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New Records of Distribution and Natural History of Vertebrates in Arkansas: 2020-2023

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Running Title: Vertebrate Natural History Notes, 2020-2023

Abstract

Small details of natural history often go undocumented to science if those details are not parts of larger studies. However, knowledge of small details can provide insights that lead to interesting questions about ecological relationships or environmental change. We have compiled recent important observations of natural history of vertebrates, including several distributional and size records of fishes, atypical carapace shape in a common snapping turtle, an unusual support structure for a bird nest, healed damage to a broken jaw of a young deer, and numerous distributional records of bats.

Introduction

Environments altered by anthropogenic activity provide field opportunities to observe adjustments in natural history parameters and relationships among organisms. Knowledge of distribution and natural history of many species within Arkansas is becoming better documented, but much remains to be discovered and reported. We continue to update the state of knowledge of Arkansas's vertebrates (see Tumilson *et al.* 2017, references therein, and yearly updates provided in this journal). Here, we include previously unreported records of distribution and natural history of vertebrates in Arkansas.

Methods and Materials

Fish specimens were documented with a photovoucher or a specimen housed in the Southern

Arkansas University Vertebrate Collection (SAU) in Magnolia, Arkansas. Localities are reported as GPS (latitude and longitude) coordinates when available, except for some sensitive species such as bats. To avoid misrepresentations, measurements are given first with the criterion used at the time of collection, with conversions in parentheses if data were not recorded in metric units.

Results and Discussion

CLASS ACTINOPTERYGII - RAYFINNED FISHES

Acipenseridae – Sturgeons.

Acipenser fulvescens Rafinesque - **Lake Sturgeon.** Records of Lake Sturgeon in Arkansas are quite rare (Robison and Buchanan 2020). On 23 January 2022, an angler fishing for Walleye at the confluence of the Black and Spring rivers near Black Rock (Lawrence Co.) caught a large Lake Sturgeon. The specimen weighed 11.9 kg, had a fork length of 1199 mm, and a total length of 1309 mm. After photos were taken for verification and identification by Allison Asher, AGFC, the fish was released alive at the Black Rock boat ramp.

Polyodontidae - Paddlefishes.

Polyodon spathula (Walbaum) - **Paddlefish.** Recently, a new state record Paddlefish was caught by J. C. Johnson in the lower end of Beaver Lake (Carroll Co.) on 27 August 2020. This new state record weighed 118 lbs., 9 oz. (53.78 kg) and measured 69 in. (1.75 m) from tip of snout to fork in tail, an eye to fork length of

49 in. (1.25 m) and a girth measured at 44 in. (1.12 m). It was validated by AGFC biologists.

Hiodontidae - Mooneyes.

***Hiodon alosoides* (Rafinesque) - Goldeye.** On 22 March 2020, a new state record specimen (2 lbs., 12 oz., or 1.25 kg) of Mooneye was caught by T. Medler in the Cache River near the Grennell Slough Access (Woodruff Co.). It measured 492 mm in total length and was caught on a limb line baited with chicken liver.

***Hiodon tergisus* Lesueur - Mooneye.** Several record-breaking Mooneye have been caught recently in Arkansas. A 9 oz. (255 g) specimen caught by J. Buckingham in the Ouachita River near Malvern (Hot Spring Co.) on 11 May 2020 was certified as a new state record by Sean Lusk, AGFC biologist. Just over 2 years later, on 23 July 2022, Shawn Clark caught a 10.8 oz. (306 g), 13 in. (330 mm) total length (girth 7 in. or 178 mm) specimen of *H. tergisus* in the Current River near the Randolph-Clay County line, AR, just south of the MO-AR state line (36.49222°N, 90.77942°W). One month later, on 27 August 2022, Shawn Clark caught a second record breaking Mooneye weighing 11.6 oz. (329 g), 13 in. (330 mm) total length, girth 7.5 in. (191 mm), from the Current River (36.49635°N, 90.78110°W), Randolph-Clay Co. line, in Arkansas.

Clupeidae – Herrings and Shads.

