

BEFORE THE DELAWARE DIVISION OF FISH AND WILDLIFE
PETITION TO END UNLIMITED COMMERCIAL HARVEST OF COMMON
SNAPPING TURTLES



Common Snapping Turtle (*Chelydra serpentina serpentina*)

Photo Courtesy Dakota L.

CENTER FOR BIOLOGICAL DIVERSITY

May 5, 2021

NOTICE OF PETITION

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Submitted this 5th day of May 2021.

Pursuant to the Delaware Administrative Procedure Act, 29 DEL.C § 10114, the Center for Biological Diversity hereby petition the Delaware Department of Natural Resources and Environmental Control (“DNREC”) to end the unlimited commercial collection of common snapping 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 over 1.6 million members and online activists throughout the United States, including over 3,802 members and supporters in Delaware. The Center and its members are concerned about the conservation of rare wildlife—including turtles—and their essential habitats.

The Delaware Riverkeeper Network (DRN) is a non-profit advocacy and conservation organization with over 25,000 members that works to preserve the entire Delaware River and its tributaries in New York, New Jersey, Pennsylvania, and Delaware. As an organization based on sound science, DRN is dedicated to ensuring clean water and healthy ecosystems that are abundant with a diversity of life.

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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. Approximately sixty-one percent of all turtles worldwide are threatened or already extinct (Lovich et al. 2018)

Wild collection is the primary driver of turtle declines across the world (Bohm et al. 2013, Pitt & Nickerson 2013). Overexploitation has caused population declines in almost all turtle species that are now 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).

Delaware is home to 9 native species or subspecies of freshwater turtles (Powell et al. 2016). Although most of Delaware's turtle species enjoy protection from wild collection, the state allows unlimited numbers of common snapping turtles of a certain size to be taken from the wild by commercial collectors.¹ Del. Code tit. 7, § 715(b).

Common snapping turtles are wild-caught in large numbers in Delaware and across the country for the food and pet trade. Commercial harvests of turtles in the United States grew to large numbers over the last few decades, as the collapse of turtle populations in Asian countries created a worldwide turtle market (Colteaux and Johnson 2016).

Approximately 17,000 common snapping turtles were reported to be collected in Delaware over twenty years (1998 - 2019) by holders of snapping turtle harvest permits (Colteaux and Johnson 2016; DDFW 2018, DDFW 2020). While new regulations put into place in Delaware in 2012 may have minimally lessened the impact of commercial collection on its common snapping turtle populations, the harvest that remains continues to pose a significant risk to the future of Delaware's wild freshwater turtle populations.

The DNREC may “promulgate such rules and regulations and may make expenditures necessary to: Fix and regulate seasons by shortening, extending or closing seasons, and to fix and regulate the bag limit on any species of protected wildlife” Del. Code tit. 7, § 103 (a) (1). The DNREC also has the authority to “Establish and close to hunting, trapping and/or fishing such wildlife refuges, or any lake, stream or pond, as in its judgment may be deemed best to conserve any species of wildlife or fish” Del. Code tit. 7, § 103 (a) (2).

Delaware law provides that:

Proceedings for the adoption, amendment or repeal of a regulation may be initiated by an agency on the motion of an agency member or at the request of

¹ Delaware allows commercial collection of diamondback terrapins, with a limit of 4 terrapins collected per day. Del. Code tit. 7, § 715 (b).

any person who so petitions the agency on a form prescribed for that purpose by the Director of the Office of Management and Budget². The agency at its next regular meeting shall either grant the petition and initiate the proceedings specified by this chapter or deny the petition and give its reasons for doing so. Del. Code tit. 29, § 10114.

Under the authority given to the agency in Title 7 for protected wildlife, “the Department of Natural Resources and Environmental Control (DNREC) has the authority to adopt, amend, modify or repeal regulations to achieve greater protection of the environment and human health” (<https://dnrec.alpha.delaware.gov/public-hearings/>) Del Code Ann. tit. 7. Pursuant to this authority and for the reasons explained below, the Center requests that the DNREC grant this petition and initiate procedures to adopt a regulation to end unlimited commercial collection of the common snapping turtles at their next regularly scheduled meeting.

