



The Center for Biological Diversity submits the following information for the status review of the alligator snapping turtle (*Macrochelys temminckii*) (Docket #FWS-R4-ES-2015-0038), including new information on taxonomy, recent status and inadequacy of existing regulatory mechanisms.

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### **Taxonomy**

The alligator snapping turtle (*Macrochelys temminckii*) has historically been treated as a single, wide-ranging species, though geographic variation in alligator snapping turtle morphology (such as number of supramarginal scutes and skull shape) has been described among populations (Pritchard 1989), and other highly aquatic organisms in Gulf Coastal drainages exhibit patterns of drainage-specific endemism, such as the map turtles, *Graptemys* (Ennen et al. 2010).

Roman et al. (1999) explored the population genetic structure of alligator snapping turtles by sequencing two partial genes of the mitochondrial genome and found populations to exhibit drainage-specific haplotypes. Roman et al. (1999) generated a gene tree with three major clades of *Macrochelys temminckii*: a western clade including populations from the Trinity River to the drainages of Pensacola Bay, a central clade from the Choctawhatchee River to the Ochlockonee River, and an eastern (Suwannee) clade restricted to the Suwannee River. Roman et al. (1999) hypothesized the Eastern (Suwannee) clade was basal and sister to a well-supported monophyletic group comprising populations from the central and western distribution. Although Roman et al. (1999) found strong population-level separations among river drainages (8 of 11 haplotypes were observed to be river-specific, providing diagnostic markers for most drainages), and partitioned the species in eastern, central, and western clades based on mtDNA genealogy and coinciding with recognized biogeographic provinces, Roman et al. (1999) did not conclude these three clades were separate species, but advocated for "distinct management units," with the Suwannee River lineage deserving special attention based on the criterion of genetic distinctiveness. Because mtDNA is maternally inherited, Roman et al. (1999) were able to show that female-mediated gene flow was extremely rare among alligator snapping turtle populations in different drainages of the Gulf of Mexico, but were not able to evaluate male-mediated dispersal.

Echelle et al. (2010) analyzed microsatellites from the nuclear genome to further test for population genetic structure, compare phylogeographic patterns between nuclear and

mtDNA, and test for past population bottlenecks. Echelle et al. (2010) used variation at 7 microsatellite DNA loci to assess the possibility of male-mediated gene flow, augmented the mtDNA survey with additional sampling of the large Mississippi River System, and evaluated the hypothesis that the consistently low within-population mtDNA diversity reflects past population bottlenecks. Echelle et al. (2010) found that microsatellite data reinforce the conclusion from mtDNA that genetic exchange must be extremely rare among populations of alligator snapping turtles in different drainages of the Gulf of Mexico, and that the Suwannee River population may represent a distinct taxonomic unit. Echelle et al. (2010) recommended 6 “evolutionarily significant units” comprising populations in the following drainages: (1) Trinity, Neches, and Mississippi; (2) Pascagoula; (3) Mobile and Perdido; (4) Pensacola; (5) Choctawhatchee, Econfinna, Apalachicola, and Ochlockonee; and (6) Suwannee.

A recent paper by Thomas et al. (2014) found three distinct evolutionary lineages of alligator snapping turtles and described two new species of *Macrochelys*, differentiated from the central lineage: the Apalachicola alligator snapping turtle (*Macrochelys apalachicolae*) and the Suwannee alligator snapping turtle (*Macrochelys suwanniensis*). Thomas et al. (2014) reviewed the fossil record, examined morphology, reanalyzed phylogeographic genetic structure, and estimated divergence dating among lineages in a coalescent framework using Bayesian inference. Thomas et al. (2014) measured cranial and post-cranial material on field-captured turtles and museum specimens, analyzed 420 base pairs mtDNA sequence data for 158 turtles, and examined fossil and recent *Macrochelys* to assess historical distributions. Thomas et al. (2014) found that the morphological and molecular data indicate significant geographical variation and suggested three species-level breaks corresponding to previously hypothesized genetic assemblages: the western lineage (*Macrochelys temminckii*); and two new species, *Macrochelys apalachicolae* from the central lineage and *Macrochelys suwanniensis* from the eastern lineage (Suwannee River drainage). Thomas et al. (2014) estimated divergence times suggesting that the most recent common ancestor for *M. temminckii* (western) and *M. apalachicolae* (central) existed 3.2–8.9 million years ago, whereas *M. temminckii*-*M. apalachicolae* and *M. suwanniensis* last shared a most recent common ancestor 5.5–13.4 million years ago.

