BEFORE THE IOWA DEPARTMENT OF NATURAL RESOURCES COMMISSION, GOVERNOR OF IOWA, AND THE IOWA DEPARTMENT OF PUBLIC HEALTH

EMERGENCY RULEMAKING REQUEST TO REPEAL IOWA'S TURTLE COLLECTION LAW

BASED ON THE DEPLETION OF IOWA'S WILD TURTLE POPULATIONS AND AN IMMINENT PUBLIC HEALTH RISK THROUGH THE CONSUMPTION OF CONTAMINATED TURTLES DERIVING FROM IOWA

MARCH 11, 2009

Center for Biological Diversity
Center for Food Safety
Center for North American Herpetology
Center for Reptile and Amphibian Conservation and Management
Sierra Club, Iowa Chapter
Tallgrass Prairie Audubon Society

The Center for Biological Diversity, Center for Food Safety, Center for North American Herpetology, Center for Reptile and Amphibian Conservation and Management, Sierra Club, Iowa Chapter, and Tallgrass Prairie Audubon Society, nonprofit organizations, come forth to the Governor of the State of Iowa, the Director and Commission of the Iowa Department of Natural Resources, and the Iowa Department of Public Health by and through their attorney Christopher Hunter Jones, and submit this administrative petition requesting the Commission to immediately repeal commercial harvest of all freshwater turtles (chelonians). Petitioners request that all chelonians be removed from the Iowa Administrative Code 571-86.1 (2008) and hereinafter the state of Iowa afford all wild freshwater turtles in Iowa protection from commercial harvest, sales and export. Iowa law currently allows an unlimited number of freshwater turtles to be harvested from the wild and sold as food. Under this regime, every common snapping turtle, softshell turtle and painted turtle that exists in Iowa can be legally collected and sold. Unregulated harvest and commercial collection are rapidly depleting Iowa's wild turtle populations. Consumption of turtles known to be contaminated with toxins and pollutants poses a significant public health risk.

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I INTRODUCTION

Commercial collection of wild turtles in Iowa is a wildlife management challenge like nothing faced in the history of the Iowa Department of Natural Resources (IDNR), and the Iowa Department of Public Health (IDPH). These agencies currently allow unlimited commercial harvest of turtles for human consumption with little to no regulatory oversight, despite the fact that many of these turtles are harvested from streams that are presently subject to fish advisories and bans that precaution against and prohibit human consumption.

The IDNR and IDPH have a duty to protect the public from unsafe turtle meat products originating in Iowa under the Federal Food Drug and Cosmetic Act (21 U.S.C § 301 (2007)). A substantial and imminent public health risk exists since commercial turtle collectors and buyers are harvesting and purchasing turtles from Iowa waters and streams where fish advisories are in place by the IDNR and IDPH, and these turtles are potentially contaminated with PCBs, pesticides and heavy metals (USEPA 2008; IDNR and IDPH 2009).

While there are multiple stressors on southern freshwater turtle populations, such as habitat loss, water quality degradation, nest predation, and loss of food supply, unregulated commercial harvest threatens to drive some U.S. freshwater turtle populations to extinction. Over the last decade conservation biologists have cautioned state wildlife agencies that freshwater turtles in North America are being increasingly targeted to supply food markets in Asia, particularly China, due to depletion of wild populations of Asian turtle species (Behler 1997). Growing Asian communities in the U.S. are also driving demand of native species for turtle meat and their body parts.

The international trade in turtles for food, pets, or use in medicinal remedies is extensive and unregulated (Sharma 1999). A recent report indicated that most turtle species in Vietnam and southern China are endangered and that turtles can no longer be found in the wild in Vietnam (Kiester and Juvik 1997). China is the biggest consumer of turtles in the food trade. With more than 1.3 billion people, China is the largest and fastest growing population in the world (USDOS 2007). China has long commercially pursued their native turtles as food and Traditional Chinese Medicine, driving most populations to depleted levels and even extinction in the wild. Turtle meat, shell and body parts are sold at wildlife markets and restaurants throughout Asia and turtles are an ancient, prized and expensive delicacy served at Asian restaurants and at home (S. Haitao, pers. comm. 2007). Because the trade in turtles is not regulated, few records have been kept, but existing records indicate that the trade in live turtles from the U.S. to China is thousands of tons per year (Mockenhaupt 1999). The commercial trade in freshwater turtles exceeds any possible sustainable levels, and extinction of some Asian turtle species in the wild can be expected within the next decade (Gibbons et al. 2000). This will only increase the demand for export of U.S. freshwater turtles.

Baseline scientific evidence developed over twenty years of field work demonstrates that freshwater turtles can not sustain any significant level of harvest from the wild without

leading to population crashes (Congdon et al. 1994). *See Exhibit A.* Turtle population stabilities are dependent on adult survivorship - the presence of long lived breeding adults is needed to offset the naturally high mortality in turtle nests, hatchlings and juveniles. The evolutionary life history traits of turtles are characterized by delayed onset of maturity, high adult survivorship, and low survivorship of eggs, hatchlings and juveniles (Congdon et al. 1993).

