BEFORE THE TENNESSEE WILDLIFE RESOURCES AGENCY COMMISSION, GOVERNOR OF TENNESSEE, TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, AND THE TENNESSEE DEPARTMENT OF HEALTH

EMERGENCY RULEMAKING REQUEST TO REPEAL TENNESSEE'S TURTLE COLLECTION LAW

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

MARCH 11, 2009

Center for Biological Diversity
Center for Food Safety
Center for North American Herpetology
Center for Reptile and Amphibian Conservation and Management
Tennessee Chapter of the Sierra Club
Tennessee Herpetological Society
Tennessee Scenic Rivers Association
Save The Cumberland

Center for Biological Diversity, Center for Food Safety, Center for North American Herpetology, Center for Reptile and Amphibian Conservation and Management, Tennessee Chapter of the Sierra Club, Tennessee Herpetological Society, Tennessee Scenic Rivers Association, and Save The Cumberland, nonprofit organizations, come forth to the Governor of the State of Tennessee, the Executive Director and Commission of the Tennessee Wildlife Resources Agency, the Tennessee Department of Environment and Conservation, and the Tennessee Department of Health by and through their attorney Christopher Hunter Jones, and submit this administratively complete petition (as defined by Tennessee Statute § 4-5-201 (2008)) requesting the Commission to immediately repeal commercial harvest of all freshwater turtles (chelonians). Petitioners request that all chelonians be removed from Tennessee Rule 1660-1-17-.01(5)(b) (2008), and TWRC Proclamation 08-01 and hereinafter the state of Tennessee afford all wild freshwater turtles in Tennessee protection from commercial harvest, sales and export. Tennessee law currently allows an unlimited number of common snapping turtles (*Chelydra serpentina*) to be harvested from the wild and sold as food. Under this regime, every common snapping turtle that exists in Tennessee can be legally collected and sold. Tennessee also allows unlimited harvest of nearly all turtle species from three counties along the Mississippi River in extreme northwestern Tennessee, which serves as a loophole for collectors to take turtles from other counties where they are protected. Unregulated harvest and commercial collection are rapidly depleting Tennessee's wild turtle populations. Consumption of turtles known to be contaminated with toxins and pollutants poses a significant public health risk.

The Center for Biological Diversity is a nonprofit, science-based environmental advocacy organization that works to protect endangered species and wild places throughout the world through science, policy, education, citizen activism and environmental law.

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The Tennessee Chapter of the Sierra Club is a non-profit advocacy organization dedicated to explore, enjoy, and protect the wild places of Tennessee; to practice and promote the responsible use of Tennessee's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.

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The Tennessee Scenic Rivers Association is a volunteer organization dedicated to the preservation, protection and restoration of the scenic, free-flowing rivers of our state. Based in Nashville, Tennessee, the organization has approximately 1,000 members across the state and the south.

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Save The Cumberland developed from Captain Vic Scoggins' 696 mile fact finding swim down the Cumberland River. The purpose of this swim was to bring public environmental awareness , and to gather information to battle what is destroying its existence. Through education of our youth and the awareness for the people to make thorough judgments about what dictates our health, we can succeed in making the river as it should and was two hundred years ago. Save The Cumberland offers valuable information pertaining to the 18,000 square mile area of the Cumberland River watershed.

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The Tennessee Herpetological Society is a not for profit organization dedicated to promoting the study and conservation of reptiles and amphibians worldwide, but particularly within Tennessee.

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I INTRODUCTION

Commercial collection of wild turtles in Tennessee is a wildlife management challenge like nothing faced in the history of the Tennessee Wildlife Resources Agency (TWRA) and the Tennessee Department of Environment and Conservation (TDEC). These agencies currently allow unlimited commercial harvest of common snapping 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 TWRA and TDEC have a duty to protect the public from unsafe turtle meat products originating in Oklahoma under the Federal Food Drug and Cosmetic Act (21 U.S.C § 301 (2007)). A substantial and imminent public health risk exists in since commercial turtle collectors and buyers are harvesting and purchasing turtles from Tennessee waters and streams where fish advisories are in place by the TDEC, and these turtles are potentially contaminated with PCBs, pesticides and heavy metals (USEPA 2008; TWRA and TDEC 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, Tennessee law continues to allow unlimited commercial take of adult common snapping turtles (*Chelydra serpentina*) (12 inches or greater carapace length) 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 Uniform Administrative Procedures Act grants the TWRA and the TDEC the power to adopt emergency rules when immediate danger exists to the public health, safety or welfare:

> If an agency finds that an immediate danger to the public health, safety or welfare exists, and the nature of this danger is such that the use of any other form of rulemaking authorized by this chapter would not adequately protect the public, the agency may, upon stating its reasons in writing for making such findings, proceed without prior notice or hearing to adopt an emergency rule. Such emergency rule shall become effective immediately, unless otherwise stated in the rule, upon a copy of such rule and a copy of the written statement of the reasons for the rule being filed with the secretary of state.

