What's Inside

1. Greeting
2. Project Updates
4. Spring Highlights
6. Observations from the Field
7. Ticks In The Field
9. The PARS Experience
13. Meet the Volunteers
15. Natural History Notes
20. Wanted Species
Greetings!

Summer 2015

This past June marked the second anniversary of the launch of the PARS project. While two years may not seem like a very long time, an incredible amount of effort by our volunteers has gone into this Citizen Science project, and much has been accomplished. Since June 1, 2013 PARS members have logged over 13,000 volunteer hours and have submitted an astounding 25,000 records. The vast majority of these records have been verified by the volunteer Verification Committee. PARS is a 10-year project, and if annual record submissions continue at the same average rate, we can expect at least 125,000 records to be submitted by the end of the project. However, the rate of record submission is continually increasing as our volunteer ranks grow (currently approaching 1,200 registered volunteers). If this trend continues, our final number of records should be much higher!

More importantly, volunteers are getting into the groove of focusing their search efforts using the quad/block approach, which has greatly increased geographical coverage, and the gaps are starting to fill in. In recent months, we have also witnessed a spike in volunteers taking on County Coordinator positions, which will augment efforts in those counties, some of which greatly need increased survey efforts. We still have a long way to go; but with the highly charged enthusiasm of our volunteers, we anticipate reaching our goal of documenting at least 10 species per block and 25 species per quad by the end of 2022.

Volunteers of the PARS project have already greatly enhanced our understanding of some of Pennsylvania's most elusive amphibians and reptiles. This knowledge will ultimately provide one of the most important tools Pennsylvania has in the preservation of our rare species. Volunteers are also helping to track the spread of invasive, non-native species, and incidences of herpetological diseases; all extremely important knowledge concerning the protection of native herp species. Volunteers have also documented several new exotic, non-native species never documented in Pennsylvania. Additionally, many volunteers have taken the initiative to inform and educate people they've met along the way, thus helping to dispel myths and foster an awareness of Pennsylvania's amphibians and reptiles. Ultimately, such efforts will profoundly influence the conservation of our herpetological resources.

The passion with which many volunteers approach the project is overwhelming, and some of Pennsylvania's most exciting recent herpetological events are due in large part to the efforts of these folks. Scores of new county records have been made, the existence of two new frog species in Pennsylvania (Cope's Gray Treefrog and Atlantic Coast Leopard Frog) have been confirmed, and a snake thought to have been extirpated, the Eastern Smooth Earthsnake, has been reconfirmed as an extant species. Moving ahead there will certainly be many, many more exciting moments. Those of us at MACHAC and the PFBC salute the accomplishments of the PARS volunteers and excitedly wait to see what the future brings.

Marlin Corn
PARS Statewide Coordinator
WEBSITE OVERHAUL

PARS IT specialist and webmaster guru Jason Poston has been working on upgrades to the website. Be prepared to see a new look to the site in the near future, with a cleaner, faster interface.

NEW COORDINATOR RECRUITS

During the past quarter we’ve had a spike in County Coordinator recruitment! Please welcome Andy Weber (Huntingdon County), Travis Russell (Blair County), Jason Beale (Centre County), Kurt Regester (Clarion County), Stacy Foster (Elk County), Don Bratz (Lycoming County), Mizuki Takahashi (Union County), Joe Conklin (Mifflin County), Kristi Sullivan (Susquehanna County), Jordan Allen (Tioga County) and J D Hartzell (Columbia County). It should be noted that David McNaughton has shifted from Columbia County and is now the Dauphin County Coordinator. If you are interested in any available county coordinator position please contact Marlin Corn: mcorn@machac.org.

NEW NEWSLETTER COLUMN

The current newsletter features a new column which focuses on the natural history aspects of amphibians and reptiles. If you would like to contribute an article to the PARS newsletter contact Marlin Corn: mcorn@machac.org.

PHOTO CONTEST PLANNED

The PARS team would like to start holding an annual photography contest. Details will be announced in the winter newsletter. For now we are interested in recruiting volunteers who would like to participate in the development and judging of the event. If you have experience with previous photography contests, or are a professional photographer, and are interested in volunteering, please contact Marlin Corn: mcorn@machac.org.
In the February 2015 newsletter we featured a map showing the current quad record status as of January 7, 2015. At that time there were still 182 quads without any amphibian or reptile records. Below is a map highlighting the quads which are still without records, eight months later; only 74 quads! This is a great example of how the volunteers are honing the quad/block approach to the PARS project. Looking at this map makes it easy to see some of the areas of Pennsylvania which are in most need of surveys. If you live near any of these quads, please consider visiting one the next time you plan to head into the field to survey. As we close out our empty quads we will start highlighting areas with weak block coverage. To assist in locating these quads on Google Earth, the names of these quads are listed below.

Blocks without records:
MARK YOUR CALENDAR!

Scheduled Herp-Blitz Field Trips:

Sept. 19 - Wyoming County  
Contact: Marlin Corn, mcorn@machac.org

Oct. 10 - Bedford County  
Contact: Marlin Corn, mcorn@machac.org

...Details to be announced...

PARS Informative Presentations & Volunteer Workshops:

Oct. 4, 11 A.M. (rain date Oct. 11) - Montgomery County
PARS Introductory Presentation - Jarrett Nature Center
411 Babylon Rd., Horsham, PA 19044 (adjacent to Simmons Elementary School).
Meet at modular classroom behind Simmons Elementary.
For details, contact: Jarrett Nature Center: 215-350-9573

More to be scheduled – stay tuned for details!
Find current events at  
http://paherpsurvey.org/news/events  
or on Facebook at  
http://facebook.com/paherpsurvey

PARS event at Lehigh Gap 8-22-15
Highlights of the 2015 Spring Season

Four records were received for Eastern Wormsnakes, with a potential county record from Juniata County. An eastern Hellbender was found in Clinton County, only the second record from this county since the launch of PARS. An Eastern Spadefoot was found in Centre County, only the second record for this species so far this year. An Eastern Hog-nosed Snake was found (unfortunately a DOR) in Union County; the first record in this county since 1926. A record for this species received from Northumberland County represents a county record. Two recording vouchers were made of Upland Chorus Frogs in Bedford County. A Queensnake was found in Bucks County; the first observation here since 1958. A Ribbonsnake found in Huntingdon County represents a county record, while another was the first specimen observed in Centre County since 1960. Other potential county records include Jefferson Salamander in Elk County, Spotted Salamander in Mifflin County, Northern Map Turtle in Berks, Bradford and Mifflin Counties, Eastern Box Turtle in Cambria and Clarion Counties, Snapping Turtle in Juniata County, Eastern Ratsnake in Monroe County and Eastern Musk Turtle in Montour County.
Observations from the Field

Summary of vouchered records received for April 2014 through June 2015:
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. Some records listed here have not yet passed through the verification process.

**Salamanders**
- Eastern Hellbender: 1
- Common Mudpuppy: 1
- Jefferson Salamander: 17
- Spotted Salamander: 291
- Marbled Salamander: 9
- Northern Dusky Salamander: 121
- Seal Salamander: 14
- Allegheny Mountain Dusky Salamander: 145
- Northern Two-lined Salamander: 127
- Long-tailed Salamander: 39
- Northern Spring Salamander: 84
- Four-toed Salamander: 46
- Red-spotted Newt: 289
- Eastern Red-backed Salamander: 320
- Slimy Salamander: 90
- Valley & Ridge Salamander: 23
- Wehrle’s Salamander: 55
- Northern Red Salamander: 74

**Frogs**
- Eastern Cricket Frog: 2
- Eastern American Toad: 601
- Fowler’s Toad: 15
- Cope’s Gray Treefrog: 6
- Gray Treefrog: 114
- Undetermined Gray Treefrog spp: 9
- American Bullfrog: 116
- Green Frog: 282
- Atlantic Coast Leopard Frog: 6
- Pickerel Frog: 127
- Northern Leopard Frog: 8
- Wood Frog: 285
- Mountain Chorus Frog: 1
- Spring Peeper: 459
- Eastern Spadefoot: 1

**Lizards**
- Northern Coal Skink: 5
- Common Five-lined Skink: 22
- Italian Wall Lizard*: 1
- Eastern Fence Lizard: 22

**Snakes**
- Northern Copperhead: 17
- Eastern Wormsnake: 4
- Northern Black Racer: 45
- Timber Rattlesnake: 113
- Northern Ring-necked Snake: 200
- Eastern Hog-nosed Snake: 27
- Eastern Milksnake: 78
- Northern Watersnake: 145
- Smooth Greensnake: 20
- Eastern Ratsnake: 115
- Queensnake: 12
- Eastern Massasauga Rattlesnake: 3
- Northern Brownsnake: 51
- Northern Red-bellied Snake: 76
- Shorthead Gartersnake: 22
- Eastern Gartersnake: 348
- Ribbonsnake: 20
- Mountain Earthsnake: 4

**Turtles**
- Eastern Spiny Softshell: 22
- Common Snapping Turtle: 173
- Painted Turtle spp.: 75
- Midland Painted Turtle: 34
- Eastern Painted Turtle: 88
- Spotted Turtle: 18
- Blanding’s Turtle: 1
- Wood Turtle: 137
- Bog Turtle: 3
- Northern Map Turtle: 31
- River Cooter*: 2
- Northern Red-bellied Cooter: 25
- Red-eared Slider*: 49
- Yellow-bellied Slider*: 2
- Eastern Musk Turtle: 17
- Eastern Box Turtle: 161

*introduced species
Tick-borne illness is a serious concern for herpers (and anyone else that spends any time outdoors), and it is the personal responsibility of each of us, as individuals, to take the necessary measures to minimize the risk of being bitten by a tick. When undiagnosed and/or not treated in a timely fashion, disease pathogens transmitted via a tick bite can result in life-long, debilitating illness and can even lead to death.

