Greetings!

March 2014

Most of the ice and snow from a particularly brutal Pennsylvania winter has melted and we all are quite eager to head outdoors for a brand new herping season. By now the earliest amphibian breeding activity is underway, and this is the perfect time to seek out seasonal pools (see the Field Techniques column of this issue). On mild days rock piles with sunny exposures are great locations to look for the first snakes of the year; hearty species such as Eastern Milksnakes and Eastern Gartersnakes are already emerging from their winter dens, eager to bask in the late winter sun.

Despite the severity of this winter, a few hearty souls continued to submit records during the very cold months of January and February; Ed Patterson, Scott Martin, Aaron Bierly, Scott Martin, JD Hartzell, Nick Wachter, Jacob Cramer, Kenneth Anderson II, Duane Stafford, Kyle Loucks, Stan Boder, Ethan Eckert and Sebastian Harris all deserve a shout out for their dedication. Not surprisingly, most winter observations were of streamside salamanders, but an unusual observation of an Eastern Ratsnake was made in early December, and a great observation of a Wood Turtle overwintering in a stream pool was made in January.

This is looking to be a productive year for PARS. With our first crew of Regional Coordinators in place, we expect to be recruiting many new volunteers and conducting numerous organized herp outings across the state. We expect this year’s records to surpass the incredible 7000+ observations submitted by volunteers since the launch of PARS in 2013. In addition to informative presentations about PARS and Pennsylvania’s herps, we will also be offering volunteer workshops to offer insights about the art of finding and documenting reptiles and amphibians. Keep an eye on the PARS website calendar and facebook page for more of these events as they are scheduled.

If you are looking for guidance about locations to survey, be sure to check in with the Regional Coordinator for your area – their names and email addresses can be found on the last page of this publication. Before heading into the field, remember that a valid Pennsylvania fishing license is required to survey for reptiles and amphibians legally in our state. If you have not yet acquired one for this year, they are inexpensive and readily available at most sporting goods stores, or simply go the Pennsylvania Fish & Boat Commission’s website to purchase one online: www.fish.state.pa.us.

On behalf of The Mid-Atlantic Center for Herpetology and Conservation and the Pennsylvania Fish & Boat Commission, we wish you a safe, productive and exciting field season.

Good herping,
Marlin Corn, PARS State-wide Coordinator
In the previous two installments of this article we looked at some herpetologically-related concepts to justify our effort to document the current herpetological populations within the borders of Pennsylvania. In part one we examined reasons why reptiles and amphibians are important components of our planet's ecosystems, and why they are directly important to people. In part two we discussed recent global declines in reptile and amphibian populations. Certainly these two issues would be compelling reasons for investigating herp populations in general; and numerous other states, and other countries have conducted herpetological atlases. In fact, two previous herpetological atlases have already been completed in Pennsylvania. The first was coordinated by Indiana University of Pennsylvania (IUP) and collected data from 1996 to 2002. The second, which focused on rare amphibian and reptile species, was coordinated by Shippensburg University and ran 2006-2010. Both of these successful projects increased our understanding of reptile and amphibian population distributions in our state. The Pennsylvania Amphibian and Reptile Survey (PARS) will build on the lessons learned from these previous projects, and will attempt to close the considerable gaps which remain in the mapping of Pennsylvania's herpetofauna.

Since the efforts of the two previous herpetological atlases, some startling new discoveries have been made concerning some of Pennsylvania's rare species. In the previous installment of this series we mentioned that two species, thought to have been extirpated from our state, were recently 'rediscovered' in southeastern Pennsylvania: the New Jersey Chorus Frog and the Eastern Mud Turtle. Another rare species, the Mountain Chorus Frog was not found during the first atlas project, and many believed this species had been extirpated. However, several small breeding populations have been found in recent years. Additionally, 148 Eastern Spadefoot breeding sites in fifteen counties have been identified since the confirmation of only a single breeding site during the first atlas project. New observations of the Commonwealth's rarest lizard, the Broadhead Skink, have recently been made after a twenty-year period of no observations. In 2000 a new species was documented in Pennsylvania for the first time: the Blue-spotted Salamander.