A more recent paper by Folt and Guyer (2015) argues that the morphological analyses presented by Thomas et al. (2014) do not provide evidence differentiating *Macrochelys apalachicolae* populations from *Macrochelys temminckii*, citing support from a recently published analysis of cranial shape variation among *Macrochelys* populations (Murray et al. 2014), and noting that Thomas et al. (2014) do not provide evidence resolving nuclear-mitochondrial discordance from Echelle et al. (2010). Folt and Guyer (2015) argue the taxonomy should be revised to recognize two alligator snapping turtle species: the alligator snapping turtle (*Macrochelys temminckii*), a broadly-distributed taxon in Gulf Coastal drainages from the San Antonio River east to the Ochlockonee River; and the Suwannee alligator snapping turtle (*Macrochelys suwanniensis*), a narrow-ranged endemic taxon in the Suwannee River. Folt and Guyer (2015) assert that the Apalachicola alligator snapping turtle (*Macrochelys apalachicolae*) is not a valid species. Folt and Guyer (2015) provide a morphological key (based on the distance between the distal tips of the 11th and 12th marginal scutes) for differentiating the alligator snapping turtle (*Macrochelys temminckii*) from the Suwannee alligator snapping turtle (*Macrochelys suwanniensis*).

There is certainly sufficient evidence that the Suwannee alligator snapping turtle (*Macrochelys suwanniensis*) is a distinct species. The U.S. Fish and Wildlife Service should evaluate whether any other populations of alligator snapping turtle described as “distinct management units” by Roman et al. (1999) or as “evolutionarily significant units” by Echelle et al. (2010) comprise distinct species or qualify as Distinct Population Segments.

### **Recent Status by State**

#### Alabama

The species is uncommon to rare in Alabama in streams south of the Tennessee River, very rare in the Tennessee River system, and most numerous in the coastal plain (ADCNR 2015). Many populations in Alabama have not recovered from widespread harvest (Soehren 2011). Folt and Goodwin (2013) reported on depleted and reduced alligator snapping turtle populations in southern Alabama due to historic commercial collecting. Folt and Goodwin (2013) analyzed 8 seasons of turtle-trapping data from 11 major rivers in southern Alabama, with relatively low overall catch per unit effort compared with recent studies from other states. Mortality from baited limb lines, trotlines, and hoop nets for fishing that are not regularly attended are a concern in Alabama, since as opportunistic scavengers, alligator snapping turtles can easily be hooked or trapped underwater placing them at risk of drowning (Soehren 2011).

#### Arkansas

Wagner et al. (1994) reported depressed populations of sexually mature alligator snapping turtles in Arkansas counties that had been open to commercial turtling in the past; Trauth et al. (1998) reported on lasting impact of overharvest in two streams in northeastern Arkansas followed by a near absence of adult recruitment from neighboring creeks. Howey and Dinkelacker (2013) demonstrated long-term impacts of past commercial harvest on a population of alligator snapping turtles in the East Fork Cadron Creek in central Arkansas, with few large adults, a highly female-biased adult sex ratio, and low population density found during a mark–recapture study from 2005–2007.

