BEFORE THE COMMISISON OF THE GEORGIA DEPARTMENT OF NATURAL RESORUCES AND THE GOVERNOR OF GEORGIA

Barbour's map turtle (*Graptemys barbouri*) – USGS photo

EMERGENCY RULEMAKING REQUEST TO REPEAL GEORGIA'S TURTLE COLLECTION LAW

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

MARCH 27, 2008

The Center for Biological Diversity, Satilla Riverkeeper, Altamaha Riverkeeper, and the Center for Food Safety, nonprofit organizations, come forth by and through their attorney Christopher Hunter Jones to the Governor of the State of Georgia and the Honorable Director of the Georgia Department of Natural Resources, and submit this administratively complete petition (as defined by Georgia Code. § 50-13-9 (2007)) requesting the Commission to immediately repeal harvest of all freshwater turtles (chelonians) in Georgia. Petitioners request that all chelonians be removed from Georgia Code § 27-1-8(a)(7)(2007) and hereinafter that Georgia afford all wild freshwater turtles in Georgia protection from commercial harvest, sales and export. Georgia law currently allows an unlimited number of freshwater turtles to be harvested from the wild and sold as food. Under this regime, every non-protected freshwater turtle that exists in Georgia can be legally collected and sold. Unregulated harvest and commercial collection are rapidly depleting Georgia'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 Georgia is a wildlife management challenge unprecedented in the history of the Georgia Department of Natural Resources. Georgia currently allows unlimited commercial harvest of turtles for human consumption to continue with little to no regulatory oversight, despite the fact that many of these turtles derive from streams that are presently under fish advisories and bans that precaution and prohibit human consumption.

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

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 United States 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 endemic 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 United States, state wildlife agencies, including North Carolina, Alabama, Mississippi and Tennessee, have banned commercial harvest of all endemic 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. Despite scientific evidence that most turtle species cannot be harvested under the historic wildlife management theory of sustainable harvest without leading to population crashes, Georgia law continues to allow unlimited commercial take of all sizes of 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 Georgia Administrative Procedures Act grants the Georgia Department of Natural Resources (GDNR) the power to adopt emergency rules when imminent peril exists to the public health, safety, or welfare:

> If any agency finds that an imminent peril to the public health, safety, or welfare, including but not limited to, summary processes such as quarantines, contrabands, seizures, and the like authorized by law without notice, requires adoption of a rule upon fewer than 30 days' notice and states in writing its reasons for that finding, it may proceed without prior notice or hearing or upon any abbreviated notice and hearing that it finds practicable to adopt an emergency rule. Any such rule adopted relative to a public health emergency shall be submitted as promptly as reasonably practicable to the House of Representatives and Senate Committees on Judiciary. The rule may be effective for a period of not longer than 120 days but the adoption of an identical rule under paragraphs (1) and (2) of subsection (a) of this Code section is not precluded; provided, however, that such a rule adopted pursuant to discharge of responsibility under an executive order declaring a state of emergency or disaster exists as a result of a public health emergency, as defined in Code Section 38-3-3, shall be effective for the duration of the emergency or disaster and for a period of not more than 120 days thereafter.

Citing Georgia Administrative Procedures Act *Emergency Rulemaking* – Georgia Code § 27-1-3(b) (2007). The Georgia Wildlife Code further imposes a duty on the GDNR's to enact emergency rules to protect the public health:

> Promulgation of rules and regulations to protect wildlife, the public, and the natural resources of this state in the event of fire, flood, disease, pollution, or other emergency situation without complying with Chapter 13 of Title 50, the "Georgia Administrative Procedure Act." Such rules and regulations shall have the force and effect of law upon promulgation by the board.

Georgia Code § 27-1-4(3) (2007). Any person may request the GDNR to enact an emergency rule based on imminent peril to the public health:

> An interested person may petition an agency requesting the promulgation, amendment, or repeal of a rule. Each agency shall prescribe by rule the form for petitions and the procedure for their submission, consideration, and disposition. Within 30 days after submission of a petition, the agency either shall deny the petition in writing, stating its reasons for the denial, or shall initiate rule-making proceedings in accordance with Code Section 50-13-4.

