planning for the future.

Summary: The Pennsylvania State Wildlife Action Plan has guided efficient and effective use of federal and state funds to address conservation needs of at-risk and declining species and to keep common species from becoming imperiled. The plan is now undergoing the congressionally required 10-year comprehensive review and revision. In 2012, the Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission initiated this revision and will be submitting Pennsylvania’s revised plan by September 30, 2015.

Background: Designed and guided by Congress in the late 1990’s, the *proactive* State Wildlife Action Plans have provided a vital foundation for states to address the needs of declining species and habitats. Implementing actions to protect, conserve and enhance species *before* they become federally threatened and endangered is both ecologically and economically beneficial. Early on, Congress recognized that costs for recovering species on the brink of extinction are far greater than taking an early interventional approach when the species are more abundant.

Submitted jointly in September, 2005 by the Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission on behalf of Pennsylvania, this plan has been a foundational document for addressing vital

resource conservation needs within the Commonwealth. In the intervening years since its approval, both agencies have used the plan to guide application of the State Wildlife Grant Funds to address high-priority needs identified in the Plan. The plan also serves as a blueprint for conservation partners as they seek to determine how they can implement actions to protect and enhance *Species of Greatest Conservation Need* and their habitats.

Goals of the Pennsylvania Wildlife Action Plan

Goal 1: Improve the scientific basis for making conservation decisions for wildlife, with special emphasis on species of greatest conservation concern.

Goal 2: Plan, prioritize, and implement actions that will conserve the state’s diversity of wildlife and its habitat.

Goal 3: Develop a knowledgeable citizenry that supports and participates in wildlife conservation.

Goal 4: Ensure that the necessary resources are available to conserve Pennsylvania’s wildlife.

Goal 5: Expand and improve coordination of the public agencies and other partners in wildlife conservation planning and implementation.

*Susquehanna River at Vinegar Ferry,
Western Pennsylvania Conservancy.*

Foundations of Pennsylvania’s Plan:

The natural resources of Pennsylvania have played an important part in the history of the Commonwealth influencing the culture, economy, recreation and overall well-being of its citizens. The diverse habitats including cold headwater streams, large rivers, wetlands, expansive and abundant forests, as well as rare habitats (e.g., vernal pools) support a wide array of species. Therefore, the purpose of the current State Wildlife Action Plan has been: *To conserve Pennsylvania’s diverse wildlife to maintain its role in ecological processes, and to protect and enhance species of conservation concern.* The overall vision of the plan is *Pennsylvanians working together to attain sustainable wildlife populations, communities*

and ecosystems and to prevent and reverse the declines of species.

Implementing Pennsylvania’s Plan:

Many of Pennsylvania’s *Species of Greatest Conservation Need* identified in the Pennsylvania’s Wildlife Action Plan may be cryptic in coloration, low in abundance, or sparsely distributed. Additionally, some habitats are difficult to sample (e.g., deep, large-river systems) and the inability to sample these habitats has contributed to incomplete information about some species. Further, the lack of population and range information for some species has limited full development of conservation measures for the species. Thus, for the Fish and Boat Commission, an overarching



*Tuscarora Creek.
Jeremy Deeds, Western Pennsylvania Conservancy.*

emphasis has been to gather information on these rare, and little-known, species.

New Sampling techniques, more intensive sampling efforts, enlisting assistance from volunteers and other initiatives have greatly expanded the knowledge about many species. Because of this enhanced information, ten state-threatened and endangered species have been delisted as they were found to be more abundant than previous data had indicated. Of course, this enhanced surveying has also found some species to be less abundant than previously known and has contributed to the state-listing of several species. Consequently, these species are likely to become a higher priority for conservation actions.

Comprehensive Review and Revision of State Wildlife Action Plans: As required by Congress, and specified in Required Element #6, each state and territory is required to conduct a comprehensive review and revision of their State Wildlife Action Plan no less than every 10 years. In 2012, Pennsylvania began this review and revision process and will be providing a revised plan by the required date of September 30, 2015. Staff in the Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission are leading this process and an administrative structure has been developed to help ensure that that review and revision are complete and accurate. Conservation partners (e.g., federal and state natural resource agencies, non-governmental organizations) comprise an Advisory Committee that serves a crucial role by ensuring that the direction and content of the revised plan will address the broad conservation needs of the Commonwealth. Technical Committees provide

support for species assessments and other special topics (e.g., climate change).

Although the revision is not yet complete, it is clear that in intervening years since approval of the current plan, substantive changes have occurred across Pennsylvania. These include new threats to resources, advances in knowledge of species and their habitats, and a greater understanding of Pennsylvania's regional role. This new information and other changes will be discussed in the revised Pennsylvania Wildlife Action Plan.

*Cathy Haffner-PA Game Commission &
Diana Day-PA Fish and Boat Commission.*

Project: F14AF00255. Pennsylvania State Wildlife Grants – Planning and Revision of the Pennsylvania Wildlife Action Plan. Pennsylvania Fish and Boat Commission and Western Pennsylvania Conservancy.

Contact: Diana Day | Conservation Coordinator
Pennsylvania Fish and Boat Commission
717.346.8137;
diday@pa.gov; <http://www.fish.state.pa.us>