#### Florida

Overharvest depleted alligator snapping turtle populations in many Florida rivers (FFWCC 2011) and there is no evidence the statewide population has stabilized or begun to increase (Ewert et al. 2006). Illegal harvest in Florida has also been a concern: in 1992, 33 adult and subadult alligator snapping turtles illegally taken from the Apalachicola River basin in Florida were intercepted and confiscated during transport to Louisiana (Moler 1996). The Florida alligator snapping turtle population is severely fragmented, subject to continued mortality from bycatch on lines set for fish (especially catfish) and impacted by pollution and dams (Ewert et al. 2006; Pritchard 2006; FFWCC 2011). In Florida, the species can be found in the Panhandle and Big Bend regions, from the Escambia River east to the Suwannee River (Ewert et al. 2006; Pritchard 2006). Pritchard (2006) concluded the species was scarce in Florida within the Suwannee River and the Okefenokee Swamp. Thomas (2103) found that alligator snapping turtles in the Suwannee are more numerous than previously thought, but several threats exist including fish hook ingestion, boat propeller damage, and the removal of woody debris.

## Georgia

Alligator snapping turtle populations are depleted in many parts of Georgia due to historic overharvest (Johnson 1989; Folt and Goodwin 2013; King and Smith 2014; GDNR 2015). Targeted exploitation of the species depleted the Flint River population (van Dijk and Rhodin 2010). Surveys in the upper Suwannee River in Georgia (Jensen and Birkhead 2003) failed to capture the species despite intensive sampling. Potential snagging and ensnarement in trotlines and bush-hooks is a concern (GDNR 2015).

King and Smith (2014) re-surveyed the Flint River between Lake Seminole and Salem, Georgia, from May through September 2014, to assess the current status of the alligator snapping turtle. King and Smith (2014) surveyed approximately 328 km (43 sections) of the Flint River and Lake Blackshear; their data suggested low numbers of alligator snapping turtles remain in the Flint River despite 25 years of protection from harvest, with possible explanations being the slow growth of the species, delayed maturity, and low reproductive output, as well as possible ongoing mortality due to human activities such as illegal take, limb/trot lines, or drowning in submerged traps as by-catch. King and Smith (2014) found that though the alligator snapping turtle population in the lower reach of the Flint River (which was one of the more heavily harvested areas in the 1970s) may have increased over the past 25 years, the population is still at low numbers. The average mass of turtles increased from a Johnson (1989) Flint River survey to the 2014 survey, capture of juvenile turtles increased (suggesting reproduction is occurring), but the number of adult females decreased (King and Smith 2014).

King and Smith (2014) noted heavy historic harvest of alligator snapping turtles from the Flint River, with one trapper collecting 4,000-5,000 turtles from the river and its tributaries from 1971-1983 (Johnson 1989), and an estimated a catch per unit effort (CPUE) of 1.0 alligator snapping turtle per trap-night over this period. King and Smith (2014) noted a previous Flint River survey by Johnson (1989) which yielded captures of 62 alligator snapping turtles and a CPUE of only 0.08 turtles per trap-night (Johnson 1989). King and Smith (2014) captured 56 alligator snapping turtles in 643 trap-nights, yielding an overall CPUE of 0.09 alligator snapping turtles/ trap-night. Though overall trapping success for alligator snapping turtles in the King and Smith (2014) survey was slightly higher than in the Johnson (1989) survey, trapping methods may have differed, and the CPUE in 2014 was much lower than that reported for another Georgia stream, Spring Creek, where Jensen and Birkhead (2003) captured 0.45 alligator snapping turtles/ trap-night from 1993-1996 using similar trapping methods to the King and Smith (2014) study.

## Illinois

There have been less than 20 confirmed records of alligator snapping turtles in Illinois; some consider the species an infrequent visitor, the result of rare, long-distance migrants from the south via the large rivers, and question all records north of St. Louis (INHS 2015). The most recent record for the state is from 1984. Bluett et al. (2011) were unable to locate any alligator snapping turtles during surveys of 18 sites in southern Illinois and concluded that the species is likely extirpated from Illinois. Reed et al. (2002) and the Illinois Department of Natural Resources (IDNR 2005) also believe the species to be extirpated from Illinois. The IDNR announced plans to reintroduce the species to Illinois waters in 2005.

## Indiana

The status of the alligator snapping turtle in Indiana is uncertain (INDNR 2015). Records of the species from extreme southwestern Indiana dated back to the 1800s, but very few alligator snapping turtles have been taken in the past decades; no specimens have been documented in the state since a single alligator snapping turtle was found in 1991 near the White River in Morgan County (INDNR 2015). Alligator snapping turtle populations in Indiana are thought to be extirpated or very near extirpation (Reed et al. 2002; NatureServe 2011; INDNR 2015).

## Iowa

In Iowa, alligator snapping turtles have been found only in the Mississippi River in the southeastern part of the state, where the species is uncommon (IADNR 2001).

## Kansas

Shipman et al. (1993) found a lack of evidence for reproducing populations in Kansas. Alligator snapping turtle populations in Kansas are thought to be generally small or extirpated (Reed et al. 2002). Kansas records show no evidence of a viable breeding population (NatureServe 2011).

## Kentucky

Alligator snapping turtle populations in Kentucky are thought to be generally small or extirpated, with populations mainly in western Kentucky in large river systems such as the Mississippi, lower Ohio, and lower Tennessee and Cumberland Rivers (Reed et al. 2002; KDFWR 2013). A multi-year (2003-2012) focused survey targeting areas with historical records and other suitable habitat within 10 counties in western Kentucky failed to locate any alligator snapping turtles (Baxley et al. 2014).

## Louisiana

Overharvest caused documented declines and local extirpations of alligator snapping turtles throughout Louisiana (Platt 1994; Smith 2002; Boundy and Kennedy 2006). The species was found in the Pearl, Pontchartrain, Barataria, Atchafalaya, Vermilion-Teche, Mermentau, Calcasieu, Sabine, Red and Ouachita river basins in Louisiana, based on mark-release data obtained during the late 1990s; but the population trend for these basins is unknown (LDWF 2005, 2015b).

## Mississippi

The status of the alligator snapping turtle in Mississippi is unknown.

## Missouri

In Missouri, alligator snapping turtles are known to occur in the lower sections of the Mississippi River and lower Illinois River (Johnson and Briggler 2012) and are presumed to occur in the large rivers, sloughs, and oxbow lakes of southern, southeastern, and eastern Missouri (MDOC 2015b). The species is rare and declining in the state due to water pollution, habitat loss, reduction of egg-laying sites, and overharvesting (MDOC

2015b). Shipman and Riedle (2008) noted a significant difference in alligator snapping turtle sizes between sites in southeastern Missouri that had experienced historical take and those that had not. A survey of alligator snapping turtle populations in New Madrid, Mississippi and Dunkin and Pemiscott counties in Missouri revealed that 90 percent of the habitat for the species in this area is gone (NatureServe 2011). Lescher et al. (2013) re-surveyed 6 sites in Missouri in 2009 that were sampled for alligator snapping turtles from 1993-1994, and found significantly fewer alligator snapping turtles and a significantly different distribution of the population structure.

#### Oklahoma

Heck (1998) reported on probable drastic declines in alligator snapping turtle populations in southeastern Oklahoma. Riedle et al. (2005) also concluded that dramatic population declines had taken place in Oklahoma, with a decrease in range and few sites in the state with healthy populations. A population at Sequoyah National Wildlife Refuge along the Arkansas River that was one of only two populations thought to be stable in eastern Oklahoma (Riedle et al. 2005); this population was shown more recently to actually be in decline (East et al. 2013). Alligator snapping turtle populations in Oklahoma are thought to be generally small or extirpated (Reed et al. 2002). The species is currently restricted to portions of the Arkansas River and Red River watersheds in the eastern part of the state (ODWC 2009, 2015).

#### Tennessee

Alligator snapping turtle populations in Tennessee are thought to be generally small or extirpated (Reed et al. 2002). The Tennessee Wildlife Resources Agency has initiated a restoration project to reintroduce the species into major Mississippi River drainages in western Tennessee.