Georgia Code § 50-13-9 (2007) *Petition for promulgation, amendment, or repeal of a rule.*

The Center for Biological Diversity, Satilla Riverkeeper, Altamaha Riverkeeper, and the Center for Food Safety hereby submit this document to serve as an administratively complete petition and respectfully request that the GDNR immediately issue an emergency rule in accordance with Georgia Code § 27-1-4(3) (2007). This petition provides evidence of imminent peril to the public health safety and welfare of citizens of Georgia, the United States and other countries by allowing commercial collectors and buyers to sell for human consumption potentially contaminated turtles taken from waters in Georgia that are contaminated with carcinogenic aquatic contaminants and streams that are imposed with fish consumption advisories by the GDNR. As a requirement of state law, the GDNR has a duty to protect, preserve, restore, preserve, propagate and research turtle populations in Georgia. Under requirements of federal laws the GDNR has 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 Georgia 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

An emergency rule enjoining commercial harvest and sale of wild Georgia turtles is necessary since Georgia's unlimited collection law imperils public health: turtle collectors and buyers are selling potentially contaminated turtles harvested from polluted waters and streams where fish advisories are in place by the Georgia Department of Natural Resources.

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 Georgia streams where fish advisories are imposed by the Georgia Department of Natural Resources. These turtles are sold for human consumption to seafood markets in Georgia, the United States and other countries including Asia.*

Demand for turtle meat and 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 alligator snapping turtles, which are protected throughout their range except by licensed dealers in Louisiana. *See Exhibit E. International demand of "huge numbers" of freshwater turtles from the United States.*

The GDNR only requires commercial turtle collectors to obtain a fishing license in Georgia and does not require collectors to report the quantity, species, harvest locale and

destination of captured turtles (Georgia Code § 27-1-8(a)(7) (2007)). In addition to the EPA's imposition of a statewide fish advisory for methyl mercury in Georgia, the GDNR has imposed fish consumption advisories on 140 stream segments in each of the state's 14 watersheds, including 70 lakes. *See* the Georgia Department of Wildlife's *Guidelines for Eating Fish from Georgia Waters* (GDOW 2007).

Two known seafood markets in the Atlanta area continue to sell wild caught softshell and snapping turtles primarily in the late spring and summer season; Asian restaurants are believed to sell turtle as well (S. Platt pers. comm. 2007; T. Brockaway pers. comm. 2007). These turtles are allegedly captured in Georgia, however harvest locales are not known since the GDNR does not require collectors to report this information.

According to the U. S. Fish and Wildlife Service, both private and public surface waters produce contaminated turtles. 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). Freshwater turtles present in Georgia'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.

Because the GDNR does not regulate harvest nor require commercial collectors to divulge the quantity and species of turtles harvested from the wild, no data is available to show how many turtles from Georgia are sold as food in the United States or exported to Asia. However, 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 deceased turtles possibly exported as meat or fish. The majority of the wild caught freshwater turtles exported from the United States 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 United States 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 2000 and 6000 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.*

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

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

The Georgia Wildlife Code mandates that the Georgia Department of Natural Resources *protect, preserve, restore, preserve, propagate* and *research* wildlife in Georgia:

> The department shall have the following powers and duties:
> (B) For wildlife *restoration*, *propagation*, *protection*, *preservation*, *research*, or *management*;

Georgia Code § 27-1-6(B) (2007) (Emphasis added).

The GDNR's organic act further expresses that the "…the state's wildlife resources should be managed in accordance with *sound principles of wildlife management,* using all appropriate tools, including hunting, fishing, and the taking of wildlife." Georgia Code § 27-1-3(a) (2007) (Emphasis added). However, the best available published scientific evidence shows that turtles cannot sustain any significant level of harvest without causing population crashes in the wild. The principles of "sustainable yield" are not applicable to turtles, according to the published scientific evidence.

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 very 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 snapper 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 temminkcii*) 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 exists, 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

State wildlife agencies in Tennessee, Mississippi, North Carolina and Alabama realize pressures from commercial harvest regimes cause population depletions in most turtle species to unviable and unsustainable levels. These agencies have gathered baseline population data to support blanket moratoriums and have respected 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 Georgia where harvest is still legal (K. Irwin, pers. comm.2007).

4. Georgia's unlimited commercial harvest law is causing population depletions of turtles in the wild.

Except for the Chattahoochee River between Georgia and Alabama, The Georgia Department of Natural Resources allows unlimited commercial harvest of freshwater turtles using an unlimited quantity of hoopnets that do not need to be set above the water to prevent turtles from drowning (Georgia Code § 27-4-91(a)-(c)(2007)). Georgia requires commercial turtle collectors to acquire a fishing license with no mandatory reporting of quantity, species, harvest locale and destination of captured turtles.

