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KANSAS

Wildlife & Parks Magazine

The Return of a Giant: Restoring the Alligator Snapping Turtle to Kansas

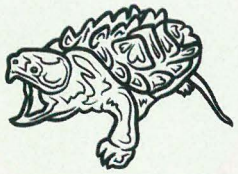
by J. Daren Riedle, KDWP Wildlife Diversity Coordinator

It's the late 1970s, and a 6-year-old boy walks through the newly opened Southern Lowlands building at the Tulsa Zoo. Turning a corner, he freezes, transfixed by the largest turtle he has ever seen. The creature's shell is nearly as long as he is tall, and its enormous head seems almost prehistoric. The boy watches in awe as the turtle slowly turns to face him. He doesn't know it yet, but this encounter with an alligator snapping turtle will shape the direction of his future.

Jump to 1994. The boy, now a young man, is living his dream. Sitting in a boat drifting across Wolf Bayou in southeastern Missouri, he's about to pull up a large hoop net. As the net breaks the surface, his heart leaps—a massive, brown-shelled turtle with three jagged ridges floats to the top. It's his first wild alligator snapping turtle! He and his partner pull it aboard, weigh and measure it, give it a unique mark, and release it back into the water.

Now fast forward another 30 years to 2024. The boy has grown into a man, considerably older, grayer, and a bit heavier. Standing before a group of co-workers, media members, and local landowners, he cradles a smaller, captive-bred alligator snapping turtle in his hands. His impromptu speech marks a monumental moment: the first release of alligator snapping turtles in Kansas after a nearly four-decade absence. This release signifies not only a major step forward for the species' conservation in the western part of its range but also a pinnacle for the careers of several conservation biologists, including the boy once transfixed by the large turtle seen at the Tulsa Zoo.

That boy was me. Over the years, my fascination with alligator snapping turtles has grown into a passion for their conservation.

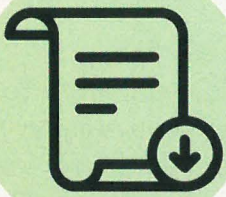


1974

Alligator snapping turtles are identified by experts as Endangered in Kansas.

1984

The species is denied listing under the federal Endangered Species Act due to lack of ecological information.



1986

Alligator snapping turtles were down-listed to SINC in Kansas due to lack of significant biological information evidence.

1986

Last known alligator snapping turtle in Kansas is captured, tagged, and subsequently lost.

1991

The last known individual is recaptured, fitted with new transmitters, and tracked for one year.

Daren Riedle, KDWP Wildlife Diversity Coordinator, addresses a small crowd prior to reintroducing 40 alligator snapping turtles back into Kansas waters in September.

A Species in Decline

These freshwater giants, restricted to the Mississippi River drainage and smaller Gulf Coast drainages in the southeastern United States, are some of the most iconic reptiles in North America. They can exceed 30 inches in shell length and weigh more than 200 pounds. Despite their size, they are elusive, often lying unnoticed at the bottoms of rivers, concealed among debris and sediment.

Unfortunately, their size and quality of their meat made them a prime target for harvest. Historically, they were harvested for personal use, but by the mid-1900s, demand for alligator snapping turtles as a commercial food item skyrocketed. By the 1970s and 1980s, trappers were sounding alarms, warning that the species had been wiped out in many parts of its range. In 1984, they were petitioned for listing under the Endangered Species Act, but the request was denied due to insufficient data. This decision sparked a series of state-level surveys across their range, including Kansas.

In 1986, Kansas Department of Wildlife and Parks biologist Doug Blex encountered a 60-pound female alligator snapping turtle crossing a small stream near Independence. Blex tagged the turtle with an ultrasonic transmitter, hoping to study its movements. Unfortunately, the tag failed within weeks, and the turtle disappeared. Around 1990, Emporia State University was awarded Chickadee Checkoff funds to conduct statewide surveys, but no alligator snapping turtles were found. Then, in 1991, Blex's neighbors re-captured the tagged turtle, offering researchers a second chance to study it! Dr. David Edds, a professor at Emporia State University, and his student, Paul Shipman, attached new transmitters to the turtle and tracked it for the next two years. This individual was the last confirmed alligator snapping turtle seen in Kansas.

Laying the Groundwork for Reintroduction

As a kid infatuated with alligator snapping turtles, I was captivated by these events

happening right outside my hometown of Independence. I sought out opportunities to witness the research firsthand. Dr. Edds invited me to help with a turtle release, which became a formative experience. That meeting introduced me to Blex, Edds, Shipman, and his brother Lynn, and it set me on the path to studying biology at Emporia State.