These examples serve to illustrate that despite the great success of previous atlas projects, our knowledge of Pennsylvania's herpetofauna remains incomplete. While the re-discovery of rare species is certainly good news, challenges remain. For a variety of reasons Pennsylvania's landscape continues to change, with habitat being lost at an alarming rate. Additionally, changes in vegetative structure, often due to the introduction of invasive plant species, can also negatively impact species. The succession of wetlands by trees and woody shrubs degrades wetland habitat utilized by some of our rarest species such as the Bog Turtle and the Eastern Massasauga. Historically, as natural habitat changes occurred in unbroken landscapes, organisms either moved to more suitable habitat or died out. But these dynamic systems were both vast and diverse, and population expansions/contractions often occurred over many years, centuries, or even millennia. However, with the significantly altered landscapes of today, dispersal and migration are often not longer possible for many species. The survival of these species may very well depend on the identification and proper management of their habitats. But how can we accurately determine the current status of rare species if we don't know where they reside?

Pennsylvania is a very large state, and while we may never find every location for every species, PARS will significantly close the current gaps in our knowledge of the Commonwealth's reptile and amphibian distributions. The application and impact of PARS is expanded greatly by modern technologies such as GPS, interactive mapping, digital photography, and social media. These tools were generally unavailable to previous atlas efforts making precise location recording and verification of species identification difficult. By utilizing these advantages, the PARS project will greatly enhance Pennsylvania's ability to protect its rare amphibian and reptile species. They deserve nothing less.
Project Updates

VOLUNTEER WORKSHOPS OFFERED
The PARS team will begin offering volunteer workshops this year. Followed by a brief overview of the PARS project, these workshops will instruct participants about basic herp survey methods, protocol, equipment, and data collection. Each workshop will include a brief survey on the grounds of the hosting facility. See the calendar for currently scheduled workshops. If you are involved with a facility that would like to host a PARS volunteer workshop, or a PARS introductory presentation, please contact Marlin Corn, mcorn@machac.org.

FOCAL SPECIES TEAMS STARTING UP
One of the objectives of the PARS project is the creation and development of Focal Species Teams. These teams will focus on locating new populations, and reconfirming previously detected populations, of Pennsylvania's rarest herp species. Teams will also attempt to identify and map out all potential habitat in the regions these species are detected. Resultant information will serve as an invaluable conservation tool for wildlife agencies, and for the environmental and land managers associated with identified sites. Utilizing the assistance of key volunteers, each team will be led by an expert for the target species. The first set of targeted species are:

- New Jersey Chorus Frog
- Coastal Plains Leopard Frog
- Rough Green Snake
- Broadhead Skink
- Blanding's Turtle
- Northern Cricket Frog
- Kirtland's Snake
- Eastern Mud Salamander

If you are an expert on any of these species, or have had extensive experience in locating any of these species in Pennsylvania or other states, and are interested in participating in a Focal Species Team, please contact us at info@machac.org.

AMPHIBIAN MIGRATION HEAT-MAP
A fun visual has been added to the website; an amphibian heat map. This map reflects recent migration movements of Jefferson Salamanders, Spotted Salamanders, Four-toed Salamanders, Wood Frogs and chorus frog species, with brighter, hotter colors reflecting the most recent movements reported by PARS volunteers. Migratory amphibians will be tracked from March 1 - May 31.

VOLUNTEER INPUT WANTED
We would like to hear from our volunteers regarding suggestions for improving the PARS project. We are also interested in having PARS volunteers contribute articles to this newsletter. If you have an idea you feel would enrich the newsletter, or if you would like to author one of the existing columns, please let us know by emailing your suggestions to info@machac.org.
Scheduled Herp-Blitz Field Trips:

April 13 - Adams County  
Contact: Marlin Corn, mcorn@machac.org

May 3 - Sullivan County  
Contact: Marlin Corn, mcorn@machac.org

May 3 - Erie County  
Contact: Mark Lethaby, nw@paherpsurvey.org

May 31 - Susquehanna County  
Contact: Marlin Corn, mcorn@machac.org

More to be scheduled – stay tuned for details!