Citing the Uniform Administrative Procedures Act - Emergency Rules – Tennessee Code Annotated 4-5-208(a) (2008): Any person may petition a rulemaking:

> Except where the right to petition for a rule is restricted by statute to a designated group or except where the form of procedure for such petition is otherwise prescribed by statute, any municipality, corporation or any five (5) or more persons having an interest in a rule may petition an agency requesting the adoption, amendment or repeal of such rule.

T.C.A. 4-5-201 (2008). *Petitions for or against rules*.

Center for Biological Diversity, Center for Food Safety, Center for North American Herpetology, Center for Reptile and Amphibian Conservation and Management, Tennessee Chapter of the Sierra Club, Tennessee Scenic Rivers Association, Tennessee Herpetological Society, and Save the Cumberland hereby submit this document to serve as an administratively complete petition and respectfully request that the TWRA and TDEC immediately issue an emergency rule in accordance with Tennessee Statute 4-5-208 (2008). This petition provides evidence of imminent peril to the public health safety and welfare of citizens of Tennessee, the United States and other countries by allowing commercial collectors and buyers to sell for human consumption potentially contaminated turtles taken from waters in Tennessee that are contaminated with carcinogenic aquatic contaminants and from streams that are imposed with fish consumption advisories by the TDEC. As a requirement of state law the TWRA has a duty to protect, propagate, increase, preserve, conserve, and restore turtle populations in Tennessee. Under requirements of federal laws the TWRA and TDEC 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 Oklahoma 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 Tennessee streams where fish advisories are imposed by the Tennessee Department of Environment and Conservation. 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 number" 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*.

In the mid 1990s the TWRA created a regulation that prohibited commercial harvest of most turtle species throughout the majority of the state, after law enforcement reported encountering resident and nonresident turtle collectors in Tennessee who worked for large scale turtle export turtle dealers in Louisiana and Arkansas. However, the TWRA continued to allow unlimited harvest of eleven turtle species from three Tennessee counties along the Mississippi River surrounding Reelfoot Lake in extreme northwest Tennessee. In Lake, Obion, and Dyer counties snapping turtles, map turtles, softshells, river cooters, sliders, and musk turtles may continue to be taken commercially in unlimited quantities. *See Tennessee Wildlife Resources Commission Proclamation 08-01 Statewide Proclamation on the Commercial Taking of Fish and Turtles Section V. Report Requirements*. Statewide the TWRA allows the unlimited commercial harvest of common snapping turtles and requires mandatory reporting from collectors including those who harvest in counties overlying Reelfoot Lake. *Id*.

Tennessee is one of the only states in the nation that has conducted bioaccumulation analyses of snapping turtles muscle tissue, fat tissue and eggs (TDEC 1997). The sampled results show high levels of pesticides, heavy metals and mercury in snapping turtles (0.24-516 ppm fat tissue/ 0.032-3.38 ppm muscle/ 0.354-3.56 ppm) beyond permissible FDA guideline thresholds that were safe for consumption (2.0 ppm). During the spring and summer of 1996, twenty-five turtles were sacrificed from ten sites on the Watts Bar Reservoir and the Clinch River to determine concentrations of PCBs. Muscle tissue was also analyzed for arsenic, cadmium, chromium, copper, lead, mercury, aldrin, dieldrin, o,p-DDE, o,p-DDD, o,p-DDT, p,p-DDE, p,p-DDD, p,p-DDT, alpha-chlordane, gamma-chlordane, cis-nonachlor, trans-nonachlor, endrin, methoxychlor, alpha-BHC, lindane, and hexachlorobenzene. These analytes were included to use as a comparison with other results from previous fish tissue studies in Watts Bar Reservoir and the Clinch River.

The Department of Energy and TDEC concluded that snapping turtles bioaccumulate contaminants, especially PCBs, at levels greater than fish and beyond permissible consumption thresholds. This study was published in 1997; yet 12 years later it remains legal in Tennessee to commercially harvest snapping turtles from Watts Bar Reservoir to be sold as food.