Not long after finishing his work in Kansas, Shipman was invited to conduct alligator snapping turtle surveys in southeastern Missouri. I eagerly joined him, and together we trapped and studied turtles across the region. This was my first job doing field research, and it was an incredible experience. Shipman, then a student at Oklahoma State University, later recommended me to lead similar surveys in Oklahoma, where I conducted my master's research. Over three summers, our team surveyed numerous sites across eastern Oklahoma, where historic records of alligator snapping turtles were abundant. Unfortunately, we found only four sites with healthy populations, fragmented by dams and reservoirs and decimated by historic commercial harvesting.

One of the largest populations we discovered was on the Sequoyah National Wildlife Refuge, at the confluence of the Canadian and Arkansas rivers. Refuge manager Steve Berendzen collaborated with us on conservation strategies, and we concluded that releasing turtles beyond these dams would help repopulate areas where the species had disappeared. Berendzen spoke with Kerry Graves, hatchery manager at the Tishomingo National Fish Hatchery in Oklahoma, about establishing a breeding population at the hatchery. In 2000, I transported a group of turtles from Sequoyah to the hatchery, laying the foundation for future reintroductions.

2001

Initial broodstock for captive breeding program is taken to Tishomingo National Fish Hatchery.

2006

Reintroduction plan finalized, prioritizing northern Oklahoma sites near Kansas.

2008

Research highlights the Neosho and Verdigris River drainages as important for north-south turtle movement.

2012

The Center for Biological Diversity petitions the USFWS to list the species under the Endangered Species Act.

2015

A 90-day review finds substantial evidence supporting potential federal listing.

After earning my degree at Oklahoma State in 2001, I briefly left the snapping turtle world to work with desert tortoises in Arizona. Over the years, my friend and fellow biologist Dr. Day Ligon refined breeding protocols for alligator snapping turtles at Tishomingo and began planning trial releases. Around 2006, I came back east and, together with Day, the U.S. Fish and Wildlife Service, and the Oklahoma Department of Wildlife Conservation, began developing release plans. By 2008, young turtles were being reintroduced into the Caney, Verdigris, and Neosho rivers in northern Oklahoma, and early monitoring showed promising results. The individual turtles showed good growth rates, and larger females began showing evidence of egg production.

"It is hoped that this initial starting population of 100 turtles will eventually become a self-sustaining population, leading to the recovery of the species in Kansas and Oklahoma."

Bringing Alligator Snapping Turtles Back to Kansas

When I joined the Kansas Department of Wildlife and Parks in 2015, I was determined to bring alligator snapping turtles back to Kansas. I brought in several multi-state grants that allowed Day and his students to continue monitoring the introduced populations in Oklahoma and resample sites in Kansas. These surveys continued until 2021, and no alligator snapping turtles were detected in the state. Additionally, we had not been able to detect any introduced turtles from Oklahoma that had moved north across the state line, with low-head dams likely impeding their movement.

With years of data supporting the success of reintroductions, we were ready to expand efforts into southern Kansas. The next step in the process was purely administrative. Waterways are private property in Kansas, and our job was to work closely with landowners to ensure they were comfortable having potentially federally listed species released on their property. A year was spent developing a Conservation Benefit Agreement (CBA), which is an agreement that provides assurances to participating landowners. These assurances protect landowners from additional regulatory actions stemming from the release of reintroduced species. Trevor Starks, KDWP recovery biologist, oversaw the CBAs and spent the next year working with landowners along the Neosho River, looking for possible release sites.

Finally, we identified a suitable release site: a 35-mile stretch of the Neosho River – one of the longer un-impounded stretches of stream left on the river in Kansas. This stretch, which includes public and private conservation-minded lands, offers ideal habitat. In September 2024, we released 40

In September 2024, 40 alligator snapping turtles were released in Kansas. An additional 60 will be reintroduced in 2025.

alligator snapping turtles from the hatchery in Tishomingo, each equipped with ultrasonic transmitters. A dozen receiver stations were installed along the river to monitor their movement. Future trapping efforts will monitor the growth and survival of the released turtles, and an additional 60 turtles will be introduced in the summer of 2025 to strengthen the population. It is hoped that this initial starting population of 100 turtles will eventually become a self-sustaining population, leading to the recovery of the species in Kansas and Oklahoma.

Hope for the Future

The project has been a career highlight, but it's just the beginning. It will take 8-10 years for these turtles to reach maturity and reproduce, but the little boy who first marveled at a giant turtle in the Tulsa Zoo is thrilled to see these magnificent creatures reclaim their place in Kansas waters. Just a month after the release, KDWP biologist Travis Ratliff spotted one of the turtles surfacing for air, capturing a photo that symbolizes hope for the future of this species. I hope this means that our turtles are settling into their new home.

