

Life in the Rocks

An Arkansas Treasure

By Kelly Irwin

Situated in the floodplain of the Little River is a swamp unlike any other in the state of Arkansas. This 3,000-acre cypress swamp has been in existence for hundreds of years, and is truly unique in terms of its almost pristine condition, size, and wildlife abundance. There are no comparable swamps anywhere else in Arkansas. The property has been a privately owned hunting club for over 100 years and has never been logged or commercially harvested for its wildlife. It has been my good fortune to be able to visit this swamp on several occasions, in my capacity as the Game and Fish Commission herpetologist, as a guest of a club member, and I want to share some of my observations with the readers.

It all started a couple of years ago when I was contacted by a club member (Note: for privacy, the club and club member shall remain anonymous, and I will refer to my host as “John”) seeking permission to temporarily possess a hatchling Alligator Snapping Turtle for use in an educational program at his grandson’s elementary school. John and his wife (lets call her “Jane”) had protected a turtle nest from predators that year, by placing a wire cage over it, and the hatchlings had recently emerged. Permission was granted for the temporary possession of the turtles and I sent John and Jane species account information about the snapping turtles. About a year later I contacted John to request permission to conduct an alligator spotlight survey in the swamp, as part of a statewide alligator population survey project. John graciously offered his services as a guide and we observed almost 100 alligators the night of our survey. Subsequent replicated surveys the following year yielded counts of 145 and 190 alligators, the greatest concentration

of native alligators in the entire state of Arkansas. Alligators were almost wiped out in Arkansas before restocking efforts were initiated by the AGFC in 1972. However, the alligator population in this swamp has remained stable, as the habitat remained intact and illegal hunting pressure was absent.



A native Arkansas alligator basking on a log in the swamp.

Since my first visit to the swamp to count alligators, John and Jane have since invited me to come observe the nesting of the Alligator Snapping Turtles. During a mid-May visit last year I was fortunate enough to observe five nesting females over a three day period, truly remarkable considering most herpetologists never get to see even one nesting Alligator Snapping Turtle in their lifetime, let alone five! Jane is an avid photographer, and not only chronicles the adventures of family and friends on their visits to the swamp, but also the swamp and its inhabitants. The snapping turtles happen to be one of her favorite subjects. Jane became fascinated with the snapping turtles several years ago when a nesting female alligator snapper decided to dig her nest right next their cabin while undergoing

renovation. They placed a wire cage over the nest (to keep out predators, like skunks and raccoons) and instructed the contractors that they were to avoid disturbing the site until further notice. Since that first nest hatched successfully they have brought the resident caretaker and his wife into the turtle nest protection business. Last year they caged approximately 20 turtle nests, at least 10 of which were alligator snapping turtle nests!



The herpetologist observes a nesting female Alligator Snapping Turtle at the swamp.

Not only does the swamp harbor large numbers of large reptiles but it is also home to the largest and most diverse colonial waterbird rookery in the state of Arkansas. A recent survey produced a rough estimate of 30,000+ birds composed of the following species: Cattle Egret, White Ibis, Snowy Egret, Little Blue Heron, Great Blue Heron, Great Egret, Tri-colored Heron, Black-crowned Night Heron, and Anhinga. The swamp also provides suitable habitat as a nest site for a pair of Bald Eagles, not to mention nesting sites for the likes of the showy Prothonotory Warbler and other neotropical migrants.



The swamp is home to the largest White Ibis rookery in Arkansas. (Photograph by Karen Rowe)

This swamp is an extraordinary place, but it has not been totally immune from the effects of human activity. When the U.S. Army Corps of Engineers built Millwood Dam they stopped the periodic flood events that replenished the swamp with influxes of fish and the flushing effects that kept aquatic plant density in check. Since then the sport fishery in the swamp has declined and the submerged aquatic plant density has begun to choke out formerly open water portions of the swamp. The influence of a tributary creek has increased sediment and nutrient runoff into the swamp, thus accelerating the eventual filling in of the swamp and increasing aquatic plant growth. The members of the hunting club take great pride as stewards of this “natural treasure” and are concerned with the long-term health of the swamp ecosystem. They continue to seek effective management strategies to safe guard the swamp from accelerated deterioration, in the hopes that it will be around for several hundred more years for future generations to enjoy and appreciate.



Typical views along the margins of the swamp.

Pebbles...

(Quick notes on what we've been up to...) Kelly gave a presentation on the amphibians and reptiles of Arkansas at the Ferndale 4-H Center.

Bill assisted a graduate student in research on the Little River in Southwest Arkansas.

