

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA



Sixteenth meeting of the Conference of the Parties
Bangkok (Thailand), 3-14 March 2013

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of *Emydoidea blandingii* in Appendix II, in accordance with Article II, paragraph 2(a) of the Convention and satisfying Criteria A and B in Annex 2a of Resolution Conf. 9.24 (Rev. CoP15).

B. Proponent

United States of America*

C. Supporting statement

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Testudines

1.3 Family: Emydidae

1.4 Species: *Emydoidea blandingii* HOLBROOK 1838

1.5 Scientific synonyms: *Cistudo blandingii* HOLBROOK 1838: 35
Testudo flava LACÉPÈDE 1788 (*nomen oblitum*)
Testudo meleagris SHAW 1793 (*nomen oblitum*)
Emys blandingii STRAUCH 1862
Emydoidea blandingii GRAY 1870: 19
Emys blandingii BOULENGER 1889
Emys blandingii BLANCHARD 1923
Emys blandingii CONANT 1938
Emys twentei TAYLOR 1943:250
Emydoidea blandingii LOVERIDGE & WILLIAMS 1957
Emydoidea blandingii CONANT & COLLINS 1991: 73
Emydoidea blandingii CROTHER 2000
Emys blandingii FELDMAN & PARHAM 2002
Emydoidea blandingii OBST 2003: 16
Emys blandingii SPINKS & SHAFFER 2009
Emydoidea blandingii ERNST & LOVICH 2009

1.6 Common names: English: Blanding's Turtle
French: Tortue mouchetée



HOLBROOK, 1838

* The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

Spanish: Tortuga Blandingii

1.7 Code numbers: N/A

2. Overview

Emydoidea blandingii (Blanding's Turtle) is a member of the North American family of freshwater turtles (Emydidae). It is found in Canada and the northern United States of America (USA), and requires both wetland and upland habitat to complete its life cycle. This species is subject to international and national commercial trade, primarily as pets.

Based on the best available information, the populations in Canada are estimated to include approximately 10,350 adults (COSEWIC 2011; Parks Canada 2012). There is no total population estimate for *Emydoidea blandingii* occurring in the United States; local populations are small, consisting of a few dozen to a hundred turtles (van Dijk & Rhodin 2011). This species requires a large home range and its habitat has undergone fragmentation and decline rangewide. Although harvest is regulated on a local level throughout much of its range and captive breeding is reported, the species is taken from the wild for international and national commercial trade, primarily destined for Asia. Available data show that U.S. exports of this species have exhibited a cyclical and increasing pattern of international trade from around 50/year in 1999 to about 200/year by 2004. Exports are nearing 200/year in the late 2000s again by the late 2000s (LEMIS 2011). Turtle life history traits of delayed sexual maturity, extended adult longevity, and high juvenile mortality – all exhibited by *Emydoidea blandingii* – make the species particularly vulnerable to the removal of even a few adults in a given population. These animals are highly mobile and their extensive movements between wetlands increase their susceptibility to the impacts of road mortality and facilitate collectors' ability to harvest the animals for trade. Given their life history traits, even slight increases in the rate of loss of juveniles and adults will significantly impact a population.

Emydoidea blandingii was recently upgraded to Endangered (2011) on the IUCN Red List of Threatened Species because it has experienced a population reduction of more than 50 percent over three generations, due to habitat decline, overexploitation, increased predation, and the associated mortality caused by these threats. The population trend is decreasing; it is estimated that 30–50% of suitable habitat and the populations present have been lost in recent decades, while many remaining populations have declined. At a 2010 Conservation and Trade Management of Freshwater and Terrestrial Turtles, held in St. Louis, Missouri, U.S. State resource managers and turtle specialists recommended including this species in CITES Appendix II. Regulating international trade within CITES Appendix II would ensure that exports are not detrimental to the species' survival in the wild and would assist the range countries in stemming illegal trade.

The Blanding's turtle qualifies for listing in Appendix II by satisfying both Criteria A and B of Annex 2a of Resolution Conf. 9.24 (Rev. CoP15). Given the suite of threats impacting this species, including international trade, it can be inferred that regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future (Criterion A, Annex 2a), Resolution Conf. 9.24 (Rev. CoP15). Additionally, available information indicates that the regulation of trade in the species is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences (Criterion B, Annex 2a, Resolution Conf. 9.24 (Rev. CoP15)).

3. Species characteristics

3.1 Distribution

Canada (Nova Scotia, Ontario, Québec); **United States** (Illinois, Indiana, Iowa, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New York, Ohio, