

BEFORE THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES
PETITION TO END UNLIMITED COMMERCIAL HARVEST OF 20 FRESHWATER
TURTLE SPECIES OR SUBSPECIES



Pearl River Map Turtle (*Graptemys pearlensis*)
Photograph courtesy of Timothy J. Walsh

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GULF RESTORATION NETWORK

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Notice of Petition

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Pursuant to Louisiana Revised Statutes § 49:953(C) (2016), the Center for Biological Diversity and Gulf Restoration Network hereby petition the Louisiana Department of Wildlife and Fisheries to end the unlimited commercial collection of 20 species or subspecies¹ of native freshwater turtles in the state. Commercial collection of wild turtles contributes to turtle declines in the state and across the country, intensifying the impacts of water pollution, habitat loss, road mortality, and incidental take from fishery devices, which already contribute to population declines in the state and across the country.

The Center for Biological Diversity (Center) is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center is supported by more than one million members and online activists throughout the United States, including approximately 7,430 members and supporters in Louisiana. The Center and its members are concerned about the conservation of rare wildlife—including turtles—and their essential habitats.

The Gulf Restoration Network is a network of environmental, social justice, and citizens' groups and individuals committed to empowering people to protect and restore the natural resources of the Gulf of Mexico for future generations.

¹ For the sake of clarity and succinctness, this number includes one estuarine species, the diamondback terrapin (*Malaclemys terrapin*).

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I. INTRODUCTION

Turtles are the oldest living group of reptiles on earth, with fossil evidence suggesting they were alive over 200 million years ago. Although turtles thrived on this planet for millions of years, they are now among the most threatened of any major group of vertebrates. Forty percent of all turtles are threatened according to the International Union for Conservation of Nature (Rhondin & van Dijk 2010).

Wild collection is the primary driver of turtle declines across the world (Bohm et al. 2013). Overexploitation has caused population declines in almost all turtle species that are not extinct, critically endangered, or rare (Klemens and Thorbjarnarson 1995), and it contributes to population declines also caused by water pollution, habitat loss, road mortality and other threats (Moll and Moll 2004; Schlaepfer et al. 2005). Turtles are beneficial scavengers that feed on water plants, dead animals, snails, aquatic insects, and crayfish. Population declines due to overexploitation can cause changes in energy flow, nutrient cycling, and food web structure (Mali et al. 2014).

The large-scale commercial harvest of freshwater turtles in Louisiana and across the country poses a significant threat to the future of Louisiana's populations of wild freshwater turtles. Overutilization of imperiled turtle species is problematic because the reproductive success of long-lived reptile species is dependent on high adult survivorship, and population declines occur when adults are harvested (Brooks et al. 1991, Heppell 1998, Pough et al. 1998, Congdon et al. 1993, 1994).

In recognition of the devastating population declines caused by wild collection and due to intensive commercial harvest regimes in the southern United States, state wildlife agencies in North Carolina, Alabama, and Mississippi have banned unlimited commercial harvest of all native freshwater turtles. More recently, in 2009, the Florida Fish and Wildlife Conservation Commission banned commercial harvest of all freshwater turtle species found in the state. In 2007, Texas Parks and Wildlife Department banned commercial collection of native Texas turtles on public lands and waters, with an allowance for commercial capture from private property for a few more common species. In 2012, Georgia Department of Natural Resources placed numerical limits on the commercial harvest of wild turtles.

Nevertheless, the Louisiana Department of Wildlife and Fisheries continues to allow unlimited commercial harvest of 20 native freshwater turtle species or subspecies in the state, so long as the collector has a reptile and amphibian collector's license, which may be obtained for a fee. La. Admin. Code tit. 76, pt. XV § 101(G), (I) (listing native or established turtles in Louisiana and permitting licensed commercial harvest of all turtle species that are not protected); La. Rev. Stat. Ann § 56:632.4(A) (setting out the fees for resident and nonresident collector's licenses, which are required to sell reptiles and amphibians collected in Louisiana). The diamondback terrapin, an estuarine turtle species, can be harvested in unlimited numbers during an open season. La. Rev. Stat. Ann. § 56:635 (setting open and closed seasons for taking wild diamondback terrapin and limiting the method of take but not the number of turtles that may be taken); *see also* Louisiana Department of Wildlife and Fisheries, *Commercial Reptile and Amphibian Collecting, Regulations*, http://www.wlf.louisiana.gov/fishing/reptile_amphib-regulations (last accessed Oct.

18, 2016) (acknowledging a size limit for diamondback terrapins). Only seven freshwater turtle species are protected from commercial harvest. La. Rev. Stat. Ann. § 56:637.1(B)(1)(b) (2016) (“There shall be no taking of wild box turtles for commercial purposes.”); La. Admin. Code tit. 76, pt. XV § 101(G)(2)(a)–(b) (2016) (stating “no person shall commercially take . . . restricted turtles, their eggs, or any parts thereof” and defining restricted turtles to include the alligator snapping turtle (*Macrochelys temminckii*), razor-backed musk turtle (*Sternotherus carinatus*), and box turtles (*Terrapene sp.*)²); La. Admin. Code tit. 76, pt. XV § 101(J)(4)(g)–(h) (stating that the gopher tortoise (*Gopherus polyphemus*) and ringed sawback (or ringed map) turtle (*Graptemys oculifera*) “are listed as threatened or endangered in Louisiana . . . and may not be collected”). Consequently, Louisiana’s freshwater turtles are vulnerable to wild collection in large numbers for the food and pet trade. This harvest poses a significant risk to the future of Louisiana’s wild freshwater turtle populations.

The secretary of the Department of Wildlife and Fisheries “shall have the authority to prohibit the commercial harvest or importation of any species of reptile or amphibian, provided that such a decision is based on accurate biological data or other technical information that indicated such species would interfere with the state’s natural ecosystem.” La. Rev. Stat. Ann. §56:632(A). Additionally, the Louisiana Wildlife and Fisheries Commission “shall have the authority to set seasons, establish harvest restrictions, and adopt other rules and regulations that it deems necessary to manage Louisiana’s reptile and amphibian resources.” La. Rev. Stat. Ann. § 56:632(B). In light of scientific evidence of the devastating impacts of unlimited commercial harvest on Louisiana’s freshwater turtles and ecosystems, administrative power and duty lies with the Department of Wildlife and Fisheries to prohibit the unsustainable commercial harvest of freshwater turtles in the state.