According to the Penn State College of Agricultural Sciences, more than 25 species of ticks have been identified in Pennsylvania. Of these, three species are of primary concern: the black-legged (or deer) tick (*Ixodes scapularis*), the American dog tick (*Dermacentor variabilis*), and the lone star tick (*Amblyomma americanum*).

Although Lyme disease is by far the most common disease transmitted by the deer tick, this species can also carry and transmit other pathogens that cause diseases, such as human babesiosis, anaplasmosis, and Powassan disease. While American dog ticks, which are one of the most widespread and commonly encountered ticks in PA, are not vectors of Lyme disease, they can transmit Rocky Mountain spotted fever and tularemia and can cause tick paralysis*. Lone star ticks, which are found primarily in the southern counties of PA, can vector tularemia, Rocky Mountain spotted fever, and cause tick paralysis. However, in PA, this tick is only known to transmit Rocky Mountain spotted fever.

According to the Centers for Disease Control and Prevention, Lyme disease is the most commonly reported vectorborne illness in the United States, and right now, in mid-summer, is when the number of human cases of Lyme disease peaks. This is most likely due to the high level of deer tick nymph activity, which begins to rise in spring, peaks mid-summer, and then drops off through the remainder of the summer season. These nymphs are responsible for most cases of Lyme disease in humans, in large part because of their small size (no bigger than a poppy seed), which makes them difficult to detect visually for removal, compared to the relatively larger adults of this species, which are easier to detect and remove.

**Tick Bite Prevention**

In tick bite prevention the goal is to eliminate, to the greatest extent possible, the possibility of receiving a tick bite. To achieve this, a number measures should be used in combination by any herper, who is serious about tick borne illness prevention.

**Behavior and Risk Reduction**

A legitimate question to ask oneself, when entering tick habitat, particularly if you’re not dressed appropriately for tick bite prevention (more about that later), would be: “Is it worth it, putting my health at risk, to get that herp record?” Regardless of the level of commitment we may have to ensuring the continued success of PARS, like any other undertaking that involves risk, there should be limits to the hazards to which we expose ourselves. I know for myself there are areas in Northeast PA (where I’ve done most of my herping), which I consider to be “no go” areas during certain times of the year. Because I’m aware of the particularly high numbers of deer ticks that exist at these locations, I make a deliberate decision to avoid them during tick seasons.

Other behavioral choices to reduce risk include walking in the middle of cleared trails and woodland roads to avoid the grassy and brushy edges where ticks will “quest” from, waiting for a potential host to walk by that they can latch onto with their raised, outstretched front legs (yes, the little buggers actually do this). When off trails, also consider avoiding, as much as you can, kneeling or sitting in grassy or brushy habitat that could support ticks.

**Treated Clothing**

One of the most important steps you can take in tick bite prevention is wearing permethrin-treated clothing and footwear. While commonly used DEET-containing sprays act to repel ticks, studies have shown that permethrins can actually kill ticks that come into contact with your treated clothing.

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* ...tips for improving field-herping skills*
While treating clothing yourself with commercially available permethrin products is one option, the disadvantage to this is that home-treated clothes will only retain their effectiveness through a relatively limited number of washings. Conversely, mailing out your clothes for treatment or buying already commercially treated clothing will help ensure the clothes you wear in the field will retain their effectiveness much longer (according to the EPA, as many as 70 washings). The company, Insect Shield, will treat clothing mailed to them for approximately $9.00 per item (see contact information below).

In addition, wearing light-colored clothing (e.g. khaki pants and light-colored socks) will enable you to more easily spot a tick that is crawling on you. Also, pants tucked into socks will help to prevent ticks from crawling up the inside of a pant leg and will keep them on the outside of your pants where you can see them for easier removal.

Tick Checks
Frequently checking yourself for ticks, both while in the field and when back at home, should be another tool in your tick bite prevention toolbox. If you are working with another herper, take turns checking each other to make the task more effective. Remember, during the spring and summer seasons, deer tick nymphs, the primary culprits you are looking for, are no bigger than a poppy seed and can easily be mistaken for a freckle on bare skin, so look closely and carefully. The back of the neck and around the ears are spots where ticks like to attach and are always good places to check.

When you return home, remove your clothing a.s.a.p. and take a shower or bath, which can help to dislodge any unattached ticks, and then conduct a full-body tick check. If your clothes will not be washed right away, run them through a hot clothes dryer for at least 10 minutes. This will help to desiccate and kill any ticks you missed on your clothing. Conversely, if your clothes get tossed into a damp hamper or pile of laundry, a tick can potentially survive in that humid environment and end up attached to a pet or a member of your household.

Tick Removal
When your best efforts to prevent a tick from becoming attached have failed and you need to remove an individual (because you can't make it to a doctor) that has latched on, avoid old remedies like using a hot match tip or spreading Vaseline on the tick. Also, be wary of “new techniques” you may come across on the Internet. Instead, using a pair of pointy tweezers, grab the tick as close as possible to where it is attached to your skin, and pull it out like a splinter. It is recommended that individuals go to a doctor to safely remove ticks, including mouth parts.