In recognition of this evidence and due to intensive commercial harvest regimes in the southern U.S., state wildlife agencies, including North Carolina, Alabama and Mississippi have banned commercial harvest of all native freshwater turtles in the last decade. 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. Oklahoma in 2008 enacted a three-year moratorium on commercial harvest of turtles from public waters while studying the status of Oklahoma's wild turtle populations, the effects of commercial harvest, and the potential contamination of turtles sold as food. Florida in 2008 imposed a temporary, 20 turtle-a-day limit for commercial fishermen while it reviews harvest regulations. Georgia is currently developing recommendations for potential legislative action on turtle harvest regulation.

Despite scientific evidence that most turtle species cannot be harvested under the historic wildlife management theory of sustainable harvest without leading to population crashes, Iowa law continues to allow unlimited commercial take of all sizes of common snapping and softshell turtles (juveniles, subadults and breeding adults) using an unlimited quantity of hoopnets and box traps in public and private waters.

II. REQUEST FOR REPEAL OF THE COMMERCIAL TURTLE HARVEST RULE AND STANDARD TO ENACT AN EMERGENCY RULE

The Iowa Administrative Procedures Act grants the IDNR and IDPH the power to adopt emergency rules when imminent peril exists to the preservation of the public health, safety, or welfare, or that a compelling public interest requires an emergency rule. Iowa Code section 17A.4(2) and 17A.5(2)(b)(2008). Any person may petition a rulemaking:

> Any interested person, association, agency, or political subdivision may submit a written request to the administrative rules coordinator for an agency to conduct a formal review of a specified rule of that agency to determine whether the rule should be repealed or amended or a new rule adopted instead. The administrative rules coordinator shall determine whether the request is reasonable and does not place an unreasonable burden upon the agency.

Citing Iowa Code section 17A.7(2) (2008) – Petition for adoption of rules and request for review of rules

The Center for Biological Diversity, Center for Food Safety, Center for North American Herpetology, Center for Reptile and Amphibian Conservation and Management, Sierra

Club Iowa Chapter, and Tallgrass Prairie Audubon Society hereby submit this document to serve as an administratively complete petition and respectfully request that the IDNR and IDPH immediately issue an emergency rule in accordance with Iowa Code section 17A.4(2) and 17A.5(2)(b)(2008). This petition provides evidence of imminent peril to the public health safety and welfare of citizens of Iowa, the United States and other countries by allowing commercial collectors and buyers to sell for human consumption potentially contaminated turtles taken from waters in Iowa that are contaminated with carcinogenic aquatic contaminants and from streams that are imposed with fish consumption advisories by IDNR. As a requirement of state law the IDNR has a duty to *maintain* the *biological balance* of freshwater turtles through *sound wildlife management principles* (Iowa Code 481A.39 (2008) (Emphasis added). Under requirements of federal laws the IDNR and IDPH have a duty to protect threatened and endangered species under the Endangered Species Act (16 U.S.C. § 1531 (2007)), protect the public from unsafe turtle meat products originating in Iowa under the Federal Food Drug and Cosmetic Act (21 U.S.C. § 301 (2007)), and enact effective state wildlife laws that discourage interstate commerce of illegally collected wildlife under the Lacey Act (16 U.S.C. § 701 (2007)).

III. NECESSITY FOR AN EMERGENCY RULE

1. Turtle bioaccumulation studies demonstrate that eating turtles contaminated with PCBs and heavy metals is more dangerous to human health than consuming contaminated fish

Meyers-Schöne and Walton (1994) examined dozens of scientific studies of pesticide, PCB and metal concentrations in freshwater turtles from the 1960s through the 1980s, including numerous studies of turtles from Florida, Georgia and Texas. 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).

A string of recent published scientific evidence demonstrates that consumption of turtle meat, their shell, organs and body parts can be harmful to humans. *See Exhibit B.* Toxicologists caution that human consumption of turtle meat may be far more dangerous to human health than fish, since turtles are longer lived organisms and higher trophic animals that bioaccumulate considerably greater amounts of aquatic contaminants (T. Rainwater, pers. comm. 2007; W. Roosenburg, pers. comm. 2007). Researchers have found enough PCBs in a common snapping turtle to kill a large mammal (W. Roosenburg, pers. comm. 2007). Studies of snapping turtles in the Trinity River in Liberty County, Texas revealed “harmful levels of environmental toxicants” to humans, primarily methyl mercury (Mitchell In Press). Toxicologists advise that eating turtles contaminated with PCBs, pesticides and heavy metals poses a greater risk to human health than consuming contaminated finfish (Mitchell In Press).

Turtles are long lived organisms; some species, including the alligator snapping turtle (*Macrochelys temminckii*), are known to live more than 80 years (Pritchard 1989). Turtles, as apex trophic animals, will bioaccumulate toxins from contaminated prey (Kennish and Ruppel 1998). Because of their longevity, exposure time to environments with aquatic 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). Snapping turtles and softshell turtles are likely to have greater levels of aquatic contaminants through burrowing and submerging themselves in the contaminated sediment, therefore their pathway of exposure is greater (T. Rainwater, pers. comm. 2007; W. Roosenburg, pers. comm. 2007).

PCBs are highly stable, lipophilic chemicals and because of these properties tend to bioaccumulate in higher trophic level consumers including aquatic turtles (Safe 1994). A large body of literature has focused on the occurrence of PCBs in mammals and birds, but comparatively few studies have analyzed tissue contaminant levels in wild-caught reptiles (Portelli and Bishop 2000). Diet of freshwater turtles in Florida consists of mussels, invertebrates, crayfish and fish (Ernst et. al. 1994). Mussels are filter feeders or opportunistic omnivores with little ability to breakdown PCBs. Large, older, reproductive female turtles show a high contaminant burden that can transfer to their eggs. Because of a longer life span, turtles are a more relevant indicator of sublethal stressors than certain fish (Portelli and Bishop 2000).

2. Human toxicological effects of methyl mercury

Methyl mercury is the most important form of mercury in terms of toxicity and health effects from environmental exposure (Trasande et al. 2005). Sources of environmental contamination in the past have been coal burning, municipal incinerators, loss in water effluent from chlor-alkali plants, refining of petroleum products, mining, and smelting (Trasande et al. 2005). Clinical manifestations of mercury poisoning include paresthesia (tingling of skin), ataxia (incoordination), dysanthria (difficulty with words), and visual and hearing impairment, in that order. Methyl mercury easily crosses cell membranes and preferentially binds in the nervous system and brain (Trasande et al. 2005). Since there is no placental barrier to mercury, the fetus nervous system can be harmed by prenatal exposure. Methyl mercury inhibits the growth of the fetal brain, possibly by destroying microtubules necessary for cell division occurring primarily during normal development (Trasande et al. 2005). Effects range from personality changes (shyness, irritability) to a severe neurological syndrome similar to cerebral palsy. In previous outbreaks of severe mercury contamination, children exposed prenatally had permanent cerebral involvement whereas their mothers had mild manifestations or none.

3. Commercial collectors are harvesting potentially contaminated turtles from Iowa streams where fish advisories are imposed by the Iowa Department of Natural Resources. These turtles are sold for human consumption to seafood markets in the United States and Asia.

Demand for turtle meat and their body parts deriving from wild caught turtles has been on the rise in growing Asian communities in Houston, Dallas Fort Worth, Oklahoma City, Atlanta, San Francisco and New York City (S. Haitao, pers. comm. 2007). Chinese turtle dealers frequent online commercial reptile websites and post solicitations to recruit American sources to export "huge numbers" of freshwater turtles from the United States including common snapping turtles, softshell turtles and even the alligator snapping turtle, which is protected throughout its range except by licensed dealers in Louisiana. *See Exhibit E. International demand of "huge numbers" of freshwater turtles from the United States.*

The Iowa Department of Natural Resources allows commercial turtle collectors to legally take an unlimited number of common snapping turtles, softshell turtles and painted turtles with a commercial turtle license using an unlimited number of hoopnets. Nonresident dealers can only take these three species from the Missouri, Mississippi and Bog Sioux Rivers. Chapter 482.11-Turtles. *See also* 2009 Iowa Fishing Regulations available at http://www.iowadnr.gov/law/regs/2009regs_fish.pdf. Commercial turtle licenses require monthly mandatory reporting of the number of pounds harvested according to the license application available at http://www.iowadnr.gov/cs/files/542-0256.pdf. It is unknown how many thousands of pounds have been harvested from Iowa over the last twenty years. The largest known Midwest state dealer of common snapping turtles has operated in Iowa for more than thirty years. In 1995 he started another operation in central Oklahoma due to harvest restrictions in neighboring states including Minnesota and Michigan.

From November 2002 to November 2005 the number of wild caught freshwater turtles declared as exports from U.S. ports was 732,949 turtles according to the U. S. Law Enforcement Management Information System (LEMIS), including 173,243 common snapping turtles (*Chelydra serpentina*), 21,797 unidentified musk turtles (*Sternotherus* sp.), 11,081 painted turtles (*Chrysemys picta*), 4,694 unidentified mud turtles (*Kinosternon* sp.), 1,450 diamondback terrapins (*Malaclemys terrapin*), and 223 spotted turtles (*Clemmys gutatta*) (WCT 2006). The declared exports averaged almost a quarter million turtles annually, reflecting the declared trade in live turtles, not the illegal trade or dead turtles possibly exported as meat or fish. The majority of the wild caught freshwater turtles exported from the U.S. go through just a dozen international ports, the major ones being Atlanta, GA; Chicago, IL; Dallas/Fort Worth, TX; Los Angeles, CA; Miami, FL; New Orleans, LA; and San Francisco, CA. The primary destinations for turtles exported from the U.S. are the food markets of China and Southeast Asia, Asian turtle farms to be grown out and then sent to market or used as breeding stock, and pet markets around the world.