Bill and Brian attended the Arkansas Chapter of the American Fisheries Society annual meeting. Bill presented data gathered from mussel surveys in Southwest Arkansas. Brian gave a presentation on the status and diversity of Arkansas crayfish.

The Class of 2004 Wildlife Officer Cadets received instruction from Kelly on regulated herps and venomous snake ID.

Bill, Brian, and Kelly attended the U.S. Fish and Wildlife Project Leader Training workshop at Ferndale 4-H Center.

Kelly hosted Professor Steven Wallace and students from East Tennessee State University at the Rick Evans Grandview Prairie Conservation and Education Center. Professor Wallace and his students came to Arkansas to salvage the skeleton of an alligator that was found dead by the herpetologist in Hempstead County. Professor Wallace will be using the skeleton for comparative purposes in his research on a fossil site that contains alligators near Gray, Tennessee. The group was given a tour of Grandview Prairie WMA and learned about the geology and paleontology of the Cretaceous seas that once covered this part of the Natural State.

Brian and Bill attended a regulations staff meeting in Eureka Springs.

Bill, with the help of numerous fisheries biologists, conducted a Special Paddlefish Harvest Season on the Ozark Pool of the Arkansas River.

Brian attended the spring meeting of the Southern Division American Fisheries Society.

Kelly participated in a field trip to Clay County and the environs around Sikeston, Missouri in company with Tom Foti, Arkansas Natural Heritage Commission Ecologist, and Jeff Briggler, Missouri Department of Conservation Herpetologist, to assess habitat and plant communities as part of a multi-agency project to conserve the Illinois Chorus Frog in Clay County, Arkansas.

Bill attended an aquatic snail workshop in Tuscaloosa, Alabama.

Brian inspected culture facilities at Hopper-Stephens Fish Farm.

Kelly attended the Ozark Hellbender Working Group meeting in West Plains, Missouri to continue work on an Ozark Hellbender Conservation Plan.

Bill completed the USFWS Electrofishing Course.

Brian assisted biologist from USFWS, ANHC, and TNC to survey endangered cave crayfishes in three caves and Ozark cavefish in one cave.

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A Preliminary List of Arkansas Crayfishes and Published Common Names

Compiled by Brian Wagner

- Bouchardina robisoni* Hobbs, 1977-
Cambarellus puer Hobbs, 1941-Cajun dwarf crayfish
Cambarellus schufeldtii (Faxon, 1884)-Shufeldt's dwarf crayfish, [Cajun dwarf crayfish]
Cambarus aculabrum Hobbs and Brown, 1987 -
Cambarus causeyi Reimer, 1966-
Cambarus diogenes Girard, 1852-Devil crayfish [devil crawfish]
Cambarus hubbsi Creaser, 1931-Hubbs' crayfish
Cambarus ludovicianus Faxon, 1884-
Cambarus setosus Faxon, 1889-Bristly cave crayfish
Cambarus tartarus Hobbs and Cooper, 1972-[Oklahoma cave crayfish]
Cambarus zophanastes Hobbs and Bedinger, 1964-[Hell Creek Cave crayfish]
Fallicambarus caesius Hobbs, 1975-
Fallicambarus dissitus (Penn, 1955)-
Fallicambarus fodiens (Cottle, 1863)-Digger crayfish
Fallicambarus gilpini Hobbs and Robison, 1989-
Fallicambarus harpi Hobbs and Robison, 1985-
Fallicambarus jeanae Hobbs, 1973-
Fallicambarus petilicarpus Hobbs and Robison, 1989-
Fallicambarus strawni (Reimer, 1966)-
Faxonella blairi Hayes and Reimer, 1977-
Faxonella clypeata (Hay, 1899)-Shield crayfish, [ditch fencing crayfish]
Orconectes acares Fitzpatrick, 1965-
Orconectes difficilis (Faxon, 1898)-[Painted crayfish]
Orconectes eupunctus Williams, 1952-Coldwater crayfish
Orconectes lancifer (Hagen, 1870)-Shrimp crayfish
Orconectes leptogonopodus Hobbs, 1948-
Orconectes longidigitus (Faxon, 1898)-Longpincer crayfish
Orconectes luteus (Creaser, 1933)-Golden crayfish
Orconectes macrus Williams, 1952-Neosho midget crayfish
Orconectes marchandi Hobbs, 1948-Mammoth Spring crayfish
- Orconectes meeki* (Faxon, 1898)-Meek's crayfish
Orconectes menae (Creaser, 1933)-
Orconectes nais (Faxon, 1885)-
Orconectes nana Williams, 1952-
Orconectes neglectus (Faxon, 1885)-Ringed crayfish
Orconectes neglectus chaenodactylus-Ringed crayfish
Orconectes ozarkae Williams, 1952-Ozark crayfish
Orconectes palmeri (Faxon, 1884)-Gray-speckled crayfish
Orconectes punctimanus (Creaser, 1933)-Spothanded crayfish
Orconectes virilis (Hagen, 1870)-Northern crayfish, [virile crayfish]
Orconectes williamsi Fitzpatrick, 1966-Williams' crayfish
Procambarus acutus (Girard, 1852)-White river crayfish, [white river crawfish]
Procambarus clarkii (Girard, 1852)-Red swamp crayfish, [red swamp crawfish]
Procambarus curdi Reimer, 1975-
Procambarus dupratzii Penn, 1953-
Procambarus ferrugineus (Hobbs and Robison, 1988)-
Procambarus geminus Hobbs, 1975-
Procambarus gracilis (Bundy, 1876)-Grassland crayfish, [prairie crayfish]
Procambarus liberorum Fitzpatrick, 1978-[Osage burrowing crayfish]
Procambarus nachitochae Penn, 1953-
Procambarus ouachitae Penn, 1954-
Procambarus parasimulans Hobbs and Robinson, 1985-
Procambarus regalis (Hobbs and Robison, 1988)-
Procambarus reimeri Hobbs, 1979-
Procambarus simulans (Faxon, 1884)-
Procambarus tenuis Hobbs, 1950-
Procambarus tulaneii Penn, 1953-
Procambarus viaeviridis (Faxon, 1914)-Vernal crayfish
Procambarus vioscai Penn, 1946-