II. BACKGROUND

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

The United States has the highest richness of turtles in the world, with 89 species and subspecies of turtles (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 populations of turtles 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 their native turtles as food and Traditional Chinese Medicine, driving most populations to depleted levels and even extinction in the wild (Behler 1997; Chen et al. 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 (Le 2007). 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 has targeted the red-eared slider (*Trachemys scripta elegans*), common snapping turtle (*Chelydra serpentina*), Florida softshell (*Apalone ferox*), and spiny softshell (*A. spinifera*), in particular (Weissgold 2010). 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

² It is our understanding that there is no form. Per the director’s office of DFW, one would send a letter of request to the director who would then forward it to the advisory council of DFW.

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).

The federal export data likely underestimates the number of wild harvested turtles in the U.S. for two main reasons (Colteaux and Johnson 2016). First, an unknown biomass of turtle meat is processed and canned domestically before export, none of which is required to be recorded by the U.S. Fish and Wildlife Service (USFWS).³ Second, the distinction between wild and farm stock in export records may be tenuous because no regulations prohibit wild-caught turtles from being exported as farm stock after being transferred to farm ponds (Colteaux and Johnson 2016). In addition, live turtles may be sold domestically, which is not required to be recorded by USFWS.⁴

B. Wild Turtle Collection in Delaware

A high diversity of freshwater turtles can be found in Delaware, including species with very limited ranges like the northern map turtle and some with widespread ranges throughout the state like the eastern painted turtle (Powell et al. 2016). Three families of freshwater turtles, comprising 9 species, are native to Delaware:

- Family Emydidae (bog turtle, eastern box turtle, northern diamond-backed terrapin, northern redbelly turtle, eastern painted turtle, spotted turtle)
- Family Chelydridae (common snapping turtle)
- Family Kinosternidae (common musk turtle and eastern mud turtle).

(Powell et al. 2016).

The bog turtle is listed as an endangered species by the state and is federally listed as threatened. In Delaware the diamondback terrapin, northern redbelly turtle, spotted turtle, bog turtle and the eastern box turtle are all listed as Species of Greatest Conservation Need (SGCN) (Del FWA). The International Union for the Conservation of Nature (IUCN) recognizes the bog turtle as critically endangered (van Dijk(b), 2011). The IUCN lists the spotted turtle as endangered, the eastern box turtle and northern diamond-back terrapin as vulnerable, and the northern redbelly turtle as near threatened (van Dijk 2011(a), van Dijk 2011(d), van Dijk 2019, van Dijk(c)).

Prior to 2012, it was unlawful for any person to sell, offer for sale or kill any snapping turtle with a straight-line carapace length of less than eight inches, measured on the curvature. (Delaware Register of Regulations, 2011). Since then, Delaware has changed the size restriction to no less than eleven inches. Also, in 2011, Delaware limited take methods to turtle traps or by hand. This restriction only lasted two years and was returned to spear, gig, fyke net, and turtle traps. (Delaware Register of Regulations, 2013). Delaware changed maximum lift and empty time for turtle traps from every 36 hours to every 24 hours in 2013. (Delaware Register of Regulations, 2013).

³ A Maryland-based major wholesale buyer of snapping turtles harvested from the Mid-Atlantic states immediately butchered all large males and all large individuals of both sexes for meat in 2008 and 2009, respectively (Cain et al. 2017).

⁴ In 2008 some of the females sold to a major wholesale buyer of snapping turtles harvested from the Mid-Atlantic states were sold domestically to aquaculture businesses (Cain et al. 2017).

Delaware allows for the collection of four diamondback terrapins per day during and including dates between September 1 and November 15 Del Admin. Code § 4.16.

Pursuant to these 2012 regulations, Delaware continues to allow unlimited commercial harvest of the common snapping turtle (*Chelydra serpentina serpentina*), with the only limit on take relevant to size and season. Del. Admin. Code tit. 7, 3900 4.15. Snapping turtles may be collected year-round in Delaware, with the exception of a one-month restriction on hunting snapping turtles between May 15 and June 15. Del. Admin. Code tit. 7, 3900 4.15.1.

Delaware's current regulations restrict commercial collection and possession of snapping turtles to turtles with a minimum curved carapace length ("CCL") of eleven inches (27.9 cm). Del. Admin. Code tit. 7, 3900 4.15.2. Turtles may be taken using traps however "traps may have only one throat or funneling device." Del. Admin. Code tit. 7, 3900 2.1.5. Traps used to catch snapping turtles must have either an escape hole below water measuring a minimum of 7.5" in all directions or floats inserted inside the trap or attached to the trap or be set in such a way so that the trap provides sufficient breathing space for all captured turtles at all times." Del. Admin. Code tit. 7, 3900 2.9.1.

Turtle collectors must obtain an annual trapping permit from the Delaware Division of Fish and Wildlife to trap animals. This permit is \$10 for residents and \$75 for non-residents. Additionally, a free snapping turtle permit number must be obtained for snapping turtle collection. Del. Admin. Code tit. 7, 3900 2.9.4. An additional snapping turtle permit is required if the turtle collector wants to trap in State Wildlife areas. Delaware does not have a mandatory reporting requirement for turtle collectors, but the Division of Fish and Wildlife sends out a yearly survey where commercial trappers are invited to voluntarily disclose yearly catches (Nazdrowicz, pers. comm. 2019).

Over twenty-one years (1998-2019) possessors of snapping turtle harvest permits reported collecting 17,148 common snapping turtles from the wild in Delaware (Colteaux and Johnson 2016; DDFW 2018, DDFW 2020). These reports almost certainly underestimate the actual number of turtles collected in the wild because of the lack of documentation requirements. There is also potential of labelling wild-caught animals as farm raised once they have been transported to a farm (Colteaux and Johnson, 2016). This could further contribute to low-estimations on actual snapping turtle collection.

Restricting the size of turtles that can be collected, while an important step in the right direction is unlikely to have alleviated the risk to Delaware's snapping turtles. Research from other states that allow commercial collection of freshwater turtles indicate that the size restrictions relied upon in Delaware's current regulations are not likely to be sustainable (Brown et al. 2011; Colteaux and Johnson, 2018).

In addition to commercial harvest, Delaware also allows collection and possession without a license for one individual of each of the following species: common musk turtle, eastern box turtle, eastern mud turtle, painted turtle, redbelly turtle, and common snapping turtle. Del. Admin. Code tit. 7, 3900 15.2.2

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

The common snapping turtle is a large, mostly aquatic turtle that weighs as much as 50 pounds (Ernst and Lovich 2009). Snapping turtles occurs in Canada and most of the United States and can be found throughout the state of Delaware (NatureServe 2021).

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). The species exhibits good tolerance of altered habitats (NatureServe 2021). Common snapping turtles have a diverse diet and feed on insects, crayfish, fish, snails, earthworms, amphibians, snakes, small mammals, and birds. However, aquatic vegetation makes up the majority of their diet (Brooks et al 1988).

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 2021).

Although common snapping turtles are not significantly threatened overall, urbanization and excessive harvest has local impacts (NatureServe 2021; van Dijk 2012). 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). Other threats include water pollution, drainage of water bodies, water impoundment and channelization, and development leading to increased raccoon populations, which predate on turtle eggs (Ernst and Lovich 2009). In Canada's Algonquin Park, for example, the probability of a snapping turtle embryo surviving to sexual maturity is less than 0.1% (COSEWIC 2008).

The common snapping turtle is widely exploited for local subsistence collection, as well as commercial trade for local, national, and international consumption (van Dijk 2012). The flesh of the snapping turtle is eaten throughout its range, and a soup can be made from it (Ernst and Lovich 2009). Collection for human consumption has decimated some populations (Tucker and Lamer 2004).

In the United States snapping turtles are sold at Asian seafood markets and Asian restaurants. Juvenile snapping turtles ship from online dealers for approximately \$20 to \$170 each, based on size (Backwater Reptiles 2018, The Turtle Source 2010, My Turtle Store 2021).

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 common snappers declared as exported from the United States in 1999 to over 1 million in more recent years (van Dijk 2012; Weissgold 2010; USFWSa 2016). Common snapping turtles are second only to red-eared sliders in terms of number of live individuals exported each year (Adkins Giese 2011). A recent study calculated that U.S. harvest of common snapping turtles has increased 209 percent since 1998 (Colteaux and Johnson 2016).

As for wild-caught live common snapping turtles, nearly 200,000 were exported from 2006–2010. Export data shows that exports of wild caught common snapping turtles increased dramatically with nearly 600,000 caught and exported in a five-year period. Several huge individual shipments to China have occurred in the last decade, including 26,000 in 2012; 10,000 in 2013; over 50,000 in 2014; and nearly 35,000 in 2015. More than 200,000 live, wild-caught common snapping turtles were exported annually in each of 2012 and 2014 (USFWSb 2016).

According to a recent study, for the 16 years between 1998 and 2013, an estimated 348,529 snapping turtles were reported as commercially harvested among 11 states that provided harvest data (Colteaux and Johnson 2016). The total annual harvest across reporting states was positively correlated with the number of wild caught live individuals exported (Colteaux and Johnson 2016).