Data compiled from the U.S. Fish and Wildlife Service in Texas show that from 2002-2005 more than 256,638 wild caught adult turtles were exported from Dallas Fort Worth Airport to Asia for human consumption. *See* Exhibit C 2005-2002 *USFWS Law Enforcement Management Information System data DFW airport.* 170,000 of these were exported by a single interstate turtle dealer who resides in Texas and who has boasted of exporting between 2,000 and 6,000 pounds of live wild caught turtles to China per week;

and supplying Asian markets throughout the U.S. including Texas, California and New York. In 2007 the Texas dealer held numerous pyramid scheme seminars titled "Turning turtles into cash," and passed a card titled "U.S.T.A.R.T. United States Turtles & Aquatic Resources Technologies – A Rural Economic Development Ag CO-OP Income Generating Program." The Texas dealer publicly stated he already employed an interstate network of 450 collectors from states where unlimited harvest was legal - including Texas, Oklahoma, Louisiana, and Florida - to harvest turtles exclusively for his "private coop" interstate and export business. *See Exhibit D Notes from seminar "Turning turtles into cash March 2007 Cleburne Texas."* The dealer remarked needing to recruit additional collectors to join his "army" of trappers in the southern United States to capture an additional 300,000 wild caught turtles for the year 2007 to "feed Asia." These figures were verified by the Texas Parks and Wildlife Department which shortly afterwards prohibited commercial harvest from public waters in Texas.

At his seminars, the Texas turtle dealer urged the audience to join his coop for $250, sign a license agreement to trap turtles exclusively to his business and provided each new member three hoopnets and a DVD how to trap turtles. The dealer attended each seminar with a refrigerated horse trailer that he described is capable of holding 14,000 lbs of turtles that he uses to transport and purchase turtles that are stockpiled by his collectors at locations throughout the south. This was also verified by the Texas Parks and Wildlife Department and one of the authors of this emergency rule request. The dealer stated that he primarily targets large common snapping turtle and softshell turtle (10-30 lbs) from the wild for their greater meat potential and pay collectors a higher price per pound, compared to prices yielded from turtles classified as red eared slider and river cooter. ($1.00 per lb. vs. 10 cents per lb.) *See Exhibit D.* He divulged that his collectors incidentally capture alligator snapping turtle in their traps and that only Louisiana turtle farmers are allowed to sell alligator snappers. Ironically, these older larger turtles also bioaccumulate greater amounts of aquatic heavy metal contamination. *See Exhibit D.*

In 2004 the EPA issued a national fish consumption advisory for mercury in both private and public waters in Iowa (EPA 2004). The Iowa Department of Public Health has conducted bioaccumulation studies of fish tissue taken from lakes and streams in Iowa, which show elevated levels of methyl mercury above the 0.5 mg/kg consumption advisory level. IDPH's studies also yielded high levels of organic pollutants. Elevated levels of mercury in Iowa has led to fish consumption advisories for 4 rivers and 5 lakes and 2 lakes for PCBs. *Iowa Fish Consumption Advisories, January 2009,* Available at http://www.iowadnr.gov/fish/news/consump.html.

According to the U.S. Fish and Wildlife Service, both private and public surface waters produce contaminated fish. Studies of private waters in Iowa are limited, however the Service identified elevated levels of mercury in fish tissues from public and private reservoirs in south Oklahoma, and concluded that the source of contamination derived from atmospheric mercury emissions of anthropogenic sources which do not distinguish public from private waters when depositing onto the earth (Giggleman and Lewis 2003). Turtles present in Iowa's private waters including stock tanks and lakes likely carry

comparable toxicity levels of methyl mercury in public streams where fish advisories are in place.

4. Due to public health risk, the Iowa Department of Natural Resources and the Iowa Department of Public Health should immediately prohibit commercial harvest of turtles in Iowa and lead a state and federal interagency investigation of commercial sales of potentially contaminated wild caught turtles for human consumption in seafood markets in Iowa, the United States, and other countries

In light of the evidence associating commercial harvest of wild Iowa turtles for intrastate, interstate and international human consumption with PCB, pesticide and heavy metal contaminated Iowa streams, and due to scientific evidence that suggests turtles bioaccumulate greater levels of aquatic contaminants, especially adult turtles, beyond permissible values for human consumption, the IDNR and IDPH should immediately prohibit commercial collection and sale of all wild caught turtles, until a multiagency investigation is executed to determine: 1) the number of intrastate and interstate seafood markets selling wild caught turtles originating from Iowa; 2) the toxicity levels of turtles sold to these markets; and 3) the streams producing wild caught turtles for human consumption for buyers instrastate, interstate and internationally. An emergency moratorium is necessary immediately since commercial collectors and dealers are actively harvesting turtles for their meat potential this spring for sale to markets for human consumption.

IV. AN EMERGENCY RULE IS NECESSARY TO PROTECT TURTLE POPULATIONS FROM EXPERIENCING DEPLETIONS IN THE WILD BELOW THEIR IMMEDIATE RECUPERATIVE POTENTIAL

1. The best available scientific evidence shows turtles cannot sustain any level of harvest without causing population crashes in the wild

Scientific evidence demonstrates the principles of sustainable yield are no longer applicable to freshwater turtles without leading to population crashes. Any level of harvest of wild turtles prevents their protection, conservation and enhancement and perpetuation of self-sustaining population levels in the wild and directly causes population crashes. Unlike traditional game animals managed by wildlife agencies (mammals, birds and fish), reptilian turtles have distinct life history characteristics that do not allow most populations to be subject to take without leading to population crashes (Congdon et al. 1994). *See Exhibit A.* Significantly, this evidence demonstrates turtles and tortoises are the most sensitive of all animals managed by wildlife agencies that quickly result in population crashes when subject to commercial harvest (Congdon et al. 1994). Long term demographic studies over two decades demonstrate that turtles have unique biological characteristics and life history traits that make turtle populations exceptionally vulnerable to depletions in the wild.