Information from Dr. Henry Robison (SAU), Cindy Osborn (ANHC), www.NatureServe.com, *The Crayfishes of Missouri*, and *AFS Special Publication 17 - Common and Scientific Names of Invertebrates: Decapod Crustaceans*.

The Pink Mucket *Lampsilis abrupta* (Say, 1831)

By Bill Posey

The pink mucket was first described from specimens collected in the Muskingum River in Marietta and Washington Counties in Ohio and was given the name *Unio orbiculatus* by Samuel P. Hildreth in 1828. However, the description given by Hildreth best fits the specimen that was described by Thomas Say as *Unio abruptus* in 1831. Others have changed the name of the species based on revisions of the genus or species until it has finally been given the name now used, *Lampsilis abrupta*.

Harris and Gordon in their 1990 book Arkansas Mussels describe the pink mucket as slightly rounded to broadly elongate in outline and moderately to greatly inflated. Females are squared and swollen on the posterior end. The shells are typically yellow, tan or brown and younger individuals may have visible green rays or lines.



Female pink mucket recently found in the Ouachita River at Camden, Ark.

Distribution records indicate that it is an interior basin resident (is found in the Mississippi River and tributaries) where it has

been found in at least 27 different rivers in 13 states. It tends to inhabit medium to large sized rivers and some lakes where the substrate is periodically flushed and has been found in clay, sand and gravel substrates. In Arkansas, it is found nine rivers with perhaps the best populations in the Black and Spring rivers.

Pink mucket have never been reported as abundant and are usually found as single individuals in a mussel bed. Occasionally, a really good bed will have three to five individuals but these occurrences are rare. Due to the rarity of the pink mucket, the US Fish and Wildlife Service listed it as endangered in June 1976.

Like almost all North American freshwater mussels, the pink mucket utilizes fish as an intermediate host to complete reproduction. Like all members of the genus *Lampsilis*, the females display a portion of her mantle, presumably as a lure to tempt a fish to come near enough to allow glochidia (larvae) to attach to the fish. Recent host fish identification attempts have shown the largemouth, smallmouth and spotted bass and the walleye are all suitable hosts for the glochidia of the pink mucket. Males and females differ in shape and are easily differentiated in the field because of their different shape.

Threats to the species include changes in habitat due to dams, dredging, siltation and pollution. Its shell is also thick enough to be used in the cultured pearl industry and numerous specimens were found in piles of shells harvested for the cultured pearl industry prior to the species listing in 1976. The pink mucket was also used in the pearl button industry of the early 1900's.



Female pink mucket with mantle flap extended (Saline River).



Female (left) and male (right) pink mucket (White River).

Since the host fish has been determined, the US Fish and Wildlife Service has been actively rearing juveniles in cages in a lake. This process has shown considerable success and may eventually help return the pink mucket to areas where the species was once found but has disappeared.



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