Louisiana law provides that “[a]n interested person may petition an agency requesting the adoption, amendment, or repeal of a rule.” Each agency is required to “[w]ithin ninety days after submission of a petition, . . . either deny the petition in writing, stating reasons for denial, or . . . initiate rule making proceedings.” La. Rev. Stat. Ann. § 49:953(C) (2016). Under this authority and for the reasons explained below, Petitioners request that the Louisiana Department of Wildlife and Fisheries grant this petition and initiate rulemaking proceedings to end unlimited commercial collection of the state’s wild, freshwater turtles within ninety days.

II. BACKGROUND

A. The Commercial Turtle Trade in the U.S.

The United States has the greatest richness of turtles in the world, with 89 species and subspecies of turtle (Rhondin & van Dijk 2010; Bohm et al. 2013), and it has developed into a significant exporter of wild-collected adult turtles. Most turtles harvested in the United States are exported to supply food and medicinal markets in Asia, where turtle consumption rates have soared and native turtle populations have rapidly depleted (Klemens and Thorbjarnarson 1995; Gibbons et al. 2001; Reed and Gibbons 2003). China is the biggest consumer of turtles in the food trade and has long commercially harvested native turtles for food and traditional Chinese medicine, driving most populations to depleted levels and even extinction in the wild (Behler 1997; Chen et al.

² Three species of box turtle can be found in Louisiana, the three-toed box turtle (*Terrapene triunguis*), eastern box turtle (*Terrapene carolina*), and ornate box turtle (*Terrapene ornate*) (Powell et al. 2016).

2009). Most turtle species in Vietnam and southern China are endangered, and there are reports that turtles can no longer be found in the wild in Vietnam (Kiestler and Juvik 1997). Consumers of Asian cuisine prize America's softshell turtles in particular because they appear similar to endemic Asian softshell turtle species that have been depleted by the food trade (Christiansen 2008).

Large scale turtle harvest is organized as a pyramid scheme, including trappers, middlemen, and dealers (Mali et al. 2014). Turtle dealers usually have an interstate network of several hundred employees capable of exporting thousands of turtles a year (Mali et al. 2014). Large adults are the most valuable on the meat market and are a primary target of commercial turtle trappers (Close and Seigel 1997; Ceballos and Fitzgerald 2004). Yet the adult life stage is the most sensitive to harvest (Heppell 1998; Congdon et al. 1993; Congdon et al. 1994; Zimmer-Shaffer et al. 2014).

The available data on turtle exports from the United States indicate that export-driven exploitation in Louisiana has targeted the red-eared slider (*Trachemys scripta elegans*), common snapping turtle (*Chelydra serpentina*), and spiny softshell (*Apalone spinifera*), in particular. Some of the smaller hard-shelled turtle species are also targeted, including diamondback terrapins and map turtles. While export levels of freshwater turtles from the United States appear variable, the long-term trend shows an increase in trade for most species (Weissgold 2010). Louisiana has become a huge exporter of wild-caught turtles. The number of wild-caught turtles exported from Louisiana increased from 80,050 in 2008 to 6,386,030 in 2009 and has remained high (Mali et al. 2014).

B. Commercial Collection of Wild Turtles in Louisiana

Louisiana continues to allow unlimited commercial harvest of 19 native, freshwater turtle species or subspecies in the state: common snapping turtle (*Chelydra serpentina*), southern painted turtle (*Chrysemys picta dorsalis*), eastern chicken turtle (*Deirochelys reticularia reticularia*), western chicken turtle (*Deirochelys reticularia miaria*), Mississippi map turtle (*Graptemys pseudographica kohnii*), Ouachita map turtle (*G. ouachitensis*), Sabine map turtle (*G. sabinensis*), northern map turtle (*G. geographica*), Pearl River map turtle (*G. pearlensis*), Mississippi diamondback terrapin (*Malaclemys terrapin pileata*), river cooter (*Pseudemys concinna* complex), red-eared slider (*Trachemys scripta elegans*), Mississippi mud turtle (*Kinosternon subrubrum hippocrepis*), stripe-necked musk turtle (*Sternotherus minor peltifer*), eastern musk turtle ("stinkpot") (*Sternotherus odoratus*), midland smooth softshell (*Apalone mutica*), Gulf Coast smooth softshell (*Apalone calvata*), Gulf Coast spiny softshell (*Apalone spinifera aspera*), eastern spiny softshell (*Apalone spinifera spinifera*), and pallid spiny softshell (*Apalone spinifera pallida*).³ La. Admin. Code tit. 76, pt. XV § 101(A), (G), (I)–(J) (listing all state-recognized native or established turtles in Louisiana; permitting licensed commercial harvest of all turtles except those that have special protections; and setting regulations for harvest of turtles, including bans and limitations on harvest of certain species).

Holders of a reptile and amphibian collector's license may commercially take unlimited numbers of the above-referenced turtles from the wild, as well as unlimited numbers of red-eared slider

³ This list of turtles is based on the 2016 publication of Powell, Conant, and Collins' Peterson Field Guide to Reptiles and Amphibians of Eastern and Central North America, Fourth Edition (Powell et al. 2016).

eggs.⁴ La. Admin. Code tit. 76, pt. XV § 101(G)(1)(e); La. Rev. Stat. §§ 56:632.4, 56:635(A). To obtain a permit, a prospective collector need only disclose all information requested by the Louisiana Department of Wildlife and Fisheries, provide proof of residency (if seeking a resident license), and pay a small fee. La. Rev. Stat. §§ 56:632.4, 56:636.

From 2002–2004, Louisiana and California accounted for 96% of the overall turtle exports from the United States; from 2004–2012, Louisiana was the largest exporter of turtles (Mali et al. 2014). From 2008–2012, exports of captive-bred turtles plummeted as exports in wild-captured turtles rose significantly (Mali et al. 2014). Ninety six percent of all turtle species traded from Louisiana were of the genus *Pseudemys* (cooters) or *Trachemys* (sliders) (Mali et al. 2014).

In the last five years, available data on turtle exports from the United States indicate that Louisiana exported more than 16,000,000 wild-caught turtles, the vast majority of which were species that are native to the state. Exported wild-caught, native turtles included 12,434,051 red-eared sliders; 639,740 map turtles; 285,414 common snapping turtles; 281,935 river cooters⁵; 217,382 common musk turtles (stinkpots); 128,971 razorback musk turtles⁶; 49,969 alligator snapping turtles⁷; 48,285 painted turtles; 25,294 spiny softshell turtles; 5,165 diamondback terrapins; 4,336 mud turtles; 700 Florida cooters; 5 striped-neck musk turtles. Although these numbers reflect export numbers rather than harvest numbers, they demonstrate that Louisiana’s current regulations allow for stunning numbers of turtles to leave the United States. Further, because Louisiana has some of the most permissive harvest regulations in the Southeast, and the majority of the species exported are native to the state of Louisiana, it may be inferred that a proportion of these large exports originates in state. It should also be noted that these numbers likely underestimate the actual amount of harvest because they express only legal exports and do not reflect unreported collection or illegal export.

Until recently there was no reporting requirement for freshwater turtles commercially sold or transferred in Louisiana, so there are no state-specific data on wild turtles commercially traded. On May 19, 2016, Governor John Bel Edwards signed House Bill 423 into law, which amended Louisiana Revised Statute Section 56:637 to state: “Any wholesale/retail dealer who purchases reptiles or amphibians shall complete a commercial receipt form and return all commercial receipt forms to the department in the same manner as provided in R.S. 56:306.5(B) and 306.6.” La. Rev. Stat. § 56:637(E). The statute became effective August 1, 2016. *Id.* As state-specific commercial data become available, we urge Louisiana Department of Wildlife to consider it in conjunction with the information presented in this Petition.

⁴ Though Mississippi diamondback terrapins enjoy some protection from a brief closed season between April 15 and June 15, size limits, and limits on the use of traps and nets, there is no limit on the number of terrapins a person may collect during the extensive open season. La. Rev. Stat. § 56:635(A)–(B).

⁵ An additional 166,901 unidentified species of cooter were also exported from Louisiana.

⁶ On May 20, 2016, the Louisiana Department of Wildlife and Fisheries and Louisiana Wildlife Fisheries Commission placed a moratorium on the commercial harvest of wild razorback musk turtles. 42 La. Reg. 762 (May 2016).

⁷ The source of alligator snapping turtles exported from Louisiana is unclear. In 2004, Louisiana listed alligator snapping turtles as “restricted turtles” that cannot be commercially taken or traded, La. Admin. Code tit. 76, pt. XV § 101(G)(2)(B); 30 La. Reg. 2495 (Nov. 2004); however, there is an exception for licensed turtle farmers who wish to sell or possess turtles that were either acquired prior to 2004 or legally imported into the state with proper records. La. Admin. Code tit. 76, pt. XV § 101(G)(2)(B).

In Louisiana, there are no data available on population size or structure for many of these species and no indication of the effects of commercial harvest on population sustainability. However, studies of some species have indicated declines related to commercial harvest. Lovich et al. (2009) recognized localized declines in populations of Pascagoula map turtle in Louisiana. They specifically found that Louisiana populations of Pascagoula map turtles that occur within the Lower Pearl and Bogue Chitto rivers are threatened due to recent extensive collection of individuals for the pet trade (Lovich et al. 2009). These populations were later described as a separate species, the Pearl River map turtle (Ennen et al. 2010). Lovich et al. (2009) noted there was little concrete information on the exploitation of Pearl River map turtles, though they had received reports that hundreds were collected in the Pearl River Basin in 2006. The large-scale harvest of wild-caught turtles paired with turtles' vulnerability due to life-history characteristics suggest future declines in turtle populations if the state continues to permit unlimited commercial harvest.

Studies also demonstrate Louisiana's red-eared sliders are negatively impacted by commercial collection. Warwick and Steedman (1988) found lower overall abundance and a sharp reduction in the proportion of larger red-eared sliders in Louisiana populations, where commercial harvest was permitted, when compared to protected populations in Texas. Likewise, Close and Seigel (1997) found that populations of sliders from protected sites in Mississippi were larger than turtles from harvested sites in Louisiana, consistent with harvesting pressure that target large adults for meat or breeding stock. Though these studies are not recent, they were conducted during similar regulatory conditions—that is, regulation of commercial trapping either didn't exist or was equally lenient, allowing unlimited harvest.⁸ With no new restrictions imposed since these studies, traders are permitted to engage in the same or more intensive harvesting practices as indicated by the results of these studies, potentially leading to the similar or more harmful results.

The current status of diamondback terrapin populations in Louisiana is unknown largely due to a dearth of published studies. However, Drabeck et al. (2014) recently studied the status of Louisiana's diamondback terrapins following the *Deepwater Horizon* oil spill. Noting that diamondback terrapins were harvested to near extinction for sale in the food markets in the early 20th century, the scientists found that Louisiana terrapin populations had reduced genetic diversity when compared to populations in other parts of the species' range, which suggests they may not have recovered from the severe overharvesting they sustained almost a century ago (Drabeck et al. 2014).

In addition to commercial harvest, Louisiana also permits personal collection of freshwater turtles. Freshwater turtles may be collected in Louisiana with a recreational license, and

⁸ The Department of Wildlife and Fisheries and the Wildlife and Fisheries Commission promulgated the current regulations on reptiles and amphibians in 1994. See 20 La. Reg. 1135 (Oct. 1994). Since then, it has been amended in 2004, 2005, 2013, and 2016, but none of these amendments affected collectors' ability to take unlimited red-eared sliders. See 30 La. Reg. 2495 (Nov. 2004) (placing a moratorium on the commercial harvest of wild alligator snapping turtles); 31 La. Reg. 2569 (Oct. 2005) (require permits for private possession of constrictor snakes in excess of 12 feet long and of venomous snakes); 39 La. Reg. 1834 (Jul. 2013) (clarifying wording relating to restricted reptiles and amphibians and adding three species that are prohibited from take); and 42 La. Reg. 762 (May 2016) (declaring a moratorium on the harvest of razor-backed musk turtles).

collectors may use nets and traps to collect most freshwater turtles.⁹ La. Admin. Code tit. 76, pt. XV § 101(G); *see also* La. Rev. Stat. § 56:632.3. Recreational collectors are limited to possessing one alligator snapping turtle, two box turtles, and two razor-backed musk turtles in the field. La. Admin. Code tit. 76, pt. XV § 101(G)(2)(c). Additionally, no person may possess more than four box turtles or four razor-backed musk turtles at once. *Id.* The rules contain no limits on personal collection of any other turtle species, aside from the gopher tortoise and ringed sawback turtle, which are protected as threatened or endangered. La. Admin. Code tit. 76, pt. XV § 101(J)(4)(g)–(h).