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 (USFWSa 2016). 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). For example, in Michigan 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 2012).⁵

Some snapping turtle 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 2012). However, snapping turtles are widely collected for commercial trade for local, national and international consumption and has increased substantially in recent years (van Dijk 2012).

Effective November 21, 2016, the U.S. Fish and Wildlife Service regulates and monitors the international trade of the common snapping turtle 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, West Virginia, and New York) or strictly regulated (including Alabama, Connecticut, and Iowa) (Colteaux and Johnson 2016). But some states still allow unlimited commercial take (including Delaware, Louisiana, Ohio, Maryland, and Tennessee) (Nanjappa and Conrad 2011; van Dijk

⁵ A study looking at the status of alligator snapping turtles (*Macrochelys temminckii*) in Flint River, Georgia, since the close of commercial harvest in 1992, revealed little evidence of recovery after 22 years of protection from harvest (King et al. 2016). The researchers hypothesized that the species' failure to increase in abundance in the intervening years may be hampered by the alligator snapping turtle's life history, which includes delayed maturity and low reproductive output (*Id.*).

2012). As of the 2015 commercial harvest season, 19 of the 37 states that make up the native range of the snapping turtle in the U.S. were open to commercial harvest (Colteaux and Johnson 2016). In March 2018, the Missouri Department of Conservation banned commercial collection of the state's wild turtles, including common snapping turtles (Missouri Department of Conservation 2018). And in October 2018 the Texas Parks and Wildlife Department finalized a rule to end commercial collection of common snapping turtles, red-eared sliders, and smooth and spiny softshell turtles, finding that “the overwhelming consensus of available scientific opinion is that commercial collection of turtles from the wild is ultimately unsustainable.” 43 Tex. Reg. 7178, 7182 (October 23, 2018); 31 TAC §65.331(e).

III. 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 characteristics 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).

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. 2001; 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).

While no research has been done in Delaware to assess the effectiveness of its new turtle regulations put permanently into place in 2012, studies completed in other states are instructive.

Until recently, Delaware's neighboring state of Virginia also limited commercial collection of common snapping turtles to those with a minimum curved carapace length (CCL) of 11 inches (27.9 cm) (Colteaux 2017). Virginia increased the minimum size to 11 inches in 2012 and that same year initiated a four-year study to assess the viability of the state's snapping turtle populations under varying levels of commercial harvest pressure, and to identify the size classes most critical to population persistence (Colteaux and Johnson 2018; Colteaux 2017). The results from this study suggest that these current size limits, being utilized in several states, including Virginia, Maryland, and Delaware, are not sufficient to avoid harvest-induced collapse of snapping turtle populations. The study results suggest annual population declines and changes in population structure at sites with both moderate and high levels of turtle collection, as compared to a site with no collection that had an estimated four percent population growth rate and an even distribution of turtles across size classes. Sensitivity analyses conducted in this study indicate that the size classes that are targeted for removal under current regulations are those most critical to population persistence, and thus are those in most need of protection. The authors suggest that commercial harvest should be restricted to turtles with a CCL exceeding 14 inches (35.6 cm), at a minimum, to avoid the potential of harvest induced collapse (Colteaux 2017). However, making this adjustment alone would likely not be sufficient to allow for the recovery of snapping turtle populations in Delaware that have likely suffered from declines under Delaware's current and historic regulations.

In their report to the Virginia Department of Game and Inland Fisheries ("VGDIF"), Colteaux and Johnson (2018) also recommended a moratorium on commercial snapping turtle harvest for at least one generational cycle (7 years) for rivers with demonstrated prolonged commercial harvest, to allow time for recovery. In response the VGDIF closed five rivers, streams, and tributaries to commercial collection until 2025, and permanently closed a portion of the Chickahominy River and its tributaries so it can continue to be used as a control site for future research (VGDIF 2018). In addition, Virginia adopted several additional restrictions to commercial turtle trapping that became effective on March 1, 2019. 35:13 VA.R 1675 February 18, 2019.⁶

Delaware's authorization of commercial collection of freshwater turtles poses a risk to other species as well. Delaware's regulations allow permitted individuals to use nets and traps to commercially harvest common snapping turtles. 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 capture hungry wildlife. Delaware also allows the use of fyke nets in snapping turtle capture, these nets form a funnel that direct animals into a main net. These devices can capture all aquatic animals in the trap location including other species of freshwater turtles, 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

⁶ Available at <http://register.dls.virginia.gov/details.aspx?id=7378>

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.

Though Delaware regulations require that turtle traps “have either an escape hole below water measuring a minimum of 7.5” in all directions or floats inserted inside the trap or attached to the trap or be set in such a way so that the trap provides sufficient breathing space for all captured turtles at all times,” (Del. Admin. Code tit. 7, 3900 2.9.2.) 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 Delaware, the bog turtle is listed a state endangered species (Del FW 2013). The bog turtle is also federally listed as a threatened species (USFWS 2020). The diamondback terrapin, northern redbelly turtle, spotted turtle, bog turtle, and the eastern box turtle are all listed as Species of Greatest Conservation Need (SGCN) in Delaware (Del FWa 2015). This protected aquatic turtle and other vulnerable turtle species that are prohibited from take, could be incidentally killed or captured by commercial turtle collectors. Restrictions on commercialization of turtles in Delaware would likely lead to less incidental take of nontarget species and make it harder for poachers to pass off rare, protected species as more common ones.

The commercial turtle trade not only depletes wild turtle populations, but also carries the risk of introducing diseases, upsetting ecological balances, and causing genetic pollution of resident native turtle populations (van Dijk 2010).

In addition to commercial harvest, Delaware also allows collection and possession of most Delaware turtle species except for the days between and including May 15 to June 15 for personal and noncommercial use without a permit. Del. Admin. Code tit. 7, 3900 15.2.2, of all but two of their native species. Three of the species allowed for personal collection are “Species of Greatest Conservation Need” in Delaware (Del FW 2015). These species include the eastern box turtle and the northern diamond-backed terrapin, both ranked as vulnerable by the IUCN (van Dijk(d) 2011, van Dijk 2019), and the northern redbelly turtle which is ranked as near threatened by the IUCN (van Dijk(c) 2011).

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). In addition, a recent study of diamondback terrapins in New Jersey found that 27 - 46 percent of terrapin muscle samples had

mercury levels exceeding the U.S. Environmental Protection Agency's threshold of 0.3 ppm for seafood consumption for the general public, and 50 – 73 percent of samples surpassed the New Jersey sensitive threshold (Sherwood et al. 2018).

Turtles, as apex predators situated at upper trophic levels, can bioaccumulate toxins from contaminated prey (Kennish and Ruppel 1998). Because of their longevity, they are exposed to greater amounts of bioaccumulation compared to shorter lived lower trophic animals like finfish (Kennish and Ruppel 1998; Rowe 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.

The DDFW recommends limiting fish consumption to no more than one 8-oz. meal per week of any fish species caught in the fresh, estuarine, and marine waters of Delaware, despite announcing that the concentration of contaminants found in fish caught in Delaware waterways continues to decline (Del FW 2018). They recognize polychlorinated biphenyls (PCBs), mercury, dioxins, furans, and Dieldrin as potentially harmful contaminants in Delaware's waterways (Del FW 2018). Although DDFW has not made any recommendations about the risks associated with the consumption of turtles, these contaminants concentrate in turtles as well. Many turtle species are long-lived, occupy a wide-range of habitats, and feed at high trophic levels (Hopkins et al. 2013). This makes turtles particularly vulnerable to bioaccumulation and biomagnification of these persistent organic pollutants. Not only is this unsustainable practice resulting in dramatic decline of turtle populations worldwide, but it also likely puts those who consume turtles at risk of health consequences associated with contaminant exposure (Hopkins et al. 2013).

Considering the contamination of Delaware water bodies and waterways, and scientific evidence that turtles bioaccumulate high levels of aquatic contaminants, eating wild caught turtles in Delaware poses a human health risk. This provides yet another reason DDFW should prohibit commercial collection and sale of all wild caught turtles in Delaware.

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, Missouri, Alabama, and Mississippi have long banned this harmful practice.

Starting in 2007, the Center for Biological Diversity (Center) identified 12 southern and Midwestern 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 background information on the commercial harvest of freshwater turtles can be found in the Center's report *Robbing the Wild*: https://www.biologicaldiversity.org/species/reptiles/pdfs/4_Robbing_the_Wild.pdf⁷.

⁷ South Carolina ended commercial trapping after publication of the *Robbing the Wild* report.

