

# The Life and Times of a State Agency Herpetologist

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So you want to be a herpetologist? I can't blame you. The discipline can be both exciting and challenging. Each week offers a rollercoaster of experiences that range from disappointing to elating and from near misses to complete success — but I didn't start out with this career in mind.

While I've always loved spending time outdoors and had an interest in wildlife, I never dreamed that I would become a herpetologist. Throughout my undergraduate work at the University of Arkansas–Conway, my primary goal was to become a game biologist — amphibians and reptiles weren't on my radar screen. During my last semester in college, I took a vertebrate biology course. This course provided my first glimpse of the rich diversity of species besides those you hunt or fish. My eyes were opened to a whole new world of species that had always been there but which I had never really “seen.”

After receiving my B.S. in Biology, I began graduate work at the University of Arkansas–Fayetteville. I struggled to decide what type of project I should pursue for my thesis. I looked into possible research on Red-cockaded Woodpeckers and Red Foxes. However, due to opportunity and funding, I finally resolved to study pond-breeding amphibians in the Ouachita National

Forest. Although I had little experience working with amphibians, spending night after night at my field sites studying their biology and behaviors changed all of that. After completion of my Master's thesis, I knew I wanted to spend my life learning



Speaking to a Master Naturalist class, the author presents information on the importance of the ephemeral wetlands on which many of Missouri's amphibians rely for reproduction.



The author and a protection agent release an Ozark Hellbender (*Cryptobranchus alleganiensis*). Hellbender populations in Missouri and throughout the range of the species are declining, with failed recruitment largely responsible, although specific causes remain unknown in many instances. Numerous brochures have been produced in an effort to increase awareness of Hellbenders and their plight.



more about these creatures and helping to protect them and their habitat. With this goal in mind, I decided to pursue to a Ph.D. at the University of Arkansas–Fayetteville. I had no idea where I would end up after getting my doctorate, but I knew that, wherever it was, I wanted to be working with amphibians and reptiles.

I was hired as the herpetologist of the state of Missouri in July 2000. I replaced Tom R. Johnson, who had held the position since its inception in 1977. I spent the first few years learning more about the state's amphibians and reptiles and their distributions across Missouri, familiarizing myself with the millions of acres of publicly owned land, and becoming acquainted with hundreds of land managers throughout the state.

Being the herpetologist for the state of Missouri, I rarely do the same thing two days in a row. I may be on the phone or writing emails to address questions from the public and department staff on Monday, searching for Massasauga Rattlesnakes (*Sistrurus catenatus*) in northwestern Missouri on Tuesday, helping a land manager inventory all of the ponds in his area on Wednesday, attending a Regulations Committee meeting on Thursday, and writing a manuscript detailing my most recent research on Friday.

A large part of the job deals with providing technical support to Missouri Department of Conservation staff, other agencies, and the public. I spend considerable time addressing questions from the public regarding amphibians and reptiles. The majority of questions pertain to snakes and how to keep them away from people's homes — but, on occasion, I receive a call from an individual on how to attract snakes to their property. In



The author (top) looking at a Flat-headed Snake (*Tantilla gracilis*, middle) on an Ozark glade. Glades occur where soluble surface rocks have dissolved, leaving largely insoluble rocks and little soil. These very dry, harsh habitats, characterized by drought-tolerant Eastern Red Cedar trees (*Juniperous virginiana*), support a large number of Missouri's reptiles, many of which are prairie- or desert-dwelling species that reach the northeastern most extents of their ranges on Missouri's glades. For example, populations of Eastern Collared Lizards (*Crotaphytus collaris*, bottom) in Missouri are closely tied to glades and are extremely vulnerable to habitat alterations that result from fire control and invasions of non-native plants.



During a workshop training session (top), participants learn how to use a dipnet and how to identify tadpoles and larval salamanders. The author dipnets an Ozark pond looking for amphibian larvae during a herpetofaunal survey of a state-owned conservation area (middle). General surveys such as this are essential for developing inventories of wildlife resources and necessary management plans that include considerations for the needs of amphibians and reptiles. Most known populations of the Ringed Salamander (*Ambystoma annulatum*; bottom) seem to be doing well, but the species has a very limited range, most of which is within the state of Missouri.



Public education may be the most important facet of a state agency herpetologist's job. Here, the author shows a group of individuals a live Eastern Tiger Salamander (*Ambystoma tigrinum*). This species is common in many parts of Missouri, but seldom encountered due to its secretive burrowing lifestyle.



The author installing a drift fence during a Massasauga Rattlesnake (*Sistrurus catenatus*) survey. This survey was conducted in a State Park in collaboration with personnel from the Missouri Department of Natural Resources, federal authorities (especially when dealing with populations on National Wildlife Refuges), and university researchers. Numerous surveys have been conducted for Massasaugas during the author's five-year tenure at the Missouri Department of Conservation. The species presumably ranged across much of northern Missouri in historical times, but is now limited to three known populations on state or federal refuges and a few scattered individuals that may or may not represent viable, self-sustaining populations.

addition, I write and edit many educational materials (articles, brochures, posters) and give numerous presentations on amphibian and reptilian life histories. Overall, Missouri's citizens are eager to learn more about the biodiversity of their state.

Besides dealing with questions from the public, I work with land managers to address management and conservation needs as requested. I commonly provide management recommendations regarding prescribed burning, pond construction and renovation, mowing and haying, disking, timber harvests, etc. I also provide technical workshops each year for individuals wanting to learn more about amphibian and reptilian conservation. Workshops include amphibian and reptile management, stream-team training, venomous snake handling, conservation agent training, Hellbender (*Cryptobranchus alleganiensis*) ecology, and rare and endangered species training. I have learned over the years that the key to increasing awareness and appreciation of

amphibians and reptiles is through educational materials and especially through hands-on workshops.