The following subsections will provide natural history, threats, and statuses for several heavily exported, wild, freshwater turtles: common snapping turtles, softshell turtles, and red-eared sliders.

C. Natural History, Threats, and Status of Common Snapping Turtles

The common snapping turtle, one of the Louisiana turtle species subject to unlimited commercial collection, is a large, mostly aquatic turtle that weighs as much as 50 pounds (Ernst and Lovich 2009, p. 113-14). The common snapping turtle occurs in the United States, Canada, throughout Mexico, and as far south as Ecuador (NatureServe 2015). Common snapping turtles can be found statewide in Louisiana.

Snapping turtles occupy all types of freshwater habitats (streams, lakes, reservoirs, ponds, marshes, swamps), especially those with soft mud bottoms and abundant aquatic vegetation or submerged brush and logs (Ernst and Lovich 2009, p. 115). The species exhibits good tolerance of altered habitats (NatureServe 2015). Common snapping turtles have a diverse diet and feed on insects, crayfish, fish, snails, earthworms, amphibians, snakes, small mammals, and birds. Up to a third of their diet, however, is made up of aquatic vegetation.

The species is characterized by delayed female maturation, relatively low fecundity, low recruitment, and long generation times. Snapping turtles commonly experience low reproductive success due to extensive predation on their eggs, but females produce large clutches and may live and reproduce for several decades, so they usually produce offspring that join the breeding population (NatureServe 2015).

Although common snapping turtles are not significantly threatened overall, urbanization and excessive harvest has local impacts (NatureServe 2015; van Dijk 2016a). Females are especially susceptible during nesting season when crossing roads exposes them to injury and death from automobile strikes and makes them easy prey for humans who take them for food (Ernst and Lovich 2009, p. 113). Other threats include water pollution, drainage of water bodies, water impoundment and channelization, and development leading to increased raccoon populations (Ernst and Lovich 2009, p. 137). For example, in Algonquin Park in Ontario, Canada, the probability of a snapping turtle embryo surviving to sexual maturity is less than 0.1% (COSEWIC 2008).

⁹ Diamondback terrapins may not be collected using traps of any kind. La. Rev. Stat. § 56:635(A).

The common snapping turtle is widely exploited for local subsistence collection, as well as commercial trade for local, national, and international consumption (van Dijk 2016a). The flesh of the snapping turtle is eaten throughout its range, and a soup can be made from it (Ernst and Lovich 2009, p. 137). Collection for human consumption has decimated some populations (Harding and Holman 1990; Tucker and Lamer 2004). In Michigan, for example, snapping turtles were intensively trapped for 2–3 years in the 1980s, which greatly reduced populations. Collection was then prohibited, and by 2009, populations were approaching pre-impact levels, suggesting a 25-30 year recovery period after depletion (van Dijk 2016a).

In the United States snapping turtles are sold at Asian seafood markets and Asian restaurants. Juvenile snapping turtles ship from online dealers for about \$70 each (http://www.reptilestogo.com/For_Sale_Common_Snapping_Turtle_Baby.htm; <http://myturtlestore.com/juvenile-snapping-turtles-for-sale/>). In Louisiana, snapping turtles are used in Creole cuisine, and turtle soup is featured on the menus of many well-known, local restaurants (<http://www.palacecafe.com>; <http://www.commanderspalace.com>).

Collection of snapping turtles from the wild and captive production in turtle farms for export to East Asia increased consistently and substantially in recent years, from about 10,000 animals declared as exported from the United States in 1999 to over 1 million annually in more recent years (van Dijk 2016a; Weissgold 2010; USFWS 2016). Common snapping turtles are second only to red-eared sliders in terms of number of live individuals exported each year (Adkins Giese 2011). As for wild-caught live common snapping turtles, nearly 200,000 were exported from 2006–2010. In 2010 alone, over 32,000 wild-caught live snapping turtles were exported, including one shipment to China of 20,000 live, wild-caught common snapping turtles.

Although snapping turtle populations have been known to be vigorous throughout much of the species' range, long-term persistent take makes the species vulnerable to decline (USFWS 2016). For example, harvesters have reported declining numbers of turtles in harvested areas for snapping turtles on the upper Mississippi River (Paisley et al. 2009). Population recovery potential is low, due to a lack of an effective density-dependent response in reproduction and recruitment (Brooks et al. 1991; Galbraith et al. 1997). Some populations cannot withstand even minimal exploitation without undergoing a decline in numbers (Brooks et al. 1991; Brooks et al. 1988). Life-history models indicate that only slight increases (0.1) in annual adult mortality rate (such as from road mortality or harvesting) will cause a population to be halved in under 20 years (COSEWIC 2008).

While local declines have been documented, the species has not reached a 30 percent decline over 50 years (van Dijk 2016a). As such, common snapping turtles are included on the IUCN Red List as a species of “least concern” (van Dijk 2016a).

Effective November 21, 2016, the U.S. Fish and Wildlife Service will regulate and monitor international trade of common snapping turtles and three softshell turtles under a new agency rule. The rule, which responds in part to a 2011 request from the Center for Biological Diversity documenting the harms of the turtle trade, adds the turtles to Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This designation is

designed to curb overexploitation of these freshwater turtles for Asian food and medicinal markets.

Wild capture of common snapping turtles is prohibited in some states (including Michigan and New York) or strictly regulated (including Alabama, Maryland, Texas). But some states still allow unlimited commercial take (Kentucky, Missouri, Ohio, and Tennessee) (Nanjappa and Conrad 2011; van Dijk 2016a).

D. Natural History, Threats, and Status of Softshell Turtles

Three species of softshell turtles exist in the United States: Florida softshell, spiny softshell and smooth softshell. The spiny and smooth softshells are found in Louisiana.