In response to the Center's advocacy and administrative rulemaking requests, in 2009 Florida closed commercial turtle harvest in both public and private waters. Fla. Admin. Code Ann. r. 68A-25.002(6)(c). Oklahoma banned commercial harvest of turtles from public waters, but large year-round commercial harvest of unlimited numbers of eight species of turtles still exists in private waters, including softshell turtles less than 16 inches in length and common snapping turtles. 29 Okl. St. § 6-204; OAC § 800:15-9-3. In South Carolina, it is now unlawful to possess, sell, barter, trade, ship or remove from the state 13 species of native turtles. remove more than 10 turtles from the wild 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 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, eastern mud turtle, and loggerhead musk turtle; and 500 per year for the pond slider. Ga. Comp. R. & Regs. § 391-4-16-.05(1). Alabama also prohibited commercial collection of all turtles listed as nongame species in 2012, with an allowance for very limited personal collection. Ala. Admin. Code r. 220-2-.142 (2)(A); Ala. Admin. Code r. 220-2-.92.

In 2017, new regulations went into effect in Iowa setting closed seasons and daily catch and possession limits for commercial turtle trappers (Iowa DNR 2017). And in 2018 the Missouri Department of Conservation and the Texas Parks and Wildlife Department banned commercial collection of their states' wild freshwater turtles (Missouri Dept. of Conservation 2018; 43 Tex. Reg. 178 (October 23, 2018)).

As individual states close or restrict turtle trapping within their borders, harvest pressure increases on the remaining states without restrictions (Mali et al. 2014). 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 (Fox40 2016). Overexploitation can more easily occur in regions with inconsistent state regulation of turtle trapping.

Of the states that neighbor Delaware, West Virginia does not allow commercial collection of freshwater turtles (Colteaux and Johnson 2016). Like Delaware, Maryland and New Jersey allow unlimited commercial collection of common snapping turtles, although, as discussed above, Virginia recently adopted several additional restrictions for commercial trappers. 18 Delaware Admin. Code 3900-2.9;; Code of Maryland Regs. 08.02.06.01(G)(1)(b); New Jersey Administrative Code § 7:25-6.22 (d). Pennsylvania limits commercial collection of common snapping turtles with a daily bag limit of 15 and possession limit of 30. 58 Pa Code §79.3(h).

The Mid-Atlantic region of the United States is a hotspot for commercial turtle collectors, and reform is needed. If Delaware ends commercial collection of common snapping turtles within its borders, adjacent states would likely follow its example and the region would be better equipped to protect turtle populations by making clear to turtle traders that trade is strictly regulated and enforced in the region.

IV. PROPOSED RULE AMENDMENT

The Center suggests the following amendment to Del. Admin. Code tit. 7. Under the proposed rule amendment, the bold and strikethrough language below would be deleted with modifications to the subsequent sections shown in redline italics.

§ 701 Game animals.

The following shall be considered game animals: Mink, ~~snapping turtle~~, raccoon, opossum, gray squirrel, otter, muskrat, red fox, hare, rabbit, frog, deer, and beaver. The Bryant fox-squirrel, otherwise known as the “*sciurus niger branti*,” shall be protected wildlife.

§ 704 Prohibited hunting and trapping devices and methods; confiscation of devices; primitive weapon season.

(a) No person shall make use of any pitfall, deadfall, scaffold, cage, snare, trap, net, pen, baited hook, lure, urine or baited field or any other similar device for the purpose of injuring, capturing or killing birds or animals protected by the laws of this State, except red foxes, muskrats, raccoon, opossum, minks, otters, beavers and rabbits may be trapped and ~~snapping turtles~~ may be trapped or taken with a net in accordance with the regulations of the Department of Natural Resources and Environmental Control, and except as otherwise expressly provided. Landlords and tenants and their respective children may take rabbits in traps and snares during the open season for same on their freeholds and leaseholds, respectively. For purposes of this section, the term “lure” means any mixture of ingredients intended to be placed at the trap location for the purpose of masking human odor or attracting wildlife. The term “lure” does not include any tangible objects such as duck or goose decoys or similar tangible devices used while hunting nor does the term include any mixture of ingredients intended for the purpose of masking human odor or attracting deer while deer hunting.

§ 715 Possession of protected wildlife; prohibitions.

(b) No person shall have in possession any game fish during the closed season for said fish, whether the same shall have been taken within or without the State, and no person shall at any time of the year barter, sell, offer for sale or buy any game birds, game animals or game fish protected by the laws of this State, and killed or caught either lawfully or unlawfully within or without this State, except always the muskrat, ~~the snapping turtle~~ and the diamond back terrapin trade during the seasons when it is lawful to have said animals and their meat in possession, and trading at any and all times in muskrat skins and other skins and in terrapin of lawful size which have been lawfully taken; and further except always hotels, restaurants, clubs and other food dispensers which may offer pheasants and quail for food consumption, provided, however, that every such food dispenser having pheasants and quail in its possession has an invoice covering the same showing purchase thereof from a licensed game breeder within or without this State, said invoice to have the game breeder’s license number on it.