***Alosa chrysochloris* (Rafinesque) - Skipjack Herring.** On 22 July 2022 Shawn Clark caught a new Arkansas state record-size specimen of the Skipjack Herring (Figure 1) in the Current River (36.49854°N, 90.78334°W), 50 yd. (46 m) south of the Missouri-Arkansas border on the Randolph-Clay County line. The specimen measured 13 in. (330 mm) total length and weighed 10.8 oz. (306.2 g, frozen). The fish was caught on a Berkley Gulp Cricket. Air temperature was 86°F (30°C). In addition, this specimen represents the first record of the Skipjack Herring from the Current River in Arkansas (Robison and Buchanan 2020).



Figure 1. Arkansas record-sized (230 mm, 306 g) Skipjack Herring (*Alosa chrysochloris*) also representing the first record from the Current River in Arkansas. Caught near the Randolph-Clay Co. line on 22 July 2022 by Shawn Clark.

Catostomidae - Suckers.

***Moxostoma anisurum* (Rafinesque) - Silver Redhorse.** In Arkansas, the Silver Redhorse inhabits the larger, deeper, sluggish pools of moderate-sized streams to large rivers having relatively clear water over rocky or gravelly substrates (Robison and Buchanan 2020). Eighteen localities of this uncommon redhorse are known in Arkansas comprising only 26 specimens which have been documented from the White River system in northern Arkansas to date (Robison and Buchanan 2020). On 12 December 2020, a single Silver Redhorse (654 mm TL) weighing 2,977 g was caught by Rusty Gibson in the Eleven Point River in Randolph Co., AR 5.87 mi. (9.45 km) east of Ravenden Springs, AR (Sec. 6, T19N, R1W; 36.327490N, 91.120569W) with a rod and reel using a nightcrawler as bait. This specimen represents only the second record of the Silver Redhorse from the Eleven Point River in Arkansas (Robison and Buchanan 2020). This catostomid has a conservation status of threatened in Arkansas and is considered critically imperiled (S1) by the Nature Conservancy.

Mugilidae – Mulletts.

***Mugil cephalus* Linnaeus - Striped Mullet.** A 24.6 in. (62.5 cm) TL, 5.6 oz. (158.8 g) specimen of the Striped Mullet was taken by S. Yarberry from Morgan Point Bendway Lake (an oxbow lake) near Pendleton (Desha Co.) on 27 March 2020 while bowfishing. This new state record mullet was verified by AGFC biologist Brett Hobbs.

Percidae – True Perches.

***Percina nasuta* (Bailey) – Longnose Darter.** Currently, the Longnose Darter is undergoing assessment regarding its conservation status. It is important that all previous collections of this rare darter are made known. We report 2 prior collections of *Percina nasuta* that have not previously been acknowledged in print. (1) South Fork of Fourche la Fave River at AR St. Hwy. 7 at Hollis (Perry Co.), 13 October 2015, Henry W. Robison, Dave Neely, and Uland Thomas, 5 specimens; and (2) South Fork of Fourche la Fave River at AR St. Hwy. 7 at Hollis (Perry Co.), 14 October 2015, Henry W. Robison, Dave Neely, and Uland Thomas, 7 specimens. Specimens were identified and released. The Arkansas River Drainage population of *Percina nasuta* in the South Fork of the Fourche la Fave River is currently stable and should be protected.

Scieanidae – Drums and Croakers.***Aplodinotus grunniens* Rafinesque – Freshwater**

Drum. No records of this fish were reported from Norfolk Lake on the White River (Robison and Buchanan 2020), and historically, this drum has been absent from the lake. On 4 November 2020, AGFC biologists first recorded 3 Freshwater Drum while electrofishing for Black Bass in Norfolk Lake. On 10 November 2020, Jeremy Risley (AGFC fishery biologist) received a call from a local guide who caught a Freshwater Drum on 6 November 2020 (J. Risley, pers. comm.). The guide also reported that it was the first Freshwater Drum that he had caught in 29 years of guiding on Norfolk Lake.

CLASS REPTILIA, ORDER SQUAMATA:**Colubridae – Colubrid Snakes.**

***Pantherophis emoryi* (Baird and Girard) - Great Plains Rat Snake.** Trauth *et al.* (2004) show only 2 records of the Great Plains Rat Snake from Pulaski County, AR, 1 south of the Arkansas River and 1 north of the Arkansas River. We document the third specimen of this snake from Pulaski County. On 5 October 2020, a single individual of *P. emoryi* was found dead on the road at the corner of Butterfly Drive and Eagle Point in Turtle Creek subdivision near intersection of Batesville Pike and Jacksonville Cato Roads, Sherwood (Pulaski Co.), 34.883746N, 92.235376W by Vanessa Neely who photovouchered the specimen.