The smooth softshell turtle has a smooth upper shell that lacks small bumps or scutes and is most often observed in the open waters of medium-sized to large rivers and streams with moderate to fast currents and visibility varying from clear to cloudy (Ernst and Lovich 2009, p. 614). Unlike the smooth softshell, the spiny softshell turtle has small bumps or spines on the front of the upper shell and small ridges on each side of the snout. As with the smooth softshell, the spiny softshell is primarily a riverine species; however, the spiny softshell also inhabits ecotonal areas, small creeks, marsh rivelets, roadside and irrigation ditches, farm and natural ponds, bayous, oxbows, large lakes, and impoundments.

The smooth and spiny softshells are characterized by delayed female maturation, a small clutch size (but multiple clutches), high neonate parental involvement, and low neonate survivorship. Males bask in shallow water and nests are often in close proximity to each other, facilitating collection. They feed on fish, crayfish, salamanders, tadpoles, frogs, snails, and aquatic insects.

Softshells can be locally common with high reproductive potential by turtle standards (van Dijk 2016b,c). The smooth softshell is reportedly extirpated from Pennsylvania and possibly extirpated from West Virginia. They are rare in the Ozarks of Missouri (Washington University undated).

The presumed primary threats to both smooth and spiny softshell turtles are overexploitation and habitat loss or habitat degradation, some predation and bycatch, and periodic natural flooding. The release of pesticides and both industrial and household chemicals into the waterways of spiny softshells is harmful, and softshells have now been found to contain many heavy metal and PCB contaminants (Ernst and Lovich 2009, p. 634).

International trade in smooth softshell turtles is small. Less than 500 wild-caught smooth softshell turtles were exported from 2009–2014 (Weissgold 2010; USFWS 2016). These numbers are down from previous years, likely reflecting the rarity of the species.

In contrast, the spiny softshell is widely traded internationally as live specimens for the pet trade and consumption. In fact, spiny softshells have long been exploited for consumption and more recently for export of adults for food and of hatchlings as pets and for Asian farming operations (van Dijk 2016c). As for spiny softshells declared as “wild caught,” 40,000 were exported from 2006-2010 and 35,000 were exported in the last five years. After years of high exportation in

2012 and 2013—with more than 12,000 wild-caught spiny softshells exported each of those years—export numbers have sharply declined, which may reflect scarcity. Turtle trappers exported only 4,105 wild-caught spiny softshells in 2014 and 660 in 2015.

The impact of commercial exploitation on populations appears to be undocumented, but bycatch in commercial fisheries and recreational fishing is suspected to be a factor in the observed decline of some populations (Brown et al. 2012; van Dijk 2016c).

The smooth softshell is subject to a variety of state laws and regulations (van Dijk 2016b) and has endangered status in Illinois (Illinois Endangered Species Protection Board 2015). The spiny softshell's conservation status is reported as "secure" or "apparently secure" throughout much of its U.S. range. It is considered "vulnerable" in Florida, Alabama, North Carolina, and Montana, and it is considered "imperiled" in South Dakota, New York, and Virginia (NatureServe 2015; North Carolina Wildlife Resources Commission 2014; New York Dept. of Environmental Conservation 2007). It is threatened in Vermont (Vermont Fish and Wildlife Dept. 2015). It is managed as a nongame resource across much of the United States (van Dijk 2016c). Softshell turtles are included on the IUCN Red List as a species of "least concern" (van Dijk 2016b,c).

Along with the common snapping turtle and the Florida softshell turtle, the smooth and spiny softshell turtles were added to CITES Appendix III in May of 2016.

E. Natural History, Threats, and Status of Red-eared Sliders

The red-eared slider is a subspecies of the pond slider (*Trachemys scripta*) (Powell, Conant & Collins 2016). The red-eared slider has yellow stripes on its head, forelimbs, and thighs, with broad, reddish stripes behind its eyes. Its carapace is greenish or olive with light yellowish vertical bars, which often become obscured or mottled with age.

Red-eared sliders can be found in rivers, ditches, sloughs, lakes, and ponds in the Mississippi Valley from north Illinois to the Gulf of Mexico (Powell, Conant & Collins 2016; Behler & King 1979). They mate from March to June and nest in June and July, laying 1–3 clutches of 4–23 oval eggs (Behler & King 1979). Males mature in 2–5 years. Young turtles feed on water insects, crustaceans, mollusks, and tadpoles, then turn to a plant diet as they mature.

Sliders are fond of basking and often seen stacked upon one another on logs, making them vulnerable to people who use them for target practice. Commonly referred to as "dime store" turtles, red-eared sliders are often collected and sold in the pet trade (Behler & King 1979; FFWCC, undated). Consequently, the red-eared slider is the most widely introduced turtle in the world and is included among 100 of the World's Worst Invasive Species (Powell, Conant & Collins 2016; http://www.issg.org/worst100_species.html).

Red-eared sliders are also negatively impacted by commercial collection. Warwick and Steedman (1988) compared the abundance and body size of red-eared sliders in protected populations in Texas and exploited areas of Louisiana. They found lower overall abundance and a sharp reduction in the proportion of larger individuals in the Louisiana populations. Close and Seigel (1997) studied the effect of human harvesting on red-eared sliders in Mississippi, where they are protected, and in southern Louisiana, where they are not. They found that populations of sliders from protected sites were larger than turtles from harvested sites, consistent with

harvesting pressure that target large adults for meat or breeding stock. The results suggest that higher levels of harvesting are likely to have negative consequences for red-eared slider populations. Brown et al. (2011) recently reported harvesting impacts for unprotected waters in Texas, with female turtles being smaller in unprotected waters when compared to protected waters. They attributed the difference in female turtle sizes to a harvesting preference for female turtles, which are collectively larger than males and preferable for food markets (Brown et al. 2011). They also suggested females may be collected in larger quantities to be used as breeding stock (Brown et al. 2011).

Though wild red-eared sliders have been captured and exported in massive numbers, export trends may indicate declining populations. In 2012, 4,403,752 wild-caught red-eared sliders were exported from the United States, and since that time exports have sharply declined, which may indicate scarcity. In 2015, 2,043,969 red-eared sliders were exported from the United States, representing less than half of the 2012 exports by comparison.