Save That Tick
Once an attached tick has been removed, save it in a zip lock bag or container. Holding onto the tick gives your physician the chance to see what species of tick bit you, as well as how long it may have been attached (depending on how engorged the tick is), both of which can be very helpful in deciding what, if any, course of treatment is needed. Also, the University of Rhode Island TERC maintains a list of labs that will test ticks to determine if they are carrying pathogenic organisms. Finding out if the tick that was attached to you carried any pathogens can provide potentially useful information for you and your physician.

*Tick paralysis is a rare disease thought to be caused by a toxin in tick saliva. The symptoms include acute, ascending, flaccid paralysis that is often confused with other neurologic disorders or diseases (e.g., Guillain-Barré syndrome or botulism). Within 24 hours of removing the tick, the paralysis typically subsides.

Resources for More Information
The University of Rhode Island Tick Encounter Resource Center (TERC): http://www.tickencounter.org/

Penn State College of Agricultural Sciences, Fact Sheet, “Four Common Ticks in Pennsylvania”: http://ento.psu.edu/extension/factsheets/ticks

Centers for Disease Control and Prevention: http://www.cdc.gov/ticks/

“Journey to Lumber City”

November 11, 2014 - 9:45 a.m.

When traveling from the west the sign designating the Lumber City limit is a distance from where houses are located, far enough that you wonder if anyone actually lives here and maybe Lumber City is just a ghost town.

The 2010 census lists the population as seventy-six people, in an area of 2.7 square miles. The borough ceased to be a separate municipality on January 6, 2014, when it became part of Ferguson Township, Clearfield County, Pennsylvania.

My visit to Lumber City, on this Veteran’s Day, was to seek out the Valley & Ridge Salamander. The primary range of the species is to the east and south in the Valley & Ridge Province of Pennsylvania but, “scattered records for the species exist west of the Allegheny Front. C.J. McCoy of Carnegie Museum suggested that the species penetrated the Allegheny Front by means of the West Branch of the Susquehanna River and subsequently moved south and west from there.” (Hulse, Pennsylvania Amphibians & Reptiles, 2001)

Historical records, from the 1960s, exist for Valley & Ridge Salamanders from a hillside overlooking the West Branch in Lumber City. The predicted high for this November day was 68 degrees, with a major drop in temperatures to follow over the coming days. So, if nothing else, this would be a good day to enjoy what might be the last herping trip of the season.

An early photo of Lumber City, Pennsylvania on the West Branch of the Susquehanna River. Photo by Mary Graham McCartt

“Lumber City is a pleasantly situated Borough on the north side of the West Branch River. It contains a number of fine residences of brick and frame material. On the south side of the river is a steep bluff, or mountain, several hundred feet high; but the beauty of its slope is somewhat marred by the cutting out of its best timber.

On the north and to the east of the town is a gradual ascent leading back to and approaching the famous Grampian Hills. Fine farms surround the borough on all sides, save the south.”
From: Clearfield County, Pennsylvania and Representative Citizens by: Roland D. Swoope, Jr. 1911

This early twentieth century description of Lumber City, Pennsylvania is still accurate. Although small in population the Borough is geographically large.

“When the borough was laid out, the school district from which it was taken was divided, leaving a considerable area without any established school district. In order to remedy this the borough limits were extended, so that it is now very large in area, and includes, in whole or in part, several farms in the neighborhood.” (Swoope).
Route 969 courses along the West Branch just upstream of Curwensville. High on a bluff overlooking the highway and the river is where I was headed. The bluff contained mature, mixed hardwoods and a scattering of hemlocks. Not far on my hike up the bluff I entered a hemlock forest area and turned over a large flat rock.

Wehrle's Salamander, Lumber City, PA

Underneath was a large salamander with a long tail that, at first, I thought was a Valley & Ridge Salamander. Even after taking a few photos I still thought I had found a Valley & Ridge Salamander. After moving the salamander into the sunlight to take some better photos I discovered the unmistakable pattern of a Wehrle's Salamander, a nice unexpected discovery. One of the joys of seeking out salamanders is that when you lift a rock you never know for sure what will lie underneath.

I continued searching the bluff without any luck finding a Valley & Ridge Salamander. As I headed back to my car I decided I would give the adjoining hill a search. The hill had been timbered several years ago and, although there were some mature trees in the woodlot, most trees here were small saplings. The hillside did have scattered flat rocks, a promising sign for Valley & Ridge Salamander habitat.

Although Valley & Ridge Salamanders can be abundant in an area, in general, there are never many on the surface at any one time, so it is not unusual to turn over many rocks before finding even one. As I worked my way to the top of the ridge two nice adults were eventually uncovered along with several Eastern Red-backed Salamanders.

I took a moment to admire this Valley & Ridge Salamander, to enjoy the view overlooking the river and to think about how much this valley had changed over the years. From the late 1800s to the early 1900s the West Branch was used by rafts men to float large numbers of hemlock and white pine logs downstream from the Cherry Tree and Mahaffey area. Lumber City was an important location during the heyday of the logging era.