PARS Informative Presentations & Volunteer Workshops:

March 29, 10:00 a.m. - Bucks County  
PARS Volunteer Workshop  
Bowman’s Hill Wildflower Preserve, 1635 River Rd., New Hope, PA

March 29, 6:00 p.m. - Bucks County  
PARS Introductory & Vernal Pool Presentation / Walk  
Richland Township Building, 1328 California Rd., Quakertown, PA

April 5, 7:00 p.m. - Chester County  
PARS Introductory Presentation  
Great Valley Nature Center, 4251 State Rd., Devault, PA

April 9, 6:30 p.m. - Clarion County  
PARS Introductory Presentation  
Seneca Rocks Audubon Society at the Clarion Free Library, 644 Main Street, Clarion, PA

April 12, 10:00 a.m. - Adams County  
PARS Introductory Presentation  
Strawberry Hill Nature Preserve, 1537 Mount Hope Rd., Fairfield, PA

April 19, 11:00 a.m. - Erie County  
PARS Introductory Presentation  
Tom Ridge Environmental Center at Presque Isle, 301 Peninsula Dr., Erie, PA

May 14, 7:00 p.m. - Montgomery County  
PARS Introductory Presentation & Roundtable Discussion  
Briar Bush Nature Center, 1212 Edge Hill Rd., Abington, PA

June 13, 6:30 p.m. - Berks County  
PARS Introductory Presentation  
Berks Conservancy, 25 North 11th St., Reading, PA

June 29, 2:00 p.m. - York County  
PARS Introductory Presentation  
Richard M. Nixon County Park, Nixon Dr., Jacobus, PA

August 9, 7:00 a.m. - Delaware County  
PARS Introductory Presentation & Herp Talk/Walk  
Glen Providence Park, Main Entrance, 500 block of West State St., Media, PA

August 10, 2:00 p.m. - Bucks County  
PARS Introductory Presentation & Herp Talk/Walk  
Bucks County Audubon at the Honey Hollow Environmental Education Center, 2877 Creamery Rd., Lahaska, PA
Observations from the Field

Summary of records received for December 2013 through February 2014:

Please note that these numbers represent the number of sites, not actual numbers of specimens. Records not submitted by the end of the month may not be included.

Unsurprisingly, the records for the winter months are sparse. However, there were several dedicated souls who refused to let this particularly harsh winter keep them indoors.

Highlights of observations made December of 2013 through February of 2014:

• The vast majority of observations were of streamside salamander species.
• An active Eastern Ratsnake was found by Kenneth Anderson II on December 4 (!) in Butler County.
• A brumating Wood Turtle was observed in a stream pool in January by Stan Boder.

Salamanders
Northern Dusky Salamander--22
Seal Salamander--1
Allegheny Mountain Dusky Salamander--18
Northern Two-lined Salamander—20
Long-tailed Salamander - 1
Northern Spring Salamander--15
Four-toed Salamander--2
Red-spotted Newt–3
Eastern Red-backed Salamander--18
Valley & Ridge Salamander--2
Northern Ravine Salamander--1
Northern Red Salamander--7

Frogs
Green Frog--9
Pickerel Frog--6
Spring Peeper--2

Snakes
Northern Ring-necked Snake--1
Eastern Ratsnake--1
Northern Brownsnake--2
Eastern Gartersnake--2

Turtles
Snapping Turtle--2
Eastern Musk Turtle (shell) --1
Wood Turtle--1
Northern Map Turtle--1
Red-eared Slider*--1
Box Turtle (shell) --1

*Non-native, naturalized species
In the previous newsletter issue we looked at some of the most noteworthy records in terms of rare species, and a few of the most memorable images of herps photographed in the natural moment. In this issue we would like to simply continue with one of the most memorable photos received during the first season.

Matt Mason submitted this incredible photograph which captures a large number of at least three different species of snakes at a communal basking site. See how many individual snakes you can find, and how many different species you can identify. Check your success by looking at the outlined version of this photo near the end of the newsletter. You will likely need to enlarge this image in order to find all of the snakes. To see this and accompanying photos on the PARS website, search for record #19686.