Studies of putative turtle meat products in Louisiana and Florida markets also indicate that as larger turtles become depleted and harder to capture, smaller species, including emydid turtles like red-eared sliders, may receive increased harvest pressure (Roman and Bowen 2000).

Though the red-eared slider is listed as Least Concern under the IUCN Red List of Threatened Species, this is largely due to its wide distribution, large range of habitat, and large population (van Dijk et al. 2016). NatureServe lists red-eared sliders as globally secure, though its status was last reviewed 20 years ago in 1996.

Wild collection and export of native red-eared sliders is also harmful because it leads to invasive populations of sliders in ecosystems where they would not normally occur (Pearson et al. 2015; FFWCC, undated). Red-eared slider turtles have been introduced to wetlands throughout the world and have negatively impacted native turtle populations by competing for limited food resources (Pearson et al. 2015). In Florida, exotic populations of red-eared sliders are expanding and rivaling populations of native turtles in some ponds (FFWCC, undated). They have also been introduced into places they do not naturally occur in at least twenty-three other states (USGS 2009). These turtles are introduced primarily through pet releases and escapes (USGS 2009). Though many states have made it unlawful to release nonnative turtles like the red-eared slider into natural ecosystems, these laws are difficult to enforce. Releases and escapes presumably continue to occur.

II. JUSTIFICATION FOR THE REQUESTED RULEMAKING

A. Wild Turtle Populations Cannot Withstand Unlimited Commercial Collection

Natural populations of turtles are characterized by a suite of life-history characteristics that may predispose these populations to rapid declines when subject to wild collection (Congdon et al. 1993, 1994; Galbraith et al. 1997; Heppell 1998). Among these characters are delayed maturity, low fecundity, high annual survivorship of adults, and high natural levels of nest mortality (Reed and Gibbons 2003).

Removing even a few adult turtles from a population can have effects lasting for decades because each adult turtle removed eliminates the reproductive potential over a breeding life that may exceed 50 years (Brooks et al. 1991). For example, a modest harvest pressure (10% per year for 15 years) of common snapping turtles may result in a 50% reduction in population size (Congdon et al. 1994). Stable turtle populations are dependent on sufficient long-lived breeding adults to offset the effects of high egg and nestling mortality and delayed sexual maturity (Congdon et al. 1993; Wilbur and Morin 1988).

Accordingly, scientists have repeatedly documented that freshwater turtles cannot sustain any significant level of harvest from the wild without leading to population declines (Ernst et al. 1989; Congdon et al. 1993, 1994; Galbraith et al. 1997; Heppell 1998; Gibbons et al. 2000; Reed and Gibbons 2003; Burke et al. 2000; Gamble and Simons 2004; Brown et al. 2011; Zimmer-Shaffer et al. 2014). Congdon et al. (1994) concluded that carefully managed sport harvests of some populations may be sustainable, but “commercial harvests will certainly cause substantial population declines.” Reed et al. (2002) found that the removal of as few as two female adult alligator snapping turtles could halve a population of 200 turtles within 50 years. Congdon et al. (1994) found that the removal of as few as 10 percent of the adults above 15 years of age could halve a snapping turtle population in 15 years. Garber and Burger (1995) documented the extirpation of a wood turtle (*Glyptemys insculpta*) population due to the occasional removal of adults by recreational users. After populations are depleted by overharvest, they can take decades to recover (Brown et al. 2011).

Life history traits not only constrain turtles in their response to harvest but also mask early detection by observers. In contrast to “traditional” managed wildlife and fisheries species, where the effects of management measures become measurable within years, the time scale of turtle life history results in exploitation effects becoming apparent and continuing to have effects for decades (van Dijk 2010).

Louisiana’s authorization of commercial collection of freshwater turtles poses a risk to other species too. Louisiana regulations allow permitted individuals to use nets and traps to collect most freshwater turtles.¹⁰ These nets and traps incidentally and indiscriminately capture many species, which subsequently drown when they cannot escape. Hoopnets range in length but most are long collapsible cylinder-shaped wire mesh or webbed netting funnel traps. The narrowing throat is open on one end to allow turtles and other aquatic animals to enter and not turn around to escape. The trap is baited with fish, stretched and weighted to the stream floor to capture hungry wildlife. These devices are capable of capturing all aquatic animals in the trap location including fish, aquatic mammals (such as beaver, muskrat, otter, and mink), snakes and state and federal threatened and endangered species. Scientists have documented this type of incidental mortality from commercial fishing nets in the Mississippi River (Fratto et. al. 2007; Barko et al. 2004; Braun and Phelps 2016). Hoopnets and other turtle collecting devices have also been known to capture aquatic migratory birds that are protected under the Migratory Bird Treaty Act, 16 U.S.C. § 703.

¹⁰ Diamondback terrapins may not be legally collected using traps of any kind, La. Rev. Stat. § 56:635(A), although terrapins are incidentally caught in traps set for other animals.

Though Louisiana regulations require that turtle traps “allow constant functional breathing of any air-breathing captured specimens,” La. Admin. Code tit. 76, pt. XV § 101(G)(1)(b), it is practically infeasible to monitor and ensure compliance. Further, even when partially submerged to allow captured animals to breathe, the likelihood of these traps drowning incidentally captured wildlife is significant due to unpredictable stream hydrology (rising waters from rain events), instability of trap design, and weight and movement of captured animals (Larocque et al. 2012).

In addition, turtle collectors often misidentify protected species that appear similar to non-protected turtles. For example, trappers often cannot distinguish alligator snapping turtles from common snapping turtles and coin both species simply as “loggerheads.” Collectors who can distinguish these species and who realize the high value of alligator snapping turtles for the international pet trade may purposely harvest them and portray them for sale as common snapping turtles. The U.S. Fish and Wildlife Service and Department of Justice have documented numerous turtle trading violations in Louisiana, which have led to convictions under the Lacey Act.¹¹ Game wardens are not often fully trained to distinguish most aquatic turtle species and face difficulty enforcing the law when encountering collectors in the field.