As the state herpetologist, I oversee many activities related to rare and endangered amphibians and reptiles. Of the 108 species native to Missouri, 29 are considered rare or endangered. These species receive extra attention in an effort to preserve them as part of Missouri's wildlife. Information regarding the status and distribution of each of these species is archived and used to determine the vulnerability of these animals to extirpation. Currently, I represent Hellbenders and Massasauga Rattlesnakes on national recovery teams. These two species are in the most need of recovery efforts in Missouri. In addition to them, other species have received considerable attention over the years. The restoration of Eastern Collared Lizards (*Crotaphytus collaris*) on glades has been and continues to be successful. I provide considerable management information regarding these species to area managers and private landowners, and much of my work involves surveys of these rare and endangered species and supervision of department-sponsored research projects through which we seek to learn more about their basic biology.

A large part of my job involves surveying amphibians and reptiles across Missouri. Even though this is the best part of the job, one person cannot effectively survey the entire state. Therefore, much time is spent acquiring grants to coordinate projects with staff, other agencies, and universities to conduct the work. Currently, the Missouri Department of Conservation is conducting surveys on Natural Areas and Conservation Areas around the state to obtain baseline information on all amphib-



The author explaining to a state forester (above) how to tell a male from a female Prairie Lizard (*Sceloporus consobrinus*, below). Much of the work of a state agency herpetologist is working with the personnel of other agencies on issues relating to amphibians and reptiles.

ians and reptiles. Over the past five years, I, with the assistance of staff, have conducted specific surveys on Illinois Chorus Frogs (*Pseudacris streckeri*), Wood Frogs (*Rana sylvatica*), Northern Crawfish Frogs (*Rana areolata*), Ringed Salamanders

(*Ambystoma annulatum*), Hellbenders, Illinois Mud Turtles (*Kinosternon flavescens spooneri*), Western Chicken Turtles (*Deirochelys reticularia*), Massasauga Rattlesnakes, and Timber Rattlesnakes (*Crotalus horridus*), to name only a few. I take a



During an amphibian and reptile workshop, participants learn how to install drift lines and hoop traps in order to collect and survey for aquatic turtles. In addition to monitoring effects of such natural events as the massive floods of 1993, during which all of Missouri's major rivers ranged far out of their banks, some aquatic turtles, such as the Chicken Turtle (*Deirochelys reticularia*, top left), Blanding's Turtle (*Emydoidea blandingii*, left), and Illinois Mud Turtle (*Kinosternon flavescens spooneri*, top), are of conservation concern in the state. Chicken Turtles are relatively common in the southeastern United States, Blanding's Turtles have a disjunct distribution in the upper Midwest, and Illinois Mud Turtle populations are isolated relicts of what once was a much wider distribution. All are known from only one or very few localities in Missouri.



Wood Frogs (*Rana sylvatica*) in Missouri are relicts of times when massive glaciers covered much of the state north of where the Missouri River now flows. These remnant populations are scattered across the state in localized habitats that remain suitable for this cold-tolerant species, which is distributed for the most part far to the north. In 2005, the Missouri Department of Conservation conducted numerous surveys for Wood Frogs in southwestern Missouri.

great deal of pleasure and satisfaction when I capture and photograph a species that has not been seen in the state in 20+ years, or capture a species I had not previously encountered.

Although my job is exciting, some activities, especially those dealing with regulatory issues, may be less than thrilling — but they can be equally rewarding. Much paper work is involved in overseeing wildlife collector permits and breeder permits. Over 150 amphibian and reptile collector permits are processed and reviewed annually in Missouri. In addition, I provide advice to pet stores, commercial farms, and other interested parties regarding the rules and policies and appropriate permits needed to propagate and sell native species in Missouri. One of the more demanding parts of the job is to provide input on wildlife code regulations that impact amphibians and reptiles. Much time and effort are involved with code changes, but the ultimate goal is better protection for wildlife.

Although the majority of a state agency herpetologist's job is to increase awareness through educational materials, management recommendations, and regulation changes, some time remains to work with academic colleagues. I serve as primary contact person for university faculty and students who conduct research on amphibians and reptiles. Numerous meetings occur with professors and graduate students across the state regarding potential projects. I've discovered that guiding a student's research interests is exhilarating and gratifying. I also see the need for state agency biologists to publish data in peer-reviewed journals. Considerable data is collected by agencies and the need to get this information to the academic world will further stimulate research and collaboration.

Although I never dreamed that I'd become a herpetologist, even during those long hours sitting by ponds listening to frogs as a master's student, I can't imagine anything else I'd rather be doing with my life. Nothing can compare with the sense of joy when a member of the public who has always been afraid of snakes holds one for the first time, the elation of finding a clutch of eggs produced by an animal on the brink of extinction, the delight of spending a day creating a list of species for an area that has never been surveyed, the challenge of writing regulations that will protect a sensitive species, or the accomplishment when a manuscript is accepted for publication in a peer-reviewed journal. I am thankful every day that Missouri has the funding and the public support for a full-time advocate of the state's herpetofauna — and that I'm the one that gets to do the job.



BRIAN S. EDMOND

We're still learning about species that are common in Missouri. A student project investigating the distribution of purported subspecies of the Common Garter Snake (*Thamnophis sirtalis*) is shedding new light on what has been a "standard" taxonomy for many decades.