#### Texas

Alligator snapping turtles are restricted to wetter locations of east Texas, in the Trinity and Sabine River watersheds (TPWD 2008). The status of the species in Texas is unknown.

#### Utah

The Utah Division of Wildlife Resources states that alligator snapping turtles are not native to Utah, but that there is a breeding population in Utah in the lower Weber River (UDWR 2015).

### **Inadequacy of Existing Regulatory Mechanisms**

#### CITES

The alligator snapping turtle was placed on the CITES (Convention on International Trade in Endangered Species) Appendix III list in June 2006, a designation which allows trade to continue with monitoring. Export numbers from 1999-2009 demonstrated that trade in alligator snapping turtles has not curtailed. According to LEMIS of the USFWS, 97,336 wild-caught alligator snapping turtles were permitted for export from the United States from August 5, 1999 to May 5, 2009; and 72,095 of these were permitted for

export after 2006, when they were placed on Appendix III of CITES (*CBD FOIA Request to the FWS LEMIS*, April 28, 2009). The USFWS also permitted for export 165,208 alligator snapping turtles labeled as: C (animal derivatives and parts), D (commercially bred), F (resolution conf. 10.16), or R(originating in ranching); and 51 with an undetermined or unknown source.

Although commercial harvest of alligator snapping turtle is now prohibited across its range in states along the Gulf Coast and Mississippi River, wild caught adults continue to be sold by licensed turtle dealers in Louisiana, who allege to have possessed the adults prior to November 2004, when Louisiana closed commercial harvest. Adults are also sold by a Missouri turtle dealer who utilizes the same allegation. These dealers sell adult alligator snapping turtles for thousands of dollars each to private turtle collectors, private and public zoos and aquariums, who want them because of their huge size and dragon-like appearance. From 1994-2007 turtle dealers in Missouri, Arkansas and Louisiana raced to stockpile adult alligator snapping turtles from the wild under the auspices that they were saving them from being sold at seafood markets in Louisiana; alligator snapping turtles have been traditionally consumed in the south and sold as an expensive delicacy, "Turtle Sauce Piquante," at five star New Orleans restaurants. Dealers were actually targeting the species as broodstock to support an international food and turtle trade market. Hatchlings from such wild caught adults appear to be the majority of exports to Asia to the pet trade and as food or Traditional Chinese Medicine. The USFWS has documented continued illegal hunting of adult alligator snapping turtles to supply the international food and turtle trade (*U.S. v. Guthrie*, 50 F3d 936, 11th Cir. 1995).

Since the submission of the 2012 petition to list the alligator snapping turtle under the Endangered Species Act, the USFWS posted notice that it may propose changing the CITES status of the species from Appendix III to Appendix II (trade permitted at levels that do not threaten the survival of the species), at the September 2016 CITES meeting (USFWS 2015). This change could convey some degree of protection to the alligator snapping turtle, but would allow continued trade and would still be inadequate to ensure the continued survival of the species, due to many collectors misrepresenting wild-caught turtles as captive bred. Increased CITES protection does not protect snapping turtles from ongoing illegal trade. For example, a 2007 survey of 25 markets and 50 luxury restaurants in five cities in southern China found a total of 56 wildlife species being sold, of which 8 species were protected animals under Chinese law and 17 species were protected under CITES Appendix I and Appendix II (WWF 2007).

### State Harvest Regulations

Although the alligator snapping turtle is listed as threatened, endangered, or a species of concern in nearly every state within its range (Buhlmann and Gibbons 1997; Nanjappa and Conrad 2011), and harvest regulations have generally eliminated legal commercial harvest of wild alligator snapping turtles in recent years, collection remains a threat. Louisiana and Mississippi still allow "personal" harvest of alligator snapping turtles and Florida and Utah still allow possession of the species. Many states have seasons on the similar-looking common snapping turtle, with potential for inadvertent capture. Another concern is incidental mortality of alligator snapping turtles from fishing gear such as trotlines and hoop nets (Glass 1949; Shipman 1993; Heck 1998; Ewert et al. 2006; Pritchard 2006; Soehren 2011; Moore et al. 2013; GDNR 2015). Many states within the range of the species allow the use of this fishing gear in alligator snapping turtle habitat.