CHECK IT OUT

Scan the QR code to watch a video about the alligator snapping turtle reintroduction back into Kansas!

2017

Multi-state survey finds no alligator snapping turtles in Kansas or migrating from Oklahoma.

2020

Potential Kansas release sites identified on the Verdigris and Neosho rivers.

2021

U.S. Fish and Wildlife Service proposes listing the species as threatened.

2021

Conservation agreements finalized to promote reintroductions on private lands.

2024

First reintroduction of alligator snapping turtles into Kansas waters.

Tracking Turtles: The Tagging Process

Tracking alligator snapping turtles is a key part of conservation efforts. Tags help researchers monitor each turtle's movements through a network of receiver stations placed along its habitat. These stations detect the tags as the turtles swim by, providing their location for future recapture and monitoring of growth.

1. **Before tagging, turtles are measured, weighed, and logged into a tracking system.**
2. **The area on the turtle's carapace (top shell) where the tag will be placed is cleaned to remove any dirt or debris that could interfere with the process.**
3. **An ultrasonic transmitter is then securely attached to the carapace using a strong adhesive. The lightweight, waterproof transmitters are designed to endure the turtle's aquatic environment.**
4. **Once tagged and recorded, the turtle is released back into its habitat. Researchers will use the tag to track its movements and gather valuable conservation data.**

If a tagged alligator snapping turtle is found, whether alive or deceased, note the location and take a photo if possible, while maintaining a safe distance. Send pictures and location details to **rare.species@ks.gov** or to Trevor Starks at **trevor.starks@ks.gov**. The same procedure applies for deceased animals.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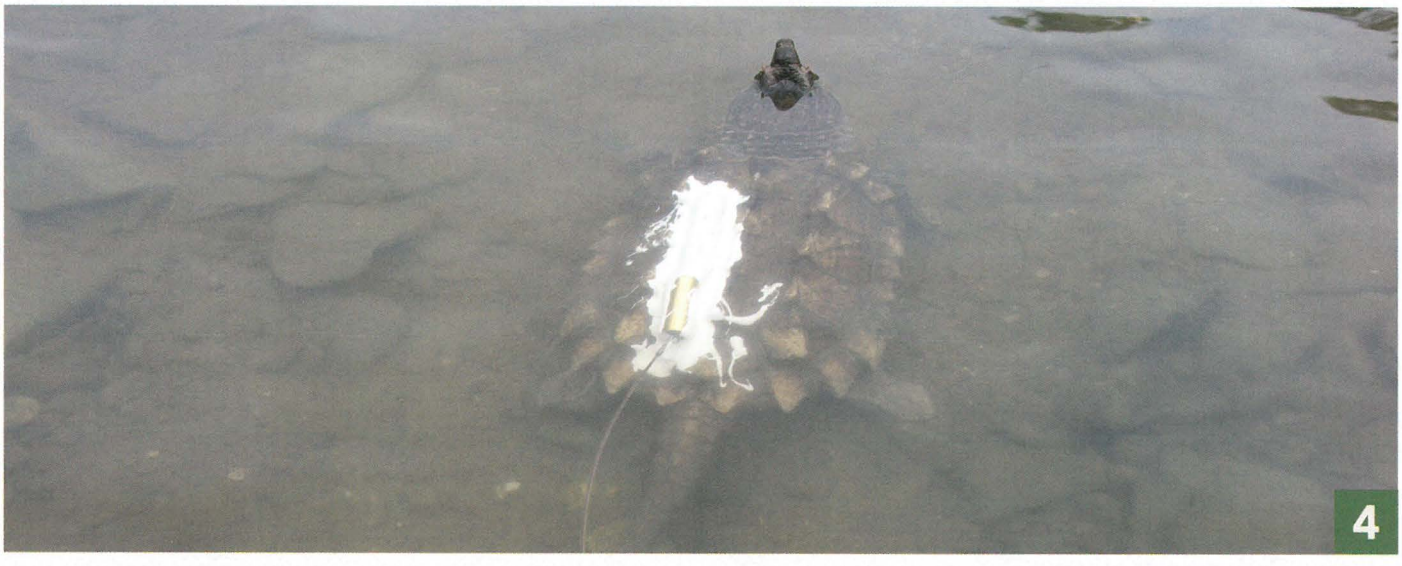
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Donate to the Chickadee Checkoff this Tax Season and Year-Round

The Chickadee Checkoff was the first checkoff in Kansas and started in 1980. This income checkoff program has allowed taxpayers to contribute to charitable organizations on their state income tax form.

Chickadee Checkoff

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