A prime example of over-harvest was the stepped-up collection of alligator snapping turtles (*Macroclemys temminckii*) from the 1960s through the 1980s by commercial turtle

trappers for the restaurant trade (Roman et al. 1999). Consequently the species has been drastically reduced in numbers in some of the southeastern U.S. rivers it once inhabited (Moler 1992, Jensen 1998).

Demographic studies of various turtle species including common snapping turtle (*Chelydra serpentina*), alligator snapping turtle (*Macrochelys temminckii*) and box turtles (*Terrapene*) show turtle populations are characterized by delayed maturation (15-17 yrs to reproduce), high adult survivorship (live more than 70 years), and low survival of nests and juveniles (Congdon et. al. 1994; Reed et al. 2002; J. Koukl pers. comm. 2006). Turtles are extremely long lived and maintain population numbers through high adult survival despite very low hatchling and juvenile survival. Low recruitment is offset by the long breeding life of the adults under normal circumstances. Removal of adult turtles from wild populations removes the reproductive potential of that animal over a breeding life that may exceed 50 years. Turtles cannot compensate for a reduced adult population with increased hatchling survival (Brooks et al. 1991). These factors make turtle populations extremely sensitive to harvest of adults. Findings of Reed et al. (2002) show that the removal of as few as 2 female adult alligator snapping turtles will halve a population of 200 turtles in 50 yrs:

> In order to maintain a stable population using biologically realistic values for fecundity, age at maturity, and survival of nests and juveniles, annual adult survivorship of females must be 98%. Reducing adult survivorship by as little as one quarter of one percent (to 97.75%) will result in population size being halved in 410 years. Reducing adult survivorship by two percent (to 96%), which would be equivalent to annually removing only two adult females from a total population size of 200 turtles (assuming even sex ratios) will halve the population in only 50 years.

Congdon et al. (1994) found that with continued harvest pressures as low as 10 percent of the adults above 15 years of age, a snapping turtle population could be halved in as few as 15 years. Many of the snapping turtles taken by sport and commercial collectors are gravid females that are on land to nest (Congdon et al. 1994). Congdon et al. (1994) concluded that "large increases in mortality caused by harvesting adults will certainly have a major impact on the population."

A study of a healthy and protected wood turtle (*Glyptemys insculpta*) population documented the extirpation of the population in only a decade after the area was opened to recreational usage, with the sole difference in conditions being the removal of occasional adults by recreational users (Garber and Burger 1995). Similar results were noted for a wood turtle population in Maine, where reproductive recruitment declined as adults were continually removed. A demographic model estimated that removal of a single adult annually from a stable population of 100 adult wood turtles would cause a 60% decline in over 100 years, and that removal of two animals annually would extirpate the population in less than 80 years (Compton 1999).

Because turtles are slow growing and long-lived, population stability depends on adult survivorship or the constant presence of breeding adults to offset naturally high mortality in nests, hatchlings and juveniles (Reed et al. 2002). Significantly, no published or unpublished field data exist, nor does any state wildlife agency or university have information demonstrating that turtles can be subjected to "sustainable" harvest without causing population crashes. Congdon et al. (1994) concluded that the low fecundity, low nest survival and the high juvenile and adult survival needed to maintain stable freshwater turtle populations "argues strongly against justifying sustained harvest of populations of long-lived organisms with arguments based on the concept of sustained yield."

3. Other state wildlife agencies have banned commercial harvest due to scientific evidence showing turtles can not sustain any level of harvest from the wild without leading to population depletions

Over the last two years, Texas and Oklahoma have prohibited all commercial harvest from public waters, due to harvest pressures to supply wild turtles to Asia. State wildlife agencies in Illinois, Indiana, North Carolina and Alabama also have acknowledged that pressures from commercial harvest regimes cause population depletions in most turtle species to unviable and unsustainable levels, and four of these five states have addressed the problem by banning commercial harvest of all native freshwater turtles. These agencies have gathered baseline population data to support blanket moratoriums and have concurred with published scientific authorities presented in this petition to prohibit commercial take of freshwater turtles from the wild. Significantly, wildlife biologists from these states have advised neighboring states to ban harvest, since wildlife traffickers collect turtles in states where they are protected and purport these turtles were collected in states where harvest is still legal.