In Louisiana, the ringed sawback (ringed map) turtle is protected under the state and federal endangered species acts, La. Admin. Code tit. 76, pt. XV § 101(J)(4), and it potentially could be killed or captured by commercial turtle collectors. Likewise, alligator snapping turtles and razor-backed musk turtles are protected from commercial take as restricted species, La. Admin. Code tit. 76, pt. XV § 101(G)(2), but could be captured or killed. Restrictions on commercialization of turtles in Louisiana would help lead to less incidental take of nontarget species and make it harder for poachers to pass off rare, protected species as more common ones.

B. Turtle Meat Poses a Human Health Risk

A string of published scientific evidence demonstrates that consumption of turtle meat, shell, organs, and body parts can be harmful to humans. Meyers-Schöne and Walton (1994) examined dozens of scientific studies of pesticide and metal concentrations in freshwater turtles from the 1960s through the 1980s. Over a dozen studies found significant concentrations of numerous pesticides in freshwater turtles in states throughout the south, including aldrin, chlordane, DDT, dieldrin, endrin, mirex, nonachlor, and toxaphene (Meyers-Schöne and Walton 1994). Studies found bioconcentration of mercury and other metals such as aluminum, barium, cadmium, chromium, cobalt, copper, iron, lead, molybdenum, nickel, strontium, and zinc in turtles in Florida, Georgia and other southern states (Meyers-Schöne and Walton 1994).

Turtles, as apex trophic animals, will bioaccumulate toxins from contaminated prey (Kennish and Ruppel 1998). Because of their longevity, their exposure time to environments with aquatic

¹¹ See, e.g., Press Release, United States Department of Justice [USDOJ], Two Men Charged with Conspiring to Illegally Export Turtles (Jan. 28, 2016), *available at* <https://www.justice.gov/usao-edla/pr/two-men-charged-conspiring-illegally-export-turtles>; Press Release, USDOJ, Illinois Man Sentenced for Violating the Lacey Act (Aug. 5, 2015), *available at* <https://www.justice.gov/usao-edla/pr/illinois-man-sentenced-violating-lacey-act>; Press Release, USDOJ, Pennsylvania Man Sentenced to Prison for Conspiracy to Smuggle Turtles out of United States (Mar. 24, 2016), *available at* <https://www.justice.gov/usao-edla/pr/pennsylvania-man-sentenced-prison-conspiracy-smuggle-turtles-out-united-states>; Jim Mustian, *North Shore Man Helps Feds Untangle Turtle-smuggling Ring*, New Orleans Advocate (Sep. 10, 2014), *available at* http://www.theadvocate.com/new_orleans/news/article_c077dcb5-4856-5408-9d53-014bf09205ce.html.

contaminants is longer, which causes turtles to retain greater amounts of bioaccumulation compared to shorter lived lower trophic animals like finfish (Kennish and Ruppel 1998; Rowe et al. 2008). Turtles that burrow and submerge themselves in contaminated sediment, such as snapping turtles and softshell turtles, are likely to have greater levels of aquatic contaminants because their pathway of exposure is greater.

In 2004 the EPA issued a national fish consumption advisory for mercury in both private and public waters in Louisiana that still remains in effect (USEPA 2004; USEPA 2016). The Louisiana Department of Health (LDH) has conducted bioaccumulation studies of fish tissue taken from water bodies in Louisiana and issued health advisories when chemical contamination exists to support a recommendation to limit or restrict the consumption of fish or shellfish from a particular water body (LDH et al. 2012). The Louisiana Department of Health has fish consumption advisories for contamination of mercury, dioxin, PCBs, and several other contaminants across the state (LDH, undated).

In light of the contamination of Louisiana water bodies and waterways, and scientific evidence that turtles bioaccumulate high levels of aquatic contaminants, eating wild-caught turtles in Louisiana poses a human health risk. This provides yet another reason Louisiana Department of Wildlife and Fisheries should prohibit commercial collection and sale of all wild-caught turtles in Missouri.

C. Most States Have Ended This Harmful Practice

Numerous state wildlife agencies have ended commercial harvest of native freshwater turtles in the last decade. For example, North Carolina, Alabama, and Mississippi have long banned this harmful practice.

Starting in 2007, the Center for Biological Diversity (Center) identified 12 states that still allowed commercial collection of turtles (Arkansas, Florida, Georgia, Iowa, Kentucky, Louisiana, Missouri, Ohio, Oklahoma, South Carolina, Tennessee, and Texas). The Center submitted administrative rulemaking petitions to these states requesting each to prohibit commercial harvest of freshwater turtles. The petitions and background information on the commercial harvest of freshwater turtles can be found on the Center's website at: http://www.biologicaldiversity.org/campaigns/southern_and_midwestern_freshwater_turtles/index.html.

In response to the Center's advocacy and administrative rulemaking requests, in 2007 the Texas Parks and Wildlife Commission voted to ban commercial collection of native Texas turtles on public lands and waters, with an allowance for commercial capture from private property for a few more common species. 31 Tex. Admin Code § 65.331. In 2010, no wild-caught turtles were exported from Texas (Mali et al. 2014). Oklahoma banned commercial harvest of turtles from public waters, but a small commercial harvest still exists in private waters. 29 Okl. St. § 6-204; OAC § 800:15-9-3. Florida closed commercial turtle harvest in both public and private waters. Fla. Admin. Code Ann. r. 68A-25.002(6)(c). In South Carolina, it is now unlawful to remove more than 10 turtles from the state at one time and more than 20 turtles in one year, for nine native species. S.C. Code Ann. Regs. 50-15-70. In 2012, Georgia set annual commercial catch limits of 100 turtles per year for the Florida softshell turtle, spiny softshell turtle and river cooter;

300 per year for the common snapping turtle, painted turtle, striped mud turtle, eastern mud turtle, common musk turtle, loggerhead musk turtle; and 1,000 per year for the pond slider. Ga. Comp. R. & Regs. § 391-4-16-.05(1). Also in 2012, Alabama prohibited the unlimited commercial collection of all turtles listed as nongame species, with an allowance for very limited personal collection. Ala. Admin. Code r. 220-2-.142 (2)(A); Ala. Admin. Code r. 220-2-.92.