2.0 Method of Take

(Penalty Section 7 Del.C. §103(d))

2.1 General.

Unless otherwise provided by law or regulation of the Department, it shall be unlawful to hunt any protected wildlife with any weapon or firearm other than a longbow or shotgun (10 gauge or smaller), except that:

2.1.1 Crossbows may be used during all deer seasons;

2.1.2 A muzzle-loading rifle with a barrel length of at least twenty inches and loaded with black powder may be used to hunt deer during muzzleloader and shotgun deer seasons;

2.1.3 A .22 caliber rimfire pistol may be used to hunt raccoons and opossums and to take wildlife lawfully confined in a trap;

2.1.4 A hook, spear or gig may be used to take frogs; and

2.1.5 Snapping turtles may be taken by hand or by using a spear, gig, fyke net or turtle trap. Turtle traps can have only one throat or funneling device.

2.1.6 A single shot an antique or authentic reproduction black powder Sharps rifle of 45 to 60 caliber shall be lawful for use during shotgun deer seasons using paper patched bullets.

2.1.7 No person shall place in the field any set or unset equipment associated with the trapping of game animals until the opening day of any state approved trapping season.

2.1.8 Any person who sets or makes use of any trap, cable restraint or other approved wildlife capture device during any lawful trapping season, shall remove all trapping equipment by the last day of the approved trapping season.

2.1.9 It shall be unlawful to set a trap on public or private property without first acquiring written permission from the landowner or managing agency and having said permission in possession while tending traps.

2.1.10 It shall be unlawful to bait a trap with meat or animal products, except box/cage traps, if the bait is visible from above and within 10 feet of the trap. The use of animal fur or feathers without any attached animal tissue is not restricted.

2.1.11 Without first acquiring specific advance permission, it shall be unlawful for any person other than the rightful owner of a trap, to move, take, or damage any trap, or take, or attempt to take, wildlife from any trap.

2.2 Archery and Crossbow.

2.2.1 General. No person shall use or have in his or her possession, while hunting, any: poison arrow, arrow with and explosive tip, or any longbow with a minimum pull less than 35 pounds.

2.2.2 Crossbows used for deer hunting must have a minimum pull weight of 125 pounds, be manufactured after 1980, and have a mechanical safety. Crossbows may be equipped with a scope.

2.2.2.1 It shall be unlawful to transport a crossbow on or within any vehicle while the crossbow is in the cocked position.

2.3 Hunting from Boats.

2.3.1 Distance from Blinds. During the season for the hunting of migratory waterfowl, it shall be unlawful for any person to hunt from a boat of any kind that is within 1500 feet of an established blind, except that:

2.3.1.1 Any person may use a boat to tend lawfully set traps for fur-bearing wildlife;

2.3.1.2 Any person may retrieve crippled waterfowl by the use of a boat in accordance with federal regulations;

2.3.1.3 Any person may use a boat for transportation to and from an established blind lawfully used by such person;

2.3.1.4 Any person may hunt from a boat that is firmly secured and enclosed in an established blind.

2.3.2 Notwithstanding the provisions of subsection 2.2.1 of this section, any person may hunt migratory waterfowl within 1500 feet of an established blind, from a boat, with permission of the blind owner.

2.3.3 Gunning Rigs.

2.3.3.1 During the season for hunting migratory waterfowl, it shall be unlawful for any person to hunt within 900 feet of the shoreline (high tide line) of the Delaware River and Bay, between the Appoquinimink River and the Smyrna River, without written permission of the closest adjoining landowner(s).

2.3.3.2 During the season for hunting migratory waterfowl, it shall be unlawful for any person to hunt within 1500 feet of the shoreline (high tide line) of the Delaware River and Bay, between the Smyrna River and the Murderkill River, without written permission of the closest adjoining landowner(s).

2.3.4 Tender Boats. It shall be unlawful for tender boats servicing gunning (layout) rigs to be further than 1500 feet from the rig or to conduct any activity, except to pick up downed birds or service the rig.

2.3.5 During the season for hunting migratory waterfowl, it shall be unlawful for any person to hunt from a boat, or a floating or fixed blind in the Little River in areas bounded on both sides by land administered by the Division, except as permitted in writing by the Director.