Three-mile log jam near Lumber City. Photo by Ellis Michaels

Long before the rafts men a different migration took place here. Could it be that in ancient times some of the ancestors of these very Valley & Ridge Salamanders migrated westward into Indiana County, my home.

How long ago? I did not know for sure. But somehow, from the logging era to today the species has managed to survive. A hopeful thought on a sunny day in November 2014.

A few days after my trip to Lumber City the anticipated cold weather did arrive, along with the first light snow of the season. The Valley & Ridge Salamanders will move deeper underground, safe from the cold weather and winter winds that will blow through this ancient river valley.

Next spring, as the first warming rays of sunshine land on this hillside, the adult Valley & Ridge Salamanders and their offspring will return to the surface once again to continue their life’s journey in the valley of the West Branch.

Ed Patterson
No Buckets Please

Many herp enthusiasts admirably move amphibians across roads during migrations and other rain events to reduce mortality. In the case of PARS volunteers, simultaneously documenting these species and their migratory movements provides a wealth of data for the project. When participating in these types of surveys, in general, participants should refrain from collecting specimens in containers and then dumping them all at once in the same location. This practice subjects the specimens to additional and unnecessary stress, and when dumped at a distance from where collected, many will try to navigate back to their original routes, subjecting them to lengthier migration travel and possibly additional road-crossing hazards. Concentrating numerous species in the same container may also exacerbate the spread of amphibian diseases. Photos of the interior of a bucket full of amphibians often make poor vouchers and makes verification more difficult. In certain circumstances, (e.g. where high numbers of amphibians are crossing a road with heavy traffic) using a container may be advisable for safety reasons. In these cases, transport the lowest number of amphibians the shortest distance possible, and use a decontaminated bucket for each trip across the road. However, whenever possible, simply move each animal individually to the side of the road it is heading. Additionally, state laws regarding collection of animals and numbers may be broken when herps are collected in a bucket.

....and Etiquette
PARS LEAGUE OF EXCEPTIONAL HERPERS

The column dedicated to recognition of noteworthy herping achievements and our wonderful volunteers. Recognitions based on highest number of observations, most significant observations, and other distinguished efforts.

Congratulations to the volunteers who documented some of Pennsylvania’s rare and difficult-to-find herp species during April, May & June 2015:

The Fantastic Five

The 100 Club

Block Masters

Significant Finds

Congratulations to the volunteers who documented some of Pennsylvania’s rare and difficult-to-find herp species during April, May & June 2015:

Jonathan Adamski: Ribbonsnake
Jordan Allen: Jefferson Salamander, Wehrle's Salamander, Smooth Greensnake
Kenneth Anderson II: Northern Leopard Frog, Eastern Massasauga Rattlesnake, Ribbonsnake, Smooth Greensnake, Queensnake, Eastern Fence Lizard
Scott Angus: Northern Copperhead, Eastern Hog-nosed Snake
Tom Ashford: Spotted Turtle, Northern Redbelly Cooter
Brian Benner: Northern Copperhead, Eastern Fence Lizard
Chris Bortz: Seal Salamander, Eastern Hog-nosed Snake
Melanie Bowman: Marbled Salamander
Bernard Brown: Northern Redbelly Cooter, Ribbonsnake, Valley & Ridge Salamander
Josh Brown: Eastern Wormsnake
Jacob Cramer: Wehrle's Salamander, Spotted Turtle, Queensnake
Jay Drasher: Spotted Turtle, Northern Redbelly Cooter, Eastern Fence Lizard
Brandi Eberlin: Jefferson Salamander
Damian Fallon: Northern Redbelly Cooter
Kyle Fawcett: Eastern Hog-nosed Snake, Queensnake
Bob Ferguson: Atlantic Coast Leopard Frog, Northern Redbelly Cooter
Dave Fitzpatrick: Atlantic Coast Leopard Frog
Stacy Foster: Jefferson Salamander
Lee Garner: Eastern Hog-nosed Snake
Matt Hampel: Eastern Hog-nosed Snake, Queensnake
Sebastian Harris: Spotted Turtle, Eastern Hog-nosed Snake, Northern Copperhead, Smooth Greensnake, Queensnake
Dave Hughes: Eastern Hog-nosed Snake, Northern Copperhead
Brandon Hunsberger: Spotted Turtle, Common Mudpuppy, Smooth Greensnake, Ribbonsnake, Mountain Earthsnake
Jim Kempher: Coal Skink, Mountain Earthsnake
Virginia Knapp: Smooth Greensnake, Wehrle's Salamander
Mark Lethaby: Northern Leopard Frog, Smooth Greensnake
Kyle Loucks: Eastern Cricket Frog, Atlantic Coast Leopard Frog, Northern Redbelly Cooter
Gerard Madden: Eastern Hog-nosed Snake
Scott Martin: Eastern Wormsnake, Eastern Hog-nosed Snake, Ribbonsnake
Ed Patterson: Wehrle's Salamander, Valley and Ridge Salamander, Ribbonsnake
Rebecca Picone: Spotted Turtle, Ribbonsnake
Thomas Reidenbaugh: Ribbonsnake, Eastern Hog-nosed Snake
Jordan Shume: Cope's Gray Treefrog
Travis Russell: Spotted Turtle, Valley and Ridge Salamander, Eastern Fence Lizard
Aaron Semasko: Seal Salamander, Valley and Ridge Salamander, Wehrle's Salamander
Stephen Shaffer: Eastern Wormsnake
Elizabeth Sharpe: Ribbonsnake
Toren Shirk: Ribbonsnake