## Alabama

The alligator snapping turtle is protected in Alabama as a Species of Concern, with regulation 220-2-92 prohibiting take, possession or commercial activity (Nanjappa and Conrad 2011). Alabama ended commercial harvest of all wild turtles and their eggs in public and private waters in 2012.

## Arkansas

The Arkansas Game and Fish Commission (AGFC) ended unlimited commercial harvest of alligator snapping turtles in 1994. In 1995 the AGFC instituted permits for aquaculture of alligator snapping turtles; since 2000, the agency has given out an average of 8 alligator snapping turtle breeder/dealer permits per year (Nanjappa and Conrad 2011). Alligator snapping turtles are now protected in Arkansas from harvest or commercial collection (Irwin 2007; Nanjappa and Conrad 2011). However, alligator snapping turtles overlap in range with other non-protected turtle species in Arkansas and trappers often can not distinguish alligator snappers from common snappers and coin both species simply as "loggerheads." The AGFC has records of state licensed collectors misidentifying turtle species (Irwin 2007). Mortality from incidental catch is also a concern (Howey and Dinkelacker 2013); Arkansas law allows turtle collectors to deploy an unlimited number of baited box traps and hoop nets to harvest other species of freshwater turtles.

## Florida

Beginning in 1973, enactment of a series of protective rules in Florida reduced the rate of decline of alligator snapping turtles in Florida, although harvest (legal and illegal) still occurred. Legal take of alligator snapping turtles was prohibited by rule changes enacted by the Florida Fish and Wildlife Conservation Commission (FFWCC) in 2009. No person may take snapping turtles from the wild in Florida for any purpose, nor buy, sell, or possess for sale any alligator snapping turtle. Florida also has a similarity of appearance rule, which prohibits taking common snapping turtles due to similarity with alligator snapping turtles. However, it is legal to possess one alligator snapping turtle in Florida for non-commercial use, under Florida Administrative Code § 68(A)-25.002(6)(2007).

In Florida the species is now designated as a Species of Special Concern. Though there is no evidence the statewide population has stabilized, in 2011 the FFWCC not only rejected a request to list the alligator snapping turtle as a state Threatened Species, but proposed removing it from the Species of Special Concern list altogether (FFWCC 2011). The FFWCC justified removing protections by stating that that should there be a catastrophic event in Florida that eliminated populations of alligator snapping turtles, there could be a rescue effort with turtles from outside Florida (FFWCC 2011); however the Suwannee alligator snapping turtle is a distinct species which can not be replaced by importing turtles from other drainages. As of 2013, the FFWCC had not removed the alligator snapping turtle from the Species of Special Concern list (FFWCC 2013).

## Georgia

The species is protected as a state Threatened Species in Georgia and take of wild alligator snapping turtles is prohibited (GDNR 2008; Nanjappa and Conrad 2011).



## Illinois

The alligator snapping turtle is protected as a state Endangered Species in Illinois (Nanjappa and Conrad 2011; IESPB 2015). Any species listed as endangered or threatened in Illinois receives protection from take, and all wild native reptiles are protected from commercialization by statute.

## Indiana

The alligator snapping turtle is protected as a state Endangered Species in Indiana and harvest is prohibited (INDNR 2011; Nanjappa and Conrad 2011).

## Iowa

Iowa law prohibits the take, possession or sale of alligator snapping turtles (Nanjappa and Conrad 2011).