See Outline on page 19.
The return of the first migratory birds from their winter sojourns in the South is considered by many to be one of the obvious signs of spring. But those who would venture out into the night during the first warm rains of late winter may see the true harbingers of the vernal season: the amphibians which migrate to forested seasonal pools to breed, often before the first migratory birds have returned. Many of Pennsylvania's amphibians utilize seasonal pools, but some rely almost exclusively on these unique ecosystems for reproduction. Species most dependent on seasonal pools for breeding in Pennsylvania include the mole salamanders (Spotted Salamander, Blue-spotted Salamander, Jefferson Salamander and Marbled Salamander), Wood Frogs, Eastern Spadefoots, and some of our chorus frog species. Forested seasonal pools, often referred to as vernal pools, are a Mecca for the winter-weary field herpetologist who is eager to begin the new field season. Before plunging into these pools in pursuit of the year's first records, you should take a few things into consideration.

### Locating vernal pools

In Pennsylvania, seasonal pools are often associated with forests. While in forests throughout the year, keep an eye out for existing pools of standing water, or evidence of dried pools in the form of depressions with matted, muddy leaf litter and a conspicuous scarcity or absence of growing plants. If you discovered any sites earlier in the year be sure to revisit them during, or after the first warm rain events in late winter or early spring. Seasonal pools can also be located by sound. By slowly driving, with the windows open, along roads in forested areas during warm, moist nights this time of year, you might hear the calls of early breeding frogs. Wood Frogs and some chorus frog species may begin calling as early as mid-February. Spring Peepers breed in most types of wetlands, but a Peeper chorus coming from woodlands likely indicates the presence of a vernal pool. Some chorus frog species may begin calling as early as mid-February, with vocalizations that are insect-like in quality; however there are no insects which call this early in the year (these calls are also often described as similar to the sound of running a fingernail over the teeth of a comb). Later in the season, other frog species may also utilize seasonal pools for breeding.

While amphibian vocalization is one of the best clues to a breeding site, it is not always dependable. While the calls of Spring Peepers can be heard over great distances but the calls of other early-breeding frog species do not carry as well. Salamanders do not vocalize, and certain species (e.g. Jefferson Salamander) might migrate to breeding sites long before the first frogs arrive. If road-cruising at night to search for early breeding sites, keep a sharp eye out for amphibians crossing the road. If you discover live or dead amphibians on the road at this time of year, there is a very good chance a vernal pool is nearby. Try to determine which side of the road the animals are heading toward; that is the direction in which to focus your search. It may be necessary to return during daylight hours to locate the site. Seasonal pools are variable in size, and some are quite small; these may be difficult to locate in darkness with only the guidance of calling frogs. As always, be sure you have obtained the necessary permission before entering any posted lands.
How to Survey
Once a vernal breeding site, has been discovered, great care should be taken to minimize your impact. Decontamination protocols should be strictly adhered to when surveying vernal pools; their relatively small sizes with finite borders make their inhabitants particularly vulnerable to disease introductions and to other disturbances (consult the ‘Decontamination Protocols’ in the ‘Downloadable Resources’ on the PARS website).

By visiting a vernal pool during a migration/breeding event, you have a unique opportunity to observe some very fascinating behavior. On such nights however, bear in mind that many amphibians may still be en route to the pools; be careful where you step when approaching or leaving the vicinity of a vernal pool. If possible, avoid entering a vernal pool to document animals. Smaller pools should never be entered, but you may need to enter larger pools to conduct a survey adequately. Often it is possible conduct an effective survey entirely from the shore with the aid of a long-handled dip-net. If frogs are present and calling they should be obvious, but some species call from beneath the water surface. Salamanders may be seen swimming in open water, but often they are concealed in the leaf litter on the bottom. Carefully and slowly run the tip of a branch, or handle of your net, through the material covering the bottom; if salamanders are present, they may flush out into the open.

If it is necessary to enter a vernal pool to obtain a voucher, move very slow and purposefully through the water to avoid stirring up mud and silt. Silt not only obscures your view in the water, but it can also have deleterious effects on amphibian eggs if they are present. Lift your feet as little as necessary when taking a step and move them slowly forward to allow any unseen amphibians adequate time to get out of the way. To capture an amphibian for a voucher photo, carefully and quickly plunge your net beneath the animal (or where it disappeared on the bottom), then quickly scoop upward to the surface. Examine the contents of the net, carefully removing leaves, twigs and other detritus a little at a time until the animal is visible (or until it is determined that you missed). Retain the animal only for as long as necessary to take proper voucher photos. Never handle amphibians if you have any type of chemicals (e.g. moisturizing lotions, etc.) on your hands, unless you are wearing hypoallergenic latex gloves.