Like most state wildlife agencies, GDNR is lacking baseline field surveys to determine densities of turtle populations. However, herpetologists of the Tennessee Aquarium who have surveyed Georgia and Florida's relatively clear limestone streams with snorkels and masks for nearly three decades report a drastic population depletion and even extirpation of most southern map turtle species (G.A. George, pers. comm. 2007). One veteran herpetologist of the Tennessee Aquarium reported in 1998 observing, capturing and releasing more than 30 adult Escambia map turtles (*Graptemys ernsti*) in a 0.25 mile stream segment of the Yellow River in Okaloosa county Florida. He returned to the locale in April of 2006 and could not locate a single map turtle (G. A. George pers. comm. 2007). In another Florida locale in May of 2007, the diver could not locate any Barbour's map turtle (*G. barbouri*) in a 0.25 mile segment of the Chipola River in

Jackson County after finding 20 adults and hatchlings in 1995. In eastern Alabama, over the last thirty years the diver has noted a similar trend of Alabama map turtles (*G. pulchra*) on the Locust Fork River in Jefferson County and of Pascagoula map turtles (*G. ernstii*) throughout the Pascagoula River in Mississippi. He believes the depletions are a result of over collection for the pet trade since commercial collectors have been aware of these locales for many years. He stressed that scientific publications and field guides describing these species and their locales are used by commercial collectors.

Georgia protects the Bog turtle (*Glyptemys muhlenbergii*) as Endangered and the Barbour's map turtle (*Graptemys barbouri*) and alligator snapping turtle (*Macrochelys temminckii*) as Threatened. These turtles are likely captured incidentally in traps since they coexist with commercial species in the Flint River and are highly prized by the international pet trade. One of the largest commercial alligator snapping turtle dealers known in the United States historically operated a meat processing operation in south Georgia; and admitted that in the 1970s he regularly harvested more than 3-4 tons of adult alligator snapper from the Flint River per day using as few as 14 hoopnets. The meat was sold to seafood dealers and even to Campbell's Soup for a turtle soup product, once marine turtles were federally protected in the 1970s (Johnson 1989). The dealer also stated his actions caused the extirpation of the alligator snapping turtle in Georgia and consequently its statewide listing as a protected species (Johnson 1989). He has also supplied turtle meat markets in Louisiana and has exported adult alligator snapping turtle and several species of map turtles to Europe and Asia. In the late 1990s the dealer and two others captured more than 2,500 Sabine map turtles in Texas and exported the majority of them to a buyer in Europe.

Because of their brilliant topographical patterns and colorations, the map turtles, including the Barbour's map turtle (*Graptemys barbouri*) which is limited to the Flint River in Georgia, are highly sought after and prized by international pet dealers and hobbyists. Georgia law does not require collectors to report the quantity, species, harvest locale and destination of captured turtles (Georgia Code § 27-1-8(a)(7) (2007)). As a result there is no data available showing how many wild caught turtles are annually harvested in Georgia. Since the inception of the internet in the 1990s, instant online communication exists between collectors and dealers in Georgia and interstate and international buyers of turtles. This has spawned an unknown number of turtle farms in the neighboring state of Florida that stockpile adults for future delivery to buyers and to breed hatchlings in captivity for the pet trade. "Turtlefarming" in Florida has intensified not only demand from Asian buyers but also supplies Mississippi and Alabama, states that now prohibit commercial harvest and sales of their turtles. Several streams in Georgia supporting the Barbour's map turtle drain through Florida where its possession is legal.

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 turtle species 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). Georgia's unique species that are highly sought by the pet trade include the Alabama map turtle, Barbour's map turtle, and Ouachita map turtle. Yet, the map turtles may be taken recreationally, which is problematic for law enforcement (see below) and they are subject to unlimited commercial harvest.

In 1994, population declines were reported in box turtles (*Terrapene carolina*) in 16 states, ranging from Massachusetts to Florida and Oklahoma to Wisconsin, and over-collection for export was a serious factor in much of the box turtle decline (Lieberman 1994). Documentation of box turtle declines - including records showing that since 1995, 29,896 box turtles had been collected for the pet trade and shipped from Louisiana - resulted in unanimous passage of Act 81 by the Louisiana Senate and House of Representatives in 1999. The Act prohibits commercial harvest of the state's native box turtle populations. The Eastern box turtle (*Terrapene carolina*) occurs in Georgia waters.