***Pantherophis obsoletus* (Say in James) – Western Rat snake.** An adult Western Rat Snake collected 17 May 2022 in Bentonville (Benton Co.) had a black ant attached to it (Figure 2). The mandibles of the dead ant were embedded within the snake. This is the first report of which we are aware of an ant's mandibles being embedded within a snake due to a bite.



Figure 2. Western Rat Snake (*Pantherophis obsoletus*) showing an ant's mandibles embedded within the snake tissue between the scales.

ORDER CHELONIA**Chelydridae – Snapping Turtles.**

***Chelydra serpentina* (Linnaeus) - Common Snapping Turtle.** Three heightened longitudinal ridges along the carapace of the Alligator Snapping Turtle (*Macrochelys temminckii*) usually help distinguish it from the Common Snapping Turtle (*Chelydra serpentina*), whose carapace shows only hints of such ridges. An atypical specimen of *C. serpentina*, carapace length 110 mm, collected on 13 April 2022 on AR St. Hwy 67 near Malvern (Hot Spring Co.), exhibited ridges more consistent with *M. temminckii* (Figure 3). All other characters were consistent with *C. serpentina* (Trauth *et al.* 2004).



Figure 3. Carapaces of Common Snapping Turtles (*Chelydra serpentina*). Top image shows typical appearance, bottom shows the atypical specimen with ridges like that of the Alligator Snapping Turtle (*Macrochelys temminckii*).

CLASS AVES, ORDER PASSERIFORMES:**Tyrannidae – Tyrant Flycatchers.**

***Sayornis phoebe* (Latham) – Eastern Phoebe.** Phoebes often nest above an existing structure. A phoebe nest (Figure 4) constructed of plant fibers and mosses (Headstrom 1970) found under a bridge east of Manning (Dallas Co.) on 26 December 2006 was supported by a large paper nest (290 mm wide) of the red wasp (*Polistes carolina*). The wasp nest was attached to the concrete bridge by a pedicel 30 mm wide. The phoebe nest (210 mm wide) was short and

constructed at an angle, likely due to the narrow space between the wasp nest and the concrete support surface of the bridge. Associations between nesting birds and social hymenoptera may reflect commensal relationships (Beier and Tungbani 2006) but it is not known if both of our observed nests were occupied simultaneously, or if the bird found a convenient site at a vacated wasp nest.



Figure 4. Nest of an Eastern Phoebe constructed in the hollow of a large red wasp nest built under a bridge in Dallas Co. Arrow indicates the pedicel of the wasp nest that attached the nest to the bridge.

CLASS MAMMALIA, ORDER CHIROPTERA:

Records of bats have been updated based on specimens sent to the Arkansas Department of Health for rabies testing, an exhaustive survey of records in institutional museum collections, and from several surveys of bats conducted in the last decade. Specific GPS localities are replaced with section, township, range data, or in some cases omitted, to protect sensitive information concerning species that are endangered or otherwise protected. Each of the records presented documents a new county record for the species.

Mollosidae – Free-tailed Bats.

***Tadarida brasiliensis* (I. Geoffroy St. Hilaire) - Brazilian free-tailed Bat.** Montgomery Co.: An adult female from Norman was submitted for rabies testing on 19 March 2019. Nevada Co.: An adult male from Prescott was submitted for rabies testing on 9 March 2018. Sebastian Co.: 4 adult females and 2 adult males from Greenwood were submitted for rabies testing on 30 January 2019.

Vespertilionidae – Vesper Bats.

***Corynorhinus rafinesquii* (Lesson) - Rafinesque's Big-eared Bat.** Garland Co.: on 21 February 2018, an adult female from Hot Springs was submitted for rabies testing. Randolph Co.: on 1 August 2021, an adult male and an adult female were captured in a mist net set in a field in Sec. 16, T19N, R2E.