Other Things to Look For
Red-spotted Newts utilize vernal pools, and are predators of other amphibian eggs at this time of year, so be sure to watch for them. Adult amphibians are not the only things to look for when surveying seasonal pools. Watch for egg clusters – not only to avoid damaging them, but also to photograph them for vouchering. Species can sometimes be determined and verified by their eggs. The most obvious will be Wood Frog eggs; grapefruit-sized clusters of gelatinous eggs floating on the surface. Similar-looking, but smaller clusters of mole salamander eggs will be attached to branches or other objects below the surface. Toad eggs occur in long gelatinous strands. The eggs of chorus frog species will be the most difficult to detect, due to the small size of the eggs and clusters. Spring Peepers tend to lay individual eggs on the bottom of shallow water adjacent the shoreline. Our other chorus frog species lay small clusters beneath the surface attached to vegetation, twigs, etc.

Also watch for small, white, gelatinous blobs littering the pool bottom. These are spermatophores, packets full of spermatozoa, which have been deposited by male Ambystomid salamanders. This occurs during a courtship ritual known as a liebesspiel (German for ‘love play’). A receptive female follows a male with her chin resting on his tail as he leads her through an elaborate series of movements on the pool bottom. During the ritual he deposits the spermatophores, and leads the female over them, stopping long enough for her to pick them up with her cloaca. Once she successfully picks one up, she becomes internally fertilized.

Be on the lookout for amphibian larvae. The larvae of the earliest breeding amphibians will not begin hatching out until late March or April. If you see salamander larvae earlier than this, you may have discovered a breeding site for Marbled Salamanders. This species breeds in autumn when the females lays their eggs in the damp leaf litter along the edges of seasonal pools and guard them until late-autumn rains flood the sites. In addition to timing, Marbled Salamander larvae can also be discerned from the larvae of other salamanders by a series of bright whitish to yellowish spots running laterally along each side.
The value and vulnerability of seasonal pools
Seasonal pools are critical to the breeding success of many amphibian species in the United States. While technically a type of wetland, seasonal pools unfortunately do not enjoy the protection of federal laws designed to reduce the catastrophic loss of our country’s wetlands, and many continue to be lost to various development projects. Fortunately, some states have recognized the ecological values of these ‘temporary’ wetlands, and have enacted seasonal pool certification programs under which certified pools gain legal protection. To date, Pennsylvania has no certification program, and many of its remaining seasonal pools are vulnerable. Be sure to record the coordinates of any seasonal pools you discover, or already know of, in the event that a certification program is initiated in Pennsylvania. Avoid sharing locality information as much as possible. One person, or a small group of people, is more than adequate to survey a seasonal pool. Avoid bringing other folks to pools you discover – the less these important breeding sites are impacted, the healthier they will remain.

On your surveys during the summer months, watch for potential seasonal pool sites to visit next winter; low-lying patches of forest with compacted leaves and mud, with an absence of extensive vegetation.

Wood Frogs eggs (left photo) occur in large clusters which float at the pool surface. The eggs of Spotted Salamanders (right photo) and other mole salamanders are generally submerged, being attached to branches or other objects below the surface.
Good Field Protocol

Each issue of the PARS newsletter will highlight a different form of proper field protocol that PARS volunteers are urged to adhere to while surveying in the field. Following these protocols will help insure minimum impact to the environment and the animals we are seeking to document.

Watch Your Step!