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. The problem is magnified when law enforcement encounters traffickers in the field and can not distinguish red eared sliders, or cooters from Barbour's map turtles. Outside of Georgia, turtle dealers with commercial websites often sell wild caught hatchling Barbour's map turtles and adults and purport they are captive bred in online solicitations. Yet, there is no way to distinguish these and wildlife agencies generally take the word of the dealer if questioned.

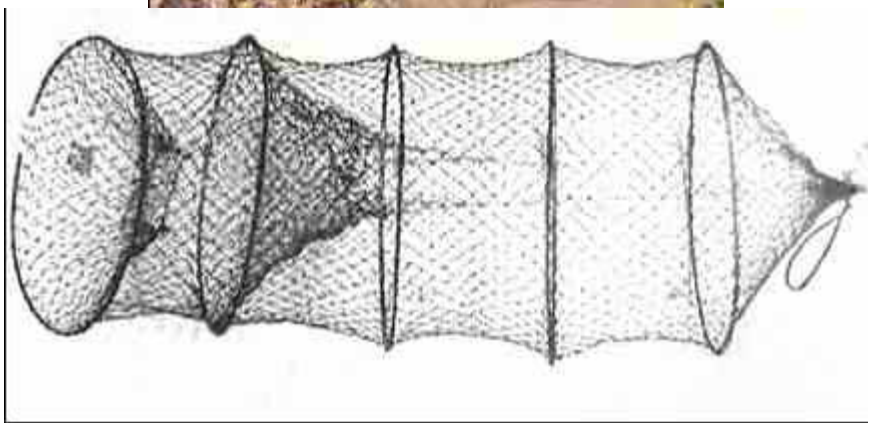
5. The Georgia Department of Natural Resources allows the use of an unlimited number of hoopnets and box traps to collect turtles which take and drown protected species including migratory birds and the federally threatened American alligator

The GDNR allows turtle collectors to deploy an unlimited number of box traps and hoopnets to harvest freshwater turtles (Georgia Code § 27-4-91(a)-(c)(2007)). Field biologists have observed that turtle traps are effective in capturing most adult turtles in a stream segment, and that a single harvest can 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 successfully 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, and 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 (nutria, beaver, muskrat, otter, 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). Hoopnets

commonly incidentally capture and drown adult and juvenile American alligators (*Alligator mississippiensis*), a species protected under the federal Endangered Species Act, 16 U.S.C. § 1531 (2007). Even when set above the water surface, captured alligators thrash inside the hoopnet attempting to escape and cause the net to sink (C. Rudolph pers. comm. 2007; R. Nelson pers. comm. 2007; S. Platt 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 GDNR to enact effective state wildlife laws that discourage interstate commerce of illegally collected wildlife. Although the GDNR does not require commercial collectors to report the quantity and species of turtles harvested, even if it did, the agency lacks the administrative and law enforcement manpower to legitimately ensure buyers would not misrepresent harvest numbers and species of turtles captured. In Georgia, wildlife traffickers are capable of illegally harvesting turtles in neighboring states where turtle harvest is prohibited (Tennessee, Alabama and Mississippi) and claiming these originated in Georgia, where unlimited harvest is legal. Alabama, Mississippi, Florida and Texas (through recent legislation) ban harvest of map turtles, some of which meet the parameters for federal listing under the Endangered Species Act (i.e. *Graptemys caglei*, *G. versa, G nigronida*, *G. pulchra*, and *G. nigronida*). Many of these turtles are sold online for more than $150 per hatchling. *See Exhibit E.*

Georgia law expressly prohibits harvest of alligator snapping turtle (*Macrochelys temmickii*) and Barbour's map turtle (*Graptemys barbouri*); however these species overlap in range with non-protected turtles in Georgia and incidentally enter baited traps set by commercial collectors. Collectors often can not distinguish alligator snappers from common snappers and coin both species simply as "loggerheads" and sell them as common snappers. The Barbour's map turtle is strikingly similar in appearance to red eared sliders and river cooters which are legal to harvest in Georgia. Collectors who can distinguish these species and realize their high value for the 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 in Louisiana may legally sell adult alligator snapping turtles for more than $2,000 each. Barbour's map turtles sell for more than $75 each. In 1992, 33 adults and subadult alligator snapping turtles illegally taken from the Appalachicola river basin in Florida where they are protected from commercial harvest were intercepted and confiscated during transport to Louisiana (Moler 1996).

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