***Aeorestes cinereus* (Palisot de Beauvois) - Hoary Bat (formerly in genus *Lasiurus*).** Baxter Co.: 3 adult males were captured in a mist net over a stream in Sec. 15, T17N, R12W on 4 June 2018. Another adult male was captured in a mist net set over a stream in Sec. 14, T16N, R13W on 30 July 2019. Franklin Co.: an adult male was captured in a mist net set over a stream in Sec. 35, T12N, R28W on 24 May 2014. Pope Co.: an adult female was captured in a mist net over a stream in Sec. 13, T10N, R21W on 22 May 2016. Union Co.: 1 was collected on 25 February 1989 (Arkansas State University Museum of Zoology (ASUMZ) 20,761). Van Buren Co.: 2 adult males were captured in a mist net over a stream in Sec. 17, T10N, R17W on 2 June 2014.

***Lasiurus borealis* (Müller) - Red Bat.** IZard Co.: a male was collected at a cave on 28 February 1975 (ASUMZ 921).

***Lasiurus seminolus* (Rhoads) - Seminole Bat.** Calhoun Co.: an adult male was submitted to the Arkansas Department of Health from Hampton on 1 December 2021. Craighead Co.: an adult male was captured in a mist net over a road in Sec. 4, T14N, R4E on 8 June 2022. Newton Co.: an adult female was captured in a mist net over a pond in Sec. 13, T15N, R19W on 24 July 2009. Johnson Co.: an adult male was captured in a mist net over a stream in Sec. 4, T10N, R21W on 22 June 2016. Searcy Co.: an adult female was captured in a mist net set over a road in Sec. 19, T15N, R18W on 20 July 2008. Stone Co.: a juvenile female was captured in a mist net set inside the forest in Sec. 33, T16N, R11W on 19 July 2016.

***Lasionycteris noctivagans* (Le Conte) - Silver-haired Bat.** Franklin Co.: on 20 May 2014, bats were captured in mist nets at 5 locations. One male was captured in Sec. 35, T12N, R28W. One male and 1 pregnant female were captured in Sec. 25, T12N, R28W. Two males were captured in Sec. 10, T11N, R28W, 3 males were captured in Sec. 35, T12N, R28W, and 5 males were captured in Sec. 23, T12N, R28W. Hot Spring Co.: an adult female from Malvern was submitted for rabies testing on 24 February 2021. Logan Co.: on 19 March 2018, an adult female was captured in a mist net set over a trail in in Sec. 32, T7N, R25W. Yell Co.: on 11 April 2018 an adult male was captured in a mist net set over a pond in Sec. 35, T6N, R25W.

***Myotis austroriparius* (Rhoads) - Southeastern Bat.** Conway Co.: On 24 May 2016, 2 researchers separately caught pregnant adult females in mist nets, in Sec. 8, T8N, R16W and Sec. 11, T8N, R17W. Faulkner Co.: on 9 August 2001, 1 adult male and 2 adult females were captured before dawn in a mist net set to capture birds inside a forest on Bell Slough Wildlife Management Area. Grant Co.: a female was collected on 10 July 1986 (ASUMZ 27160). Johnson Co.: on 4 June 2016 an adult male was captured in a mist net set in a forested corridor in Sec. 36, T11N, R22W. Pope Co.: on 15 May 2016, 3 adult females and 1 adult male were captured in a mist net in Sec. 12, T8N, R18W.

***Myotis grisescens* A.H. Howell - Gray Bat.** Crawford Co.: on 16 December 2016, 4 gray bats were observed inside a cave and on 27 May 2019 an adult male was captured in a mist net. Fulton Co.: on 27 July 2021, 3 juvenile females were captured in a mist net set over a stream.

***Myotis lucifugus* (Le Conte) - Little brown Bat.** Perry Co.: a specimen was collected 4.1 mi. (6.6 km) S of Thornburn on 22 June 1977 (University of Arkansas Fayetteville Museum Collections (UAFMC) Catalog # 2011-0005-0015).

***Myotis septentrionalis* (Trouessart) - Small-footed Bat.** Benton Co.: a pregnant female was captured in a mist net set over a stream in Sec. 16, T18N, R32W on 22 May 2018.

***Myotis sodalis* Miller and G.M. Allen - Indiana Bat.** Carroll Co.: on 22 July 2017, an adult female was captured in a mist net over a stream. Crawford Co.: on 21 January 2020, 2 bats were observed inside a cave.