4. *Misidentification of protected species for harvested species is common, which facilitates illegal markets*

Iowa law prohibits the harvest of rare turtle species including alligator snapping turtles (*Macrochelys temminckii*), chicken turtles (*Deirochelys reticularia*) and Blanding's turtles (*Emydoidea blandingii*). However, these species overlap in range with non-protected turtles in and incidentally enter baited traps set by commercial collectors. Trappers often can not distinguish alligator snappers from common snappers and coin both species simply as "snappers" or "loggerheads." To the untrained eye chicken turtles are strikingly similar in appearance to red eared sliders and river cooters. Collectors who can distinguish these species and who realize their high value for the international pet trade may purposely harvest and portray them as common snappers and red eared sliders and sell these to dealers in states where their commerce is legal. For example, licensed turtle dealers/farmers in Louisiana may legally sell alligator snapping turtles and adults often sell for more than $2,000 each. The IDNR has records of state licensed collectors misidentifying species (Irwin 2007). Collectors may also misidentify chicken turtles as snapping turtles. In Kentucky, Tennessee, Arkansas, Louisiana, Florida and Georgia it is illegal to capture and sell wild caught chicken turtles. A turtle that is dependent on the

presence of ephemeral wetlands, the chicken turtle is a declining species that may qualify for federal protection under the Endangered Species Act. Adults are highly sought by the pet trade to produce hatchlings that sell for $60 each. *See Exhibit E.*

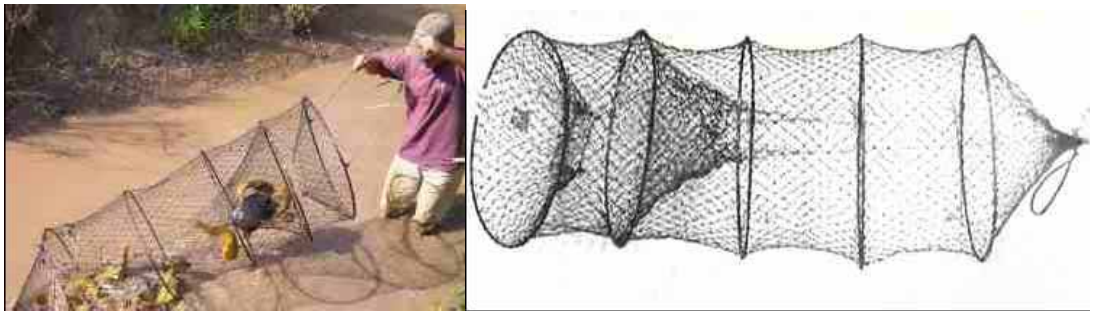
The pet trade appears especially hazardous for some turtle species. The international pet trade prizes all 12 species of map turtles, which are drainage specific and are now protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 27 U.S.T. 1087. Each watershed that drains into the Gulf of Mexico produces a brilliant unique geophysical coloration and topographic pattern on the map turtles' shell and skin. Some map turtle species fetch more than $150 per adult on commercial internet websites. *See Exhibit E*. Many map turtles in Texas, Alabama, Mississippi, Florida and Georgia warrant federal protection under the Endangered Species Act (16 U.S.C. § 1531 (2007)). Two species that occur in Mississippi are already listed under the Act due to over collection for the pet trade: the yellow blotched sawback map turtle (*Graptemys flavimaculata*) and ringed sawback map turtle (*Graptemys oculifera*). Commercial demand for map turtles is so high that illegal turtle collectors in Georgia and Florida have traveled to Texas to spend weeks collecting thousands of map turtles for the international pet trade (A. Redmond, pers. comm. 2000). Game wardens are not fully trained to distinguish most aquatic turtle species, and face difficulty enforcing the law when encountering collectors and their turtle bounties in the field. Turtle dealers on the internet often sell wild caught hatchlings and adults and claim they are captive bred in online solicitations.

5. Iowa law allows the use of lethal unlimited sized box traps and hoopnets to capture turtles, which results in unknown numbers of drownings of protected aquatic wildlife, including alligator snapping turtle, paddlefish, and migratory birds

Iowa law allows turtle collectors to deploy an unlimited number of box traps and hoopnets to harvest freshwater turtles. Iowa Administrative Code 571-86.1 (2008). Biologists have observed that turtle traps are effective in capturing most adult turtles in a stream segment, and that a single harvest event can deplete and even extirpate a population for more than a decade (D. Riedle, pers. comm. 2008). This impedes turtle populations from increasing, once the majority of large reproductively successful adults are absent.

Box traps are square or rectangular shaped traps several feet long with openings on the top of the trap "fall pits" or on the sides to allow entry of wildlife through the water. Hoopnets range in length but most are long collapsible cylinder-shaped wire mesh or webbed netting funnel traps that are more than 8 feet long and supported by 3 to 5 three-foot diameter hoops. 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.

FIGURE 1



However turtles are not the only aquatic animals taken by hoopnets and boxtraps. These devices are extremely susceptible to capturing all aquatic animals in the trap location including fish, aquatic mammals (such as nutria, beaver, muskrat, otter, and mink), snakes and state and federal threatened and endangered species. 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, weight and movement of captured animals (S. G. Platt pers. comm. 2007).

Biologists have noted the propensity of turtle hoopnets to capture and drown alligator snapping turtles due to the weight of this large turtle (some exceed 100 lbs), sinking the trap below the water surface (S. G. Platt pers. comm. 2007). Other researchers note that box traps and hoopnets capture and maim paddlefish (*Polyodon spathula*) and drown aquatic migratory birds that are protected under the Migratory Bird Treaty Act, 16 U.S.C. § 703 (2007) (C. Rudolph pers. comm. 2007; R. Nelson pers. comm. 2007).