Early spring is a time of amphibian migration and we are all eager to head out to promising locations. At productive breeding sites, these critters may literally be underfoot everywhere at this time of year. When surveying, please be aware that many amphibians may have sought refuge under small objects which may not afford adequate protection should they be stepped on. This is particularly true of woodland species. Small pieces of bark, leaf clusters, and other delicate objects are commonly used as temporary daytime refugia by woodland salamanders and frogs. Some species are cryptically colored and may go unnoticed even when out in the open. Move slowly and purposefully when walking through herp habitat in early spring – not only will you be less likely to unintentionally trample specimens, you are also more likely to observe more.
Most Significant Finds

The PARS team considers ALL herp species documented during cold winter months to be significant. Hats off to the hearty volunteers who documented species during December, & January of 2013, and February 2014

Kenneth Anderson, II - Allegheny Mountain Dusky Salamander, Northern Spring Salamander, Green Frog, Eastern Ratsnake
Aaron Bierly - Northern Spring Salamander, Northern Dusky Salamander, Eastern Red-backed Salamander, Northern Brownsnake, Four-toed Salamander
Stan Boder - Wood Turtle
Darnell Brister - Eastern Gartersnake
Jacob Cramer - Allegheny Mountain Dusky Salamander, Eastern Red-backed Salamander
Ethan Eckert - Red-spotted Newt
Sebastian Harris - Eastern Red-backed Salamander, Northern Dusky Salamander, Northern Spring Salamander, Pickerel Frog, Northern Two-lined Salamander
Bob Ferguson - Red-eared Slider, Northern Two-lined Salamander, Eastern Gartersnake, Long-tailed Salamander, Eastern Red-backed Salamander, Northern Red Salamander, Green Frog
JD Hartzell - Northern Two-lined Salamander, Northern Dusky Salamander, Eastern Red-backed Salamander
Brandon Hunsberger - Eastern Red-backed Salamander
Mark Lethaby - Eastern Musk Turtle (shell)
Kyle Loucks - Northern Two-lined Salamander, Northern Dusky Salamander, Northern Red Salamander, Eastern Red-backed Salamander, Spring Peeper, Green Frog
Scott Martin - Eastern Ratsnake, Northern Dusky Salamander, Red-spotted Newt, Eastern Red-backed Salamander, Northern Red Salamander, Northern Two-lined Salamander, Eastern Box Turtle (shell), Pickerel Frog, Snapping Turtle, Green Frog
Matthew Middleton - Red-spotted Newt
Ed Patterson - Valley & Ridge Salamander, Four-toed Salamander, Eastern red-backed Salamander, Green Frog, Northern Red Salamander, Northern Two-lined Salamander, Seal Salamander, Allegheny Mountain Dusky Salamander, Northern Dusky Salamander, Northern Ring-necked Snake
Duane Stafford - Northern Spring Salamanders, Northern Dusky Salamander, Pickerel Frog, Allegheny Mountain Dusky Salamander, Green Frog
Nick Wachter - Northern Dusky Salamander

Winter Wonders Club

PARS members who made the most unusual documentations for winter months in 2013-2014:

Aaron Bierly - Four-toed Salamander, Northern Brownsnake
Scott Martin - Eastern Ratsnake
Stan Boder - Wood Turtle
Ed Patterson - Valley & Ridge Salamander, Four-toed Salamander, Seal Salamander, Northern Ring-necked Snake

The Fantastive Five

PARS members who have logged the most records since the launch of the PARS project on June 1, 2013 through February 28, 2014:

Ken Anderson ------------------- 617 Record
Brandon Hunsberger --------------- 450 Records
Scott Martin ---------------------- 372 Records
Ed Patterson --------------------- 310 Records
Bob Ferguson --------------------- 295 Records
Ever since I was a child, when my father gave me an appreciation for the value of snakes around the farm and his stern warning not to kill snakes, I have attempted to capture every snake I have observed. My younger brother and I would go on extended hikes in the summer to flip boards and tin around the countryside to count how many snakes we could find that day. I remember a particular large black rat snake who developed a passion for our pet duck’s eggs, I caught him in the act with one swallowed and one half way down his mouth and put him in a bucket covered with a flagstone in the shade to show my father. I did not think about the movement of the sun during the day, and when I went to show my dad when he got home from work, the snake had overheated in the sun. I was very disappointed.