PARS volunteers who currently hold the top five slots for the most quad-blocks surveyed since the project launch July 18, 2015 snapshot:

Ken Anderson: 305 blocks
Kyle Loucks: 214 blocks
Scott Martin: 186 blocks
Ed Patterson: 127 blocks
Stephen Staedtler: 125 blocks

PARS volunteers who currently hold the top five slots for the most records since the launch of the PAR S project on June 1, 2013 through November 30, 2014:

Ken Anderson: 1,724 Records
Kyle Loucks: 1,644 Records
Brandon Hunsberger: 1,356 Records
Ed Patterson: 1,255 Records
Bob Ferguson: 1,152 Records

PARS volunteers who made over 100 documentations during April, May or June of 2015:

Ken Anderson: 183 records in April
--------------124 records in May
--------------125 records in June
Kyle Loucks: 163 records in June
Scott Martin: 141 records in April
Brandon Hunsberger: 141 records in April
--------------130 records in May
--------------142 records in June
Bob Ferguson: 158 records in May
Nate Nazdrowicz: 141 records in April
Ed Patterson: 118 records in April
--------------105 records in May
--------------200 records in May

Duane Stafford: 224 records in April
--------------134 records in May
--------------200 records in May

PARS volunteers who have logged the most records since the launch of the PAR S project on June 1, 2013 through November 30, 2014:

Ken Anderson: 1,724 Records
Duane Stafford: 1,644 Records
Brandon Hunsberger: 1,356 Records
Ed Patterson: 1,255 Records
Bob Ferguson: 1,152 Records
I get asked all the time, “Why do you like snakes?” That question is almost always followed by the raised eyebrows and furrowed nose. The answer is simple; everyone else hates them, so I find them intriguing. I was born and raised in rural Elk County near my grandparents’ farm. Growing up in that location got me interested and passionate about the outdoors and wildlife for as long as I can remember. However, during middle and high school, being the girl that liked bugs and nature was looked at as weird. So for a long time, I strayed from what was most fascinating to me.

I graduated in 2011 from Penn State DuBois with a B.S. in Wildlife Technology. That's where my curiosity was reawakened. I met people that were just like me, and I developed a particular interest in the timber rattlesnake. I spent countless hours researching this species and learning all I could about them.

I reside in an area that has an abundant population, so I easily was able to find rattlesnakes and gain a first-hand perspective on them. During the summer of 2012, I acquired a job as a technician at Wildlife Specialists, LLC. I worked alongside the head herpetologist, while we identified potential timber rattlesnake habitat for a proposed pipeline in northeastern PA and southern NY. I picked his brain with numerous questions, and I now feel I can tell a person almost anything about the timber rattlesnake, a fascinating and unjustly feared creature. It was also during this time that I realized there was a whole community of people that shared my interest in herps. I wasn't a weirdo after all! I also developed a hobby in photography over the years, which led to an overall interest in wanting to learn about the entire natural world including spiders and insects, plants, and fungi.

One of the most rewarding experiences for me are to find areas on google earth that look like good locations for timbers and then go there and find snakes! The locations are not always unknown places, but they are areas that I personally have not discovered. I keep notes of every rattler I find and try to photograph every single one as well. Close friends would call me obsessed with looking for and talking about these snakes. I have two daughters that I made sure to impart on them at the youngest age possible to not be terrified of snakes or other creatures that people think of as scary. I feel educating our youth is the first step in making sure future generations develop a compassion for all wildlife and have a hand in preserving and conserving the environment. This is why the PARS project is a valuable resource for researchers and for the general public to be made aware of. If society can become involved directly, then much more likely they will gain a better understanding of amphibians and reptiles, which are essential organisms in the ecosystem.

I recently took on the role of Elk County Coordinator because I want to have a bigger impact in educating the general public and to contributing to such a vital project. I also worked the last three years towards becoming a certified timber rattlesnake construction monitor; a goal I accomplished this year. I plan on establishing my own business in removing and relocating timber rattlesnakes for landowners, since I live in an area with lots of these snakes. With this, I hope to reach out to those that share their homes with this stunning animal and educate them on the importance of letting not just rattlesnakes, but all snakes, live and do their part in the environment. I have had the privilege of meeting many fellow herpers and hope to meet lots more of you! I think together we can make a change in the minds of those that don't see the beauty in our scaly and slimy friends the way that we do.