In 2007, fear of emergency moratoriums in neighboring states where commercial harvest is legal may have intensified harvest pressure in Tennessee, especially in streams that are not known to have been trapped. For example, in 2007 TWRA law enforcement engaged a nonresident collector with more than 4,000 pounds of common snapping turtle harvested from Old Hickory Reservoir of the Cumberland River in Davidson County. The turtles were to be sold to an exporter in an undisclosed state.

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 alone 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 United States 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 Tennessee (EPA 2008). The Tennessee Department of Environment and Conservation has conducted bioaccumulation studies of fish tissue taken from streams in Tennessee, which show elevated levels of methyl mercury above the 0.5 mg/kg consumption advisory level. TDEC's studies also yielded high levels of organic pollutants. Elevated levels of mercury in Tennessee led to fish consumption advisories for 20 rivers and lakes; 10 streams for PCBs; and 7 streams for chlordane and other organic pollutants. *Tennessee Fish Consumption Advisories, the Tennessee Department of Environment and Conservation: Water Pollution Control August 2008. 20 pages.*

According to the U.S. Fish and Wildlife Service, both private and public surface waters produce contaminated fish. Studies of private waters in Tennessee are limited, however the Service identified elevated levels of mercury in fish tissues from public and private reservoirs in the Wichita Mountains 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 Tennessee'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 Tennessee Wildlife Resources Agency and the Tennessee Department of Environment and Conservation should immediately prohibit commercial harvest of turtles in Tennessee and lead a state and federal interagency investigation of commercial sales of potentially contaminated wild caught turtles for human consumption in seafood markets in Tennessee, the United States, and other countries*

In light of the evidence associating commercial harvest of wild Tennessee turtles for intrastate, interstate and international human consumption with PCB, pesticide and heavy metal contaminated Tennessee 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 TWRA and TDEC 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 Tennessee; 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. Tennessee law requires the Tennessee Wildlife Resources Agency to protect freshwater turtles from population depletions in the wild

The Tennessee Code mandates that the Tennessee Wildlife Resources Agency must *protect, propagate, increase, preserve and conserve* wildlife in Tennessee. T.C.A 70-1-302 (2008) *Duties and Functions.*

2. 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, Mississippi, 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

Tennessee law prohibits the harvest of rare turtle species including alligator snapping turtles (*Macrochelys temminckii*), and chicken turtles (*Deirochelys reticularia*). However, these species overlap in range with non-protected turtles in Tennessee 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 "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 AGFC 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.*

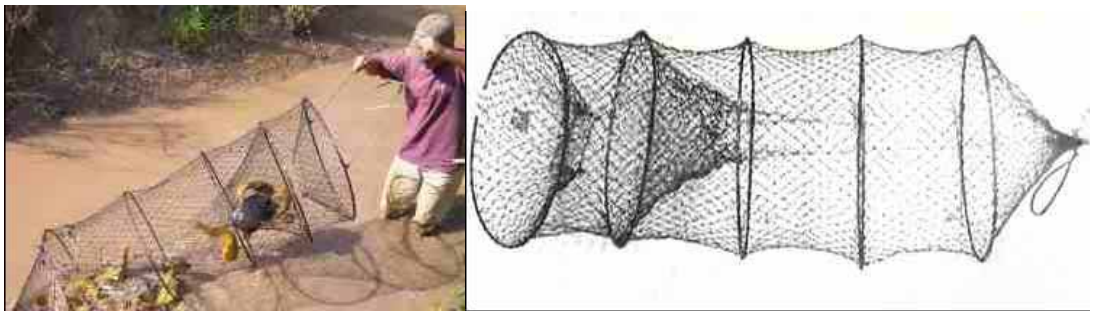
The pet trade appears especially hazardous for some turtle species. The international pet trade prizes all 12 species of map turtles, which are drainage specific and are now protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) 27 U.S.T. 1087. Each 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. Tennessee 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

Tennessee law allows turtle collectors to deploy an unlimited number of box traps and hoopnets to harvest freshwater turtles *(Proclamation 08-16 Amendment to Proclamation 08-01 Statewide Proclamation on the Commercial Taking of Fish and Turtles, October 8, 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 Tennessee Wildlife Resources Agency to enact effective state wildlife laws that discourage interstate commerce of illegally collected wildlife. Tennessee 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 TWRA 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 (Illinois) and misidentifying these as snapping turtles that originated in Tennessee, where unlimited harvest is legal.

RESPECTFULLY SUBMITTED,

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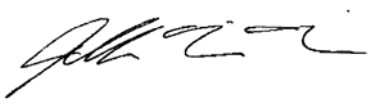

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C.H.J pers. comm. with R. E. Nelson, Couch Environmental, 3/9/07.

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.