My professional life as a field biologist has often resulted in snake observations and my attempts at capture (usually successful) to the merriment of my coworkers. Once, while surveying wetlands in Swatara State Park, Lebanon County I heard birds mobbing something in the distance. Usually when many species of birds are attacking a predator, it is a hawk or crow which feed on nestlings; however, this sounded low in the brush and I thought of a snake. I raced through the brush to find a black rat snake in the bushes searching for a bird’s nest; I grabbed his tail as he attempted an escape. I showed the snake to my coworker about a hundred feet away and then released it. In a few minutes, the birds again were screaming at the snake that was back at the nest getting his lunch.

During field investigations (wildlife, botanical, wetlands, etc.), I keep an eye open for herps and flip likely hiding cover to discover what may be underneath. During my travels, I often take a few minutes on public lands throughout the state (State Parks, Game Lands, State Forests, PA Fish & Boat Commission lands, county and local parks, etc.) to make some quick searches for herps; by surveying these public lands, I think that much of the state’s herp wildlife extent can be determined. I believe that evidence of herps can be found any time of year if a little effort and thought is taken. A GPS-enabled camera enables the instant collection of coordinates, time, date, and voucher information. The PAHERP website is very user-friendly and makes uploading observations very painless.

I enjoy the effort and success of discovery. My favorite herp is usually the one I have just discovered; however, nothing beats the jolt of adrenaline of a timber rattlesnake, copperhead observation, or the thrill of observing a bog turtle. Any snake observation and capture gives me a buzz; however, the observation of a black racer often ends in disappointment; the second of hesitation between species identification and the decision to attempt capture is usually unsuccessful due to their unbelievable speed.

I believe that the Pennsylvania Amphibian and Reptile Project is an extremely valuable tool to bring amateurs, volunteers, professional biologists, and state and federal resource personnel together to provide real-time information regarding herp population shifts and range across the state. The Atlas, like E-bird and similar online databases, can greatly exceed the limited resources and corresponding efforts possible by the resource agencies and gives ownership to citizens across the state.
On February 3 of this year Pennsylvania lost one of its most beloved herpetologists, Tom Diez. As a boy Tom was nicknamed ‘The Hawk’ for his ability to spot wild animals, and growing up in Western Pennsylvania he eagerly learned about the various types of our native wildlife. He went on to become a well-rounded and respected naturalist. A life-long student of biology and zoology, Mr. Diez built a career as a self-employed wildlife photographer and videographer, traveling the world in pursuit of his subjects. His global adventures sometimes turned into ‘misadventures’; he survived more than one rattlesnake bite, being kidnapped in Kenya, and being stranded by a storm in the Alaskan wilderness for three weeks, living off crabs captured with an onion bag. Mr. Diez eventually produced three outstanding DVDs on the amphibians and reptiles of Pennsylvania and the northeastern U.S. He was also a noteworthy wildlife painter, adept at capturing the spark of the natural moment in his works.

Through the years Mr. Diez was an ongoing advisor to the Pennsylvania Fish & Boat Commission, and has made many important contributions to our understanding of Pennsylvania’s herpetological distributions. However, he is perhaps best remembered as a caring and creative educator who inspired generations of Pennsylvania students and teachers with his eager sharing of his vast knowledge of the natural world and his fascinating descriptions of his global wilderness adventures. Tom is well known to Pennsylvania’s education system; for many, many years he conducted countless educational programs in classrooms and at school wildlife assemblies. He made learning exciting and is described by those who attended his presentations with words like ‘awesome’ and ‘talented’. He narrated his films with a mesmerizing and soothing ‘golden voice’ which remained on cue as he spoke with his back turned to the film screen.

Tom was a gentle man whose patience, kindness, and talent for infusing a sense of humor into his programs quickly won over all who attended, and who opened many eyes to the importance of responsible environmental stewardship. Dearly loved by his family, friends and neighbors, Mr. Diez is remembered by those who knew him as kind, thoughtful and a true gentleman who always had a story to tell. His legacy to Pennsylvania herpetology includes a wealth of data, outstanding photographic documentation of the Commonwealth’s species, and the enrichment our understanding of some of Pennsylvania’s most elusive species. He will be deeply missed by those who knew him, and his legacy will continue to influence many future generations of Pennsylvania herpetologists.
Species Spotlight

Mountain Chorus Frog

*Pseudacris brachyphona*

**Range & Habitat:** The Mountain Chorus Frog is a terrestrial upland species which is not associated with water except when breeding. They are denizens of the forest floor where they forage for small invertebrates. In recent times this species has only been documented in Fayette and Washington Counties in Pennsylvania. Historical records also exist for the following counties: Allegheny, Beaver, Clearfield, Cumberland, Greene, Indiana, Jefferson, and Westmoreland.