Stacy Foster
On July 6th, 1993, the untimely passing of C.J. McCoy saddened the herpetological community of Pennsylvania. Many current herpetologists considered him a mentor, and though many others never met him, his work, including his 1982 publication ‘Amphibians and Reptiles in Pennsylvania’, was familiar to many.

C.J. ‘Jack’ McCoy was born in Texas and developed a love of nature while spending much of his childhood in the outdoors of the American West; however, it was a high school science teacher who introduced him to herpetology and helped steer his interest in natural history. After high school, he enrolled at Oklahoma State University and upon completing a B.S. degree in wildlife ecology in 1957, he enrolled in a master’s program with his thesis focusing on the systematics and variation of Eastern Fence Lizards (Sceloporus undulates) in Oklahoma. Upon completion of his master's degree he moved to Colorado and enrolled in a Ph.D. program at the University of Colorado studying the natural history of the Western Whiptail (Cnemidophorus tigris septentrionalis). McCoy's experiences at University of Colorado had a profound effect on his interest in museum collections, which eventually led to being hired by M. Graham Netting for the position of Research Assistant at the Carnegie Museum of Natural History in 1964. Upon completion of his dissertation the following year, he was promoted to Assistant Curator, and was again promoted to Curator in 1972.

McCoy had a significant impact on the Carnegie Museum of Natural History. With his extensive background in collection management, he immediately set about expanding and meticulously improving the condition of the museum's collections. He was a prodigious field collector and contributed many of his own specimens; but he also acquired thousands through exchanges with his numerous friends and colleagues. By the time of his passing, the approximately 75,000 specimen collection, which existed in 1964, had grown to nearly 180,000 specimens, and he is responsible for Carnegie's possession of one of the largest turtle collections in North America. He was a tireless researcher, and his pursuits led to numerous trips in Algeria, Argentina, Belize, Brazil, Mexico, Paraguay and Uruguay. Though the majority of the copious number of papers he authored focused on herpetology, he also published on mammals, fish, mollusks, systematics, ecology, behavior, and zoogeography. While most of his writing was scientific in nature, he also seemed to enjoy writing creatively and is purported to have sent many poems to friends.

Jack McCoy’s influence on herpetology was also felt through his participation in many professional societies, which included serving as Governor of the American Society of Ichthyologists and Herpetologists (1967- 1972); President of the Society for the Study of Amphibians and Reptiles (1972) and Vice-President (1984-1985); and President of the Herpetologists’ League (1986-1987). He served as editor for numerous herpetological publications and claimed to have “a built-in bullshit detector”, often returning manuscripts greatly marked up with red ink, but also greatly improved.

McCoy’s influences are particularly tangible to those of us involved in the PARS project. His ‘Amphibians and Reptiles in Pennsylvania’ publication was essentially the first comprehensive atlas project for our state, and it laid the foundation for subsequent atlas projects to build upon. Though the publication bears his name, he duly notes in the publication's preface that the project had been initiated by M. Graham Netting, who later assigned its completion to McCoy. He also wisely noted that the project ‘is neither definitive nor an end point” and fully acknowledged that much remains to be done. Similarly, the PARS project will not be quintessential when it is completed, but it began by the tremendous advantage provided by the accomplishments of C. J. McCoy.

- Carnegie Museum of Natural History; www.carnegiemnh.org: Dept. of Herpetology, Staff & Research; Former Curators
- Photo of McCoy: CMNH Dept. of Herpetology archives.
Snakes use several distinct forms of locomotion and can even bust a move using multiple forms in a combination effort. The type of locomotion has, of course, peculiar names. The following is a summary of locomotion forms used by snakes: each name is followed by a brief description.

**Peristalsis:** Used by the Mexican mole lizard (*Bipes biporus*) for locomotion and also by most earthworms. I challenge you to google *biporus*. Although not strictly locomotion, many snakes, in the act of swallowing move food through the esophagus with a rhythmic unidirectional wave of contractions, working to force food to the stomach. Peristaltic pumps mechanically propel fluid along tubing in isolation from machine parts in this fashion as well.

**Rectilinear:** Sometimes called rectilinear progression (RP), this is a motion along a straight line, usually an extremely slow and almost noiseless movement used by some snakes while stalking prey. The movement relies on two opposing muscles, the coscutaneous inferior and the superior, both connected to ribs and the skin and used bilaterally. The ribs are motionless while the muscles articulate the body, skin and scales to propel the snake. The coscutaneous superior lifts a section of the belly off the ground and moves it forward, while the coscutaneous inferior pulls back against the scales on the ground resulting in continuous motion.

**Undulatory:** Sometimes called horizontal undulatory progression (HUP), the motion is in a wave-like pattern of the entire body from head to tail, when most of the body is in contact with the ground or water. This form of locomotion is exhibited by many snakes, salamanders, and even some fish (lamprey). Alternating sideways, rib to skin muscles use both thrust and drag forces to propel the animal forward. Some desert snakes actually use a form of HUP to sand swim under the surface.