***Nycticeius humeralis* (Rafinesque) - Evening Bat.** Benton Co.: a male from Siloam Springs was submitted for rabies testing on 28 April 1983. Calhoun Co.: a male was collected on 7 July 1966 (Louisiana State University Museum of Natural Science (LSUMNS) 11757). Clay Co.: a male and female were captured in a mist net set in Sec. 10, T19N, R3E on 5 July 2002. Cleveland Co.: 6 specimens including 1 female were collected on 26 August 1965 (LSUMNS 13623, 13670, 13689, 13690, 13691, 13692). Crawford Co.: an adult female from Van Buren was submitted for rabies testing on 25 May 2007. Franklin Co.: On 18 May 2014, bats were captured at 5 separate mist net sites. One adult male was captured in Sec. 15, T11N, R 28W. Four adult males were captured in Sec. 10, T11N, R28W. Four adult males and 2 pregnant females were captured in Sec. 22, T12N, R28W. One pregnant female, 1 non-reproductive female, and 1 adult male were captured in Sec. 30, T12N, R27W. Fulton Co.: a female was collected at Mammoth Spring on 14 June 1910

(National Museum of Natural History 203993). Grant Co.: a juvenile male was submitted for rabies testing on 17 September 2009. Lawrence Co.: a female was submitted for rabies testing on 21 October 1997. Perry Co.: a juvenile male from Perryville was submitted for rabies testing on 4 August 2001. Phillips Co.: an adult male was captured in a mist net set in Sec. 29, T1S, 5E on 7 July 2014. Pike Co.: a female was collected on an unreported date (ASUMZ 27311). Additionally, a juvenile female from Murfreesboro was submitted for rabies testing on 2 July 1993. St. Francis Co.: an adult male from Forrest City was submitted for rabies testing on 7 August 2015. Scott Co.: an adult male from Waldron was submitted for rabies testing on 18 September 1990. Searcy Co.: a male was collected on 28 August 1962 (Museum of Texas Tech University (TTU) 11885). Woodruff Co.: 2 males were captured in a mist net set in a forest opening in Sec. 24, T6N, R2W on 6 June 2015.

***Perimyotis subflavus* F. Cuvier) - Tricolored Bat.** Clay Co.: on 24 July 2021, an adult male was captured in a mist net over dry land inside a forested area, and on 25 July 2021 an adult female was captured in a mist net over a pond, both within the Dave Donaldson Black River Wildlife Management Area.

ORDER EULIPOTYPHLA

Soricidae – Shrews and Moles.

***Blarina brevicauda* (Say) - Northern short-tailed shrew.** The northern short-tailed shrew is known only from the Ozark Plateau and Boston Mountains in northern Arkansas (Pfau *et al.* 2011). A single adult *B. brevicauda* found dead on 5 November 2022 in an open field near Mull (Marion Co.) is a new county record. The nearest documented record is from adjacent Searcy Co. (Connior *et al.* 2014).

ORDER RODENTIA

Sciuridae – Squirrels.

***Marmot monax* (Linnaeus) - Woodchuck.** On 24 September 2021, MBC observed an adult woodchuck feeding on corn dispersed by a deer feeder near Mull (Marion Co.). This appears to be the first documented record of a woodchuck consuming supplemental corn for wildlife. Although there are potential diet benefits to woodchucks by augmenting their diet with supplemental deer feed, it is likely very limited. A study from the upper peninsula of Michigan did not record any woodchucks at white-tailed deer bait sites, although other similarly sized mammals were documented (Bowman *et al.* 2015). Additionally, many areas of the southern United States that traditionally use deer bait for

hunting are outside of the distributional range of woodchucks.

ORDER ARTIODACTYLA

Cervidae – Deer and relatives.

***Odocoileus virginianus* (Zimmerman) - White-tailed deer.** Dental and mandibular pathologies can have substantial impacts on the health of affected individuals. On 5 November 2022, we observed a severe case of osteopathy on the left dentary (Figure 5) of a yearling male deer harvested near Maumee (Searcy Co.). Prior to eruption of the permanent 3rd lower premolar, fracture or infection caused osteomyelitis with bone reconstruction. The lingual aspect of the dentary exhibited almost complete separation of the bone, indicating likely fracture to that side, with bulbous healing of bone on the buccal aspect. Powers and Mead (2019) did not report such damage from a sample of 778 dentaries of deer from central Georgia.



Figure 5. Skull of White-tailed deer (*Odocoileus virginianus*) collected in Searcy Co. showing severe mandibular osteopathy.

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