**Timing of Search:** In Pennsylvania. Mountain Chorus Frogs emerge from hibernation in late March and breeding commences in early April and may last until mid-May. Listen for the raspy "wreek, wreek, wreek" notes of calling males, with an individual repeating the note in rapid succession for 15-20 second intervals. At the conclusion of breeding Mountain Chorus Frogs may be found under cover objects on the forest floor, or may be observed actively moving about in this habitat after rain events. Terrestrial movements increase again in autumn when they enter hibernation.

Mountain Chorus Frogs are variable in appearance, but typically have dorsal markings shaped roughly like a pair of inverted parenthesis which may or may not touch in the middle of the back. A triangular spot is usually located on the head between the eyes. The venter is immaculate with a coarse, granular texture.

Mountain Chorus Frogs utilize small, shallow temporary pools in or adjacent woodlands for breeding. This includes flooded tire ruts in backcountry roads (above). Eggs are laid in small clusters of 10-50 eggs, attached to submerged vegetation. (lower right). As with many frog species, males have a dark throat due to the presence of a vocal sac (top right).

All photos by Stephen Leitkam
NAME THAT HERP:
Going Through Some Changes

Here are a few photos depicting either larval or metamorphic phases of some Pennsylvania salamanders. See if you can correctly identify them.

Continues on next 3 pages ~ Answers on page 19

Photo: John Styner

A.

B.

C.

Photo: Marlin Corn

Photo: Jason Poston
NAME THAT HERP:
Going Through Some Changes

D. [Image of a dark-colored newt on a hand]
Photo: Stephen Staedtler

E. [Image of a brown newt on a rock]
Photo: Jason Poston

F. [Image of a yellow newt]
Photo: Andrew Hoffman
NAME THAT HERP:

Going Through Some Changes

G.

H.

I.

Photo: Jason Poston

Photo: Marlin Corn

Photo: Brandon Hunsberger
Pseudacris brachyphona, P. feriarum, P. kalmi & P. triseriata
A.K.A. Mountain Chorus Frog, Upland Chorus Frog, New Jersey Chorus Frog & Western Chorus Frog
These amphibians have been sighted very rarely in recent years.
Areas most recently seen:
Pseudacris brachyphona – Southwestern Pennsylvania
Pseudacris feriarum – North-Central to South-Central and Southeastern Pennsylvania
Pseudacris kalmi – Southeastern Pennsylvania
Pseudacris triseriata – Western Pennsylvania
Reward: Accolades of the herping community
Sixteen individual snakes, represented by three different species (Timber Rattlesnake, Northern Watersnake and Eastern Gartersnake) were counted in this photo by the editors. These have been outlined in bright colors. Can you find more snakes that we missed?
Contact & Resource Information

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Chris Urban, Chief of the Natural Diversity Section, Division of Environmental Services, Pennsylvania Fish & Boat Commission
Kathy Gipe, Herpetologist and Nongame Biologist, Natural Diversity Section, Pennsylvania Fish & Boat Commission

Recommended Web Sites:
The Mid-Atlantic Center for Herpetology and Conservation (MACHAC): www.machac.org
Society for the Study of Amphibians and Reptiles: www.ssarherps.org
Northeastern Partners in Amphibian and Reptile Conservation: www.northeasparc.org
Maryland Amphibian and Reptile Atlas: www.marylandnaturalist.org

Answers to ‘Name That Herp’ quiz on page 15-17:
A. Marbled Salamander (larva)
B. Northern Dusky Salamander (metamorph)
C. Northern Red Salamander (larva)
D. Jefferson Salamander (larva)
E. Long-tailed Salamander (metamorph)
F. Red-spotted Newt (larva)
G. Spotted Salamander (metamorph)
H. Northern Spring Salamander (larva)
I. Mudpuppy (larva)