As individual states close or restrict turtle trapping within their borders, harvest pressure increases on the remaining states without restrictions (Mali et al. 2014). Mali et al. 2015 reported that because regulations in surrounding states and the high cost of commercially producing red-eared sliders on farms, commercial harvest in unregulated states like Louisiana is likely to continue and even increase (Mali et al. 2015). This will further exacerbate the threat to native turtles in the years to come.

In addition, turtle poachers often illegally trap in states with restrictions and claim that the turtles came from an adjacent state where trapping remains legal (Mali et al. 2014). For example, in 2016 a Louisiana man was accused of using commonly harvested common snapping turtles as cover for the sale of at least 160 protected species of turtle (http://www.nola.com/crime/index.ssf/2016/01/minden_man_accused_of_smugglin.html). In that way, overexploitation can more easily occur in regions with inconsistent state regulation of turtle trapping.

Of the three states that share a border with Louisiana, only Arkansas allows unlimited commercial collection of turtles. 002-00-001 Code Ark. R. § 34.04. As noted above, Texas has banned the commercial collection of turtles on public lands and waters. 31 Tex. Admin Code § 65.331. Mississippi prohibits the commercial sale of wild-caught reptiles, though personal collection is still allowed with yearly limits of one wild-caught alligator snapping turtle, 4 common snapping turtles, smooth softshell turtles, or spiny softshell turtles (or a mix of these species); and 10 of any other turtle species. 40-005-02 Code Miss. R. § 2.3(C), (D) (2016).

Arkansas, Louisiana, Mississippi, and Georgia are in the center of the freshwater biodiversity hotspot for the United States, and yet they lack unified policy to protect freshwater turtle diversity (Mali et al. 2014). If Louisiana grants this petition and restricts commercial trapping of turtles, as in Texas, the region would be better equipped to protect its turtle populations by making clear to turtle traders that trade is strictly regulated and enforced in the region.

III. PROPOSED RULE AMENDMENT

Under current Louisiana law, Louisiana Administrative Code, Title 76, Part XV, Section 101 authorizes the commercial harvest of turtles. We propose that language be stricken and new language added to Section 101, subsection G (Turtle Rules and Regulations), as follows:

1. Turtle Trap--any device constructed with horizontal funnel entrances not positioned in tandem, or opening on the upper surface, with or without attractants, with openings in the upper surface to allow constant functional breathing of any air-breathing captured specimens, designed to attract and/or capture turtles in aquatic habitats.

- a. Each trap or device shall be clearly marked as "TURTLE TRAP."

- b. Trap or device placement in the water column shall provide continuous breathing opportunities for the captured specimens by having openings in the upper surface to allow functional breathing of the captured specimens.
- c. All fish and/or other nontarget species other than watersnakes and salamanders (e.g., amphiumas) shall be released into the wild upon discovery or within 24 hours, whichever comes first.
- ~~d. Possession of finfish in the field while engaging in the commercial turtle trapping operations shall be prohibited.~~
- e. A reptile and amphibian collector's license is required to collect ~~and sell~~ turtles.

2. ~~Restricted Turtles~~ **Restrictions on Collection of Wild Turtles**

a. ~~List of restricted turtles:~~

- ~~i. alligator snapping turtle (*Macrochelys temminkii*); ii. razor-backed musk turtle (*Sternotherus carinatus*); iii. box turtles (*Terrapene sp.*).~~

~~b. a.~~ **a.** Commercial Prohibition. No person shall commercially take, possess, sell, purchase, trade, barter, or exchange ~~restricted~~ **wild** turtles, their eggs, or any parts thereof. Except that nothing herein shall prohibit the legal commercial sale, and possession of ~~restricted~~ turtles by licensed turtle farmers as provided in R.S. 56:632 et seq., and R.S. 3:2358.1 et seq., which were legally acquired prior to the effective date of this prohibition or imported legally into this state which have proper records as provided for in 56:637.

~~c. b.~~ **b.** Recreational Take and Possession Limit. Persons engaged in collection of native reptiles and amphibians shall be licensed in accordance with R.S. 56:632.3. No person shall possess restricted turtles taken with commercial gear.

i. List of restricted turtles: alligator snapping turtle (*Macrochelys temminkii*); razor backed musk turtle (*Sternotherus carinatus*); box turtles (*Terrapene sp.*).

ii. No person shall possess in the field more than one alligator snapping turtle, two box turtles, or two razor-backed musk turtles. No person shall possess more than four box turtles or four razor-backed musk turtles. Certified zoos, aquariums, universities, research and nature centers will be exempted from take limits.

It is Louisiana's policy "to conserve species of wildlife for human enjoyment, for scientific purposes, and to *insure their perpetuation as viable components* of this state's economic *and ecologic systems.*" La. Rev. Stat. § 56:1901 (emphasis added). Further, the Louisiana Department of Wildlife and Fisheries "is authorized to conserve resident species of wildlife . . . , to formulate conservation programs and plans . . . , and to conduct investigations on resident wildlife in order to develop information relating to populations, distribution, habitat needs, limiting factors, and

other biological, economic, and ecological data to determine conservation measures necessary for their continued ability to sustain themselves successfully.” La. Rev. Stat. § 56:1903(A)–(B). Louisiana also has a duty to protect endangered species under the federal Endangered Species Act, 16 U.S.C. § 1531, and a duty to enact effective state wildlife laws that discourage interstate commerce of illegally collected wildlife under the Lacey Act, 16 U.S.C. § 701. Consistent with these legal duties and authorities, the proposed rule amendment is intended to protect Louisiana’s turtle populations by ending unlimited commercial collection.

IV. CONCLUSION

Petitioners have summarized the harms caused by the commercial collection of wild turtles in Louisiana. Specifically, Petitioners have demonstrated that wild turtles cannot withstand unlimited commercial collection without facing population crashes. In addition, the wild collection of wild turtles to be sold for meat poses a human health risk because of contaminants. As a result of the significant harm caused by unlimited commercial collection of turtles, most states have ended the practice, including Texas and Mississippi, which border Louisiana. Petitioners therefore request that the Louisiana Department of Wildlife and Fisheries adopt the proposed rule amendment and end unlimited commercial collection of wild turtles.

Consistent with Louisiana Revised Statutes § 49.953(C), Petitioners request that the Department initiate rulemaking proceedings or state reasons for any denial of such rulemaking proceedings in writing within ninety days of the submission of this petition.

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