V. AN EMERGENCY RULE IS NECESSARY UNDER STATE WILDLIFE LAWS THAT DISCOURAGE INTERSTATE COMMERCE OF ILLEGALLY COLLECTED WILDLIFE

The Lacey Act (16 U.S.C. § 701 (2007)) prompts the IDNR to enact effective state wildlife laws that discourage interstate commerce of illegally collected wildlife. Iowa law's mandatory reporting provision for turtle buyers relies on truthfulness of dealers to report legitimate numbers of turtles taken from the wild; however the IDNR does not police turtle harvests and lacks the administrative and law enforcement manpower to ensure buyers are not misrepresenting harvest numbers or species. As a result, wildlife traffickers are capable of illegally harvesting turtles in parts of other states where they are protected (such as Illinois) and misidentifying these as snapping turtles that originated in Iowa, where unlimited harvest is legal.

RESPECTFULLY SUBMITTED,

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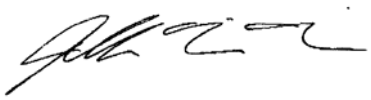

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Literature Cited

Behler, J. L. 1997. Troubled times for turtles. Proceedings: conservation, restoration, and management of tortoises and turtles— an international conference. *Available online at http://nytts.org/proceedings/proceed.htm (accessed during June 2001).*

Brooks, R.J., G.P. Brown, and D.A. Galbraith. 1991. Effects of a sudden increase in natural mortality of adults on a population of the common snapping turtle (*Chelydra serpentina*). Can. J. Zool. 1314-1320.

Compton, B. 1999. Ecology and Conservation of the Wood Turtle (*Clemmys insculpta*) in Maine. MS Thesis, University of Maine.

Congdon J.D., A.E. Dunham, and R.C. van Lobels Sels. 1993. Delayed Sexual Maturity and Demographics Blanding's Turtles (*Emydoidea blandingii*): Implications for conservation and management of long-lived organisms. Conservation Biology Vol. 7, No.4.

Congdon J.D., Dunham AE, van Lobels Sels RC. 1994. Demographics of Common Snapping Turtles (*Chelydra serpentina*): Implications for conservation and management of long-lived organisms. Amer. Zool. 34:397-408).

Ernst, C.H., J.E. Lovich and R.W. Barbour. 1994. Turtles of the Unites States and Canada. Smithsonian, Washington D.C.

Florida Fish and Wildlife Conservation Commission (FFWCC). 2007. Freshwater turtles. *Available at http://myfwc.com/critters/turtles.asp*.

Garber, S.D. and J. Burger. 1995. A 20-yr study documenting the relationship between turtle decline and human recreation. Ecological Applications 5: 1151-1162.

Gibbons, J.W., D.E. Scott, T.J. Ryan, K.A. Buhlman, T.D. Tuberville, B.S. Mets, J.L. Greene, T. Mills, Y. Leiden, S. Poppy, and C.T. Winne. 2000. The Global Decline of Reptiles, Déjà Vu Amphibians. Bioscience Vol. 50, No. 8, 653-666. August 2000.

Giggleman, C.M. and Lewis, J.M. 2003. Metals contamination in fish in reservoirs at Wichita Mountains Wildlife Refuge, Comanche County Oklahoma. July 2003. 131 pp.; and Giggleman, C.M., Baker, D.L. and Lusk, J.D. A contaminants survey of three lentic systems within the cypress creek watershed, Texas 1993-1995. U. S. Fish and Wildlife Service 143 pp.

Iowa Department of Natural Resources and Iowa Department of Public Health (IDNR and IDPH). 2009. Available at http://www.iowadnr.gov/fish/news/consump.html

Jensen, J.B. 1998. Distribution and status of the alligator snapping turtle (*Macroclemys temminckii*) in Georgia. Paper presented at the 78th Annual Meeting of the American

Society of Ichthyologists and Herpetologists; 16–22 Jul 1998; University of Guelph, Ontario, Canada.

Kennish, M.J. and B.E. Ruppel. 1998. Organochlorine contamination in selected estuarine and coastal marine finfish and shellfish of New Jersey. Water, Air and Soil Pollution 101:123-136.

Kiester A.R. and J.O. Juvik. 1997. Conservation challenges of the turtle trade in Vietnam and China. Paper presented at the Joint Meeting of American Society of Ichthyologists and Herpetologists, Herpetologists' League, and Society for the Study of Amphibians and Reptiles; 26 June–2 July 1997; Seattle, WA.

Lieberman, S. 1994. Can CITES Save the Box Turtle? Endangered Species Technical Bulletin. U.S. Department of the Interior Fish and Wildlife Service. Federal Register 19 (5): 15–17.

Meyers-Schöne L. and B.T. Walton. 1994. Turtles as Monitors of Chemical Contaminants in the Environment. Reviews of Environmental Contamination and Toxicology, Volume 135.

Mitchell, K.E., The use of freshwater aquatic turtles as indicator species for the bioaccumulation of methyl mercury (In press).

Mockenhaupt, B. 1999. Turtles can't hide from hungry humans. Cambodian Daily, 7 Dec 1999: 1–2.