2.4 Foothold Traps.

2.4.1 Notwithstanding statutes § 703 and 788 of Title 7, it shall be unlawful for any person to set a foothold trap at any time in this State, except from December 1 through March 20. The use of toothed or serrated jawed traps is prohibited. All foothold traps set above the waterline must have padded, laminated or offset jaws, with the exception being that coil-spring traps with a jaw spread of 4 inches or less and long-spring traps with a jaw spread of 4 ½ inches or less do not need to be padded, laminated or have offset jaws.

2.4.2 It shall be unlawful for any person to set foothold traps with a jaw spread larger than 6 ½ inches above the waterline. The jaw spread of traps set below the waterline shall not exceed 7 ¾ inches.

2.4.3 It shall be unlawful for any person to set or make use of any foothold, except coil-spring traps with a jaw spread of 4 inches or less and long-spring traps with a jaw spread of 4 ½ inches or less, without first permanently attaching a metallic tag on each trap, bearing:

2.4.3.1 The words “Trapping License, Delaware”, the number of the trapping license issued to the owner of the traps and the year of issuance; or

2.4.3.2 The owner's name and address.

2.4.4 When information is furnished to the Division from the owner, tenant or sharecropper of any land that any species of wildlife is detrimental to crops, property or other interests on land on which he or she resides or controls, upon investigation, the Division may issue a permit to such person or his or her agent for the use of foothold traps to control said species of wildlife. Said permit may be issued at any time of the year.

2.4.5 The setting of each trap in violation of this section shall be a separate offense.

2.4.6 Foot encapsulating traps shall be considered foothold traps.

2.9 Snapping Turtles

2.9.1 Turtle traps must have either an escape hole below water measuring a minimum of 7.5” in all directions or floats inserted inside the trap or attached to the trap or be set in such a way so that the trap provides sufficient breathing space for all captured turtles at all times.

2.9.2 Each trap shall be marked with a metallic tag bearing the trapper's name and address or current year's trapping license number. The tag shall be attached to the trap in a manner that allows it to remain visible, at all times.

2.9.3 All turtle traps must be lifted and emptied of catch at least once every 24 hours.

~~2.9.4 An annual permit must be obtained from the Division in order to trap snapping turtles. This permit is free.~~

2.10 Cable Restraints

2.10.1 It shall be unlawful for any person to set or make use of any cable restraint without first permanently attaching a metallic tag on each cable restraint, bearing:

2.10.1.1 The words "Trapping License, Delaware", the number of the trapping license issued to the owner of the traps and the year of issuance; or

2.10.1.2 The owner's name and address.

2.10.2 It shall be unlawful to set a cable restraint with the bottom of the loop any higher than 12 inches above the ground.

2.11 Box/Cage Traps

2.11.1 It shall be unlawful for any person to set or make use of any box/cage trap without first permanently attaching a metallic tag on each trap, bearing:

2.11.1.1 The words "Trapping License, Delaware", the number of the trapping license issued to the owner of the traps and the year of issuance; or

2.11.1.2 The owner's name and address.

4.0 Seasons

(Penalty Section 7 Del.C. §103(d))

4.15 Snapping Turtles.

4.15.1 Season. It shall be unlawful for any person to hunt for snapping turtles during any period of the year, except between and including June 15 and May 15.

4.15.2 ~~Size.~~ It shall be unlawful for any person to sell *or* offer for sale ~~or kill~~ any snapping turtle. ~~with a straight line carapace (top shell) length of less than eleven inches, measured on the curvature. This straight line measurement is taken from the nuchal scute directly behind the turtle's head to the base of the notch where the two most posterior scutes meet over the tail.~~

It is Delaware's policy to "protect, manage and conserve all forms of protected wildlife of this State, and enforce by proper actions and proceedings the law relating thereto." Del. Admin. Code tit. 7, 3900 § 102. Delaware 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 ensure the ability of Delaware's turtle populations to perpetuate themselves by protecting them from the harmful impacts of unlimited commercial collection.

IV. CONCLUSION

Wild turtles cannot withstand unlimited commercial collection without facing population declines. There are real harms caused by commercial collection in Delaware, including the wild collection of wild turtles to be sold for meat poses a human health risk due to contaminants. As a result of the significant harm caused by unlimited commercial collection of turtles, many states have ended or are ending the practice. The Center requests that the Delaware Division of Fish and Wildlife adopt a proposed rule amendment to end commercial collection of snapping turtles in all waters of the state.

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