## Kansas

Originally listed as a Kansas Threatened Species in 1978, the alligator snapping turtle is now considered a Species in Need of Conservation (KWPT 2015). Harvest is regulated as a nongame species in Kansas (PARC 2011). Kansas law prohibits the take of any wildlife unless the take is specifically allowed by law or regulation; and there is no allowed take of alligator snapping turtles. Of possible concern is a year-round season in Kansas on the similar-looking common snapping turtle, which may be taken by hand, hook and line, setline, hand dip net, seine, turtle trap, or gig.

## Kentucky

Kentucky law prohibits the harvest of alligator snapping turtles, and it is illegal to possess the species (Kentucky Administrative Regulation 301 KAR 2:081). The alligator snapping turtle is listed as Threatened under Kentucky's Wildlife Action Plan (KDFWR 2013).

## Louisiana

Louisiana was the last state to allow unlimited commercial harvest of alligator snapping turtles, ending the practice in 2004. It is a Species of Conservation Concern in Louisiana and is listed as a Species of Greatest Conservation Need in the Louisiana State Wildlife Action Plan. There is now no allowed take of alligator snapping turtles for commercial purposes: no person may commercially take, possess, sell, purchase, trade, barter, or exchange alligator snapping turtles, their eggs, or any parts thereof (Nanjappa and Conrad 2011).

However, personal recreational harvest of alligator snapping turtles is still allowed in Louisiana; with a take or possession limit of one alligator snapping turtle per boat or vehicle per day, with no aggregate limit for possession (Nanjappa and Conrad 2011; LDWF 2015a). As Louisiana has long been a hub of legal and illegal commercial harvest of alligator snapping turtles, this personal harvest loophole has resulted in resident and nonresident turtle breeders paying Louisiana residents to harvest and sell as many

alligator snappers as possible, including prized large trophy adult males, which often sell for more than \$2,000 each. The Louisiana Department of Wildlife and Fisheries does not require reporting on the quantity of turtles captured, the species, the harvest locale, or the destination of captured turtles. Licensed turtle farmers and dealers in Louisiana can also continue to engage in the commerce of adult alligator snapping turtles legally captured prior to the 2004 moratorium, and Louisiana dealers continue to sell alligator snapping turtles of supposed legal origin into the international market.

#### Mississippi

The Mississippi Department of Wildlife, Fisheries, and Parks recognizes the alligator snapping turtle as a Nongame Species in Need of Management, but allows personal harvest of alligator snapping turtles, with a possession limit of one turtle, and a minimum carapace length of 24 inches; the season is open July 1 through May 31 (Nanjappa and Conrad 2011; MDWFP 2015). Mississippi permits trade in farm-reared alligator snapping turtles.

#### Missouri

The alligator snapping turtle is designated as a state Imperiled Species in Missouri (MDOC 2015a). Missouri law prohibits the importation, transportation, sale, purchase, taking, or possession of alligator snapping turtles (MDOC 2015b).

#### Oklahoma

The alligator snapping turtle is classified as a Species of Special Concern in Oklahoma and a year-round closed season prohibits the trapping, possession or killing of the species (ODWC 2015).

#### Tennessee

The alligator snapping turtle is a Species of Greatest Conservation Need in Tennessee's wildlife action plan, and take is illegal (TWRA 2005). The species is considered "rare to very rare and imperiled" by the Tennessee Department of Environment and Conservation (TWRA 2015).

#### Texas

The alligator snapping turtle is protected as a state Threatened Species in Texas and may not be collected (TPWD 2010). The Texas Parks and Wildlife Department prohibited all commercial harvest of all turtles from public waters in Texas in 2007. The Texas nongame animal law allows the use of hoop nets and box traps which can take and drown alligator snapping turtles. Recent mortality from fish hooks has been documented (Texas Turtles 2015).

#### Utah

Collection or possession of wild alligator snapping turtles in Utah is prohibited, although an unlimited number of dead alligator snapping turtles can be collected or possessed (UDWR 2015). Propagation, importation or possession of alligator snapping turtles legally obtained outside of Utah is prohibited (UDWR 2015).

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