Moler, P.E. 1992. Rare and Endangered Biota of Florida, Vol. III. Amphibians and Reptiles. Gainesville (FL): University of Florida Press.

Moler, P. E. 1996. Alligator Snapping Turtle Distribution and Relative Abundance. Final report for the Florida Game and Freshwater Fish Commission. *On file with the Florida Game and Freshwater Fish Commission*.

Oklahoma Department of Environmental Quality (ODEQ). 2007. Fish Consumption Guidance Mercury Advisory. *Available at http://www.deq.state.ok.us/factsheets/land/fishmerc.pdf*.

Portelli, M.J. and C.A. Bishop. 2000. Ecotoxicology of organic contaminants in reptiles: a review of the concentrations and effects of organic contaminants in reptiles. Pp. 495-543. *In* D.W. Sparling, G. Linder and C.A. Bishop (eds.).Ecotoxicology of Amphibians and Reptiles, Setac Press, Pensacola, Florida.

Pritchard, P. C. H. 1989. The alligator snapping turtle: biology and conservation. Milwaukee Public Museum, Milwaukee, Wisconsin, USA. 104 pages.

Reed, R.N., J. Congdon and J.W. Gibbons. 2002. The alligator snapping turtle [Macroclemys (Macrochelys) temminckii]: A review of ecology, life history, and conservation, with demographic analyses of the sustainability of take from wild populations. Report to: Division of Scientific Authority, United States Fish and Wildlife Service.

Roman J., S.D. Santhuff, P.E. Moler, and B.W. Bowen. 1999. Population structure and cryptic evolutionary units in the alligator snapping turtle. Conservation Biology 13: 135-142.

Riedle, J.D. 2001. The ecology of the alligator snapping turtle, *Macrochelys temminckii*, in Oklahoma. Unpublished M.S. thesis, Oklahoma State University 220 pages.

Safe, S. 1994. Polychlorinated Biphenyls (PCBs): Environmental impact, biochemical and toxic response and implications for risk assessment. CRC Critical Reviews of Toxicology 24:87-149.

Sharma, D.S.K. 1999. Tortoise and Freshwater Turtle Trade and Utilisation in Peninsular Malaysia. A TRAFFIC Southeast Asia Report. Petaling Jaya, Selangor (Malaysia).

Trasande, L., P. J. Landrigan, and C. Schechter. 2005. Public Health and Economic Consequences of Methyl Mercury Toxicity to the Developing Brain. *From National Institutes of Health, available at http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1257552*.

U. S. Department of State. 2007: Bureau of East Asian and Pacific Affairs. *Available at http://www.state.gov/r/pa/ei/bgn/18902.htm*.

U. S. Environmental Protection Agency (USEPA). 2008. EPA's website National Fish Advisories: Advisory Output for Iowa, January 2008. *Available at http://oaspub.epa.gov/nlfwa/nlfwa.advrpt*.

World Chelonian Trust (WCT). 2006. Declared Turtle Trade from the United States, November 2002 to November 2005. Information from the U. S. Law Enforcement Management Information System (LEMIS). Available at www.chelonia.org.

Personal Communications

C.H.J pers. comm. with Larry Andrews, Oklahoma Alligator Snapping Turtle Conservation Group, and Oklahoma Herpetological Society, 2/2/08.

C.H.J pers. comm. with G.A. George, Herpetologist, Tennessee Aquarium, 10/31/07.

C.H.J pers. comm. with Dr. Shi Haitao, Chair, Department of Biology, Hainan Normal University, China, 7/26/07.

C.H.J pers. comm. with Kelly Irwin, Herpetologist, Arkansas Fish and Game Commission, 2-22-07.

C.H.J pers. comm. with Dr. James Koukl, Professor of Biology, University of Texas, Tyler, 7/20/06.

C.H.J personal communication with Paul Moler, Herpetologist of the Florida Freshwater Fish and Wildlife Conservation Commission, 1/29/08.

C.H.J pers. comm. with R. E. Nelson, Couch Environmental, 3/9/07.

C.H.J pers. comm. with ODWC employee who requests anonymity. 1/30/08.

C.H.J pers. comm. with Jeff Pennington, Biologist, ODWC, 2/07/08.

C.H.J pers. comm. with Dr. S.G. Platt, Associate Professor of Biology, Sul Ross State University, 3/11/07.

C.H.J pers. comm. with Dr. Thomas Rainwater research assistant professor Texas Tech University Institute of Environmental and Human Health, 3/10/07.

C.H.J. pers. com. with Albert Redmond, an interstate commercial turtle trapper in Georgia, 4/22/00.

C.H.J pers. comm. with D. Riedle, West Texas ATM University, 2/02/08.

C.H.J pers. comm. with Dr. Willem Roosenburg, Associate Professor, Department of Biosciences, Ohio University, 3/10/07.

C.H.J pers. comm. with Dr. Craig Rudolph, U. S. Forest Service Wildlife Research Center, 3/15/07.

C.H.J. pers. comm. with three out of seven Asian seafood markets in Oklahoma City that purchased large snapping turtle and softshell turtle in spring and summer. 1/29/08.