**Sidewinding:** This is motion in a sine-wave pattern, where portions of the snake's body are in static (as opposed to sliding) contact with the surface. The head is "thrown" forward and the body follows, being lifted from the prior position to lie on the ground. Progress is at an angle and the tracks appear as a series of parallel straight lines or repeated j-shapes. Interestingly enough, the scales can be seen in the tracks, proving that the region of belly scales in contact with sand is indeed static. The Timber Rattlers cousin *Crotalus ceraster* is the namesake and poster child for this move!

**Concertina:** This is a slow motion that consists of gripping or anchoring with portions of the body while pulling/pushing other sections in the direction of movement. Two forms of concertina may be observed. During tunnel concertina locomotion, the snake anchors itself by flexing its body in a series on alternating bends which press against the walls of the tunnel. This is the movement that brings cobras out of the basket. Arboreal concertina locomotion is employed on bare branches of trees, when secondary branches are not available. The snake extends the head forward; but as it does so, the body follows a constant path (like lateral undulation, but unlike tunnel concertina locomotion). It then grips and pulls the body forward, again demonstrating the 'path following' characteristic. Unlike tunnel concertina locomotion, this mode avoids any obstacle which falls between the bends of the snake's body. Black Rat snakes are masters of this motion.

**Slide-pushing:** This is a form of movement that requires vigorous undulations by snakes along smooth surfaces, which creates sliding friction to propel the snake forward. Sliding friction is similar to that of hockey skating mechanics used by humans in play. You may have observed this motion in a captive snake placed on a smooth floor surface.

**Ouroboros Roll:** The Hoop Snake of Pecos Bill folklore would bite its tail and roll after its prey. Many gestating snakes assume this position while at rest but no snakes actually use it for locomotion.

With our volunteers’ improved understanding of snake locomotion, we should see reporting rates increase. Happy herping this summer.
“Slither Me Not; its locomotion baby.”

An Eastern Hog-nosed Snake demonstrating Peristalsis on an Eastern American Toad.
Photo: Brandon Ruhe

A Northern Watersnake in undulatory mode.
Photo: Marlin Corn

A Sidewinder (top photo), the best known species for employing sidewinding locomotion (resulting tracks shown in bottom photo). Photos: Jack Goldfarb

A Queensnake about to employ a slide-push as the photographer moves closer.
Photo Jason Poston

A drawing of a hoosnake using Ouroboros Roll
By: Linda Anderson

An Eastern Ratsnake employing arboreal concertina to ascend a tree trunk.
Photo: Marlin Corn
Species Spotlight
Northern Coal Skink
*Plestiodon anthracinus*

Range & Habitat: The poorly understood range of Coal Skinks largely coincides the coal producing regions of North America, hence the common and taxonomic species names. In Pennsylvania there are historical records for Northern Coal Skinks from only fourteen counties: Cameron, Centre, Clearfield, Cumberland, Elk, Forest, Potter, Somerset, Lycoming, Tioga, Union, Venango and Warren; since the launch of PARS only eight counties have been reconfirmed. Northern Coal Skinks prefer sloped, moist woods with ample leaf litter, loose rocks or other cover objects; also found near springs and rocky bluffs overlooking creek valleys.

Search Strategy: Like all skinks, this species is diurnal but can often be found taking refuge under cover objects during daylight hours. When searching for lizards, always look ahead for movements; active lizards usually see you before you see them. Power line swaths are worth investigating for this species. Like all of our lizards, the warmer the weather, the more active Northern Coal Skinks will be.

The Coal Skink is an uncommon lizard species in Pennsylvania, with a broad, dark stripe (more than two scale rows wide) separating two light stripes on either side makes this species easily recognizable. Like other skink species, juveniles have bright blue tails and the head of males takes on a reddish hue during the breeding season.
A couple of Pennsylvania snake species are normally colored black in the adult phase, and are often referred to as ‘blacksnakes’ by many people. However, there are a few other snake species which often occur in a black, or near-black phase. Additionally, melanistic individuals of other species are occasionally found. Can you name the ‘blacksnake’ species from the cropped photos below?

A.  
B.  
C.  
D.  
E.  
F.
NAME THAT HERP:
Blacksnake Answers

A. Eastern Ratsnake
   Photo: M. Corn

B. Eastern Hog-nosed Snake
   Photo: M. Corn

C. Northern Red-bellied Snake
   Photo: K. Anderson

D. Timber Rattlesnake
   Photo: S. Boder

E. Northern Black Racer
   Photo: M. Corn

F. Eastern Gartersnake
   Photo: B. Hunsberger
Preferably Alive

Emydoidea blandingii  
A.K.A. Blanding’s Turtle

Last confirmed sighting in Erie County.

Reward: Accolades of the herping community

Photo: Mark Lethaby
Contact & Resource Information

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Recommended Web Sites:
Pennsylvania Amphibian and Reptile Survey (PARS): www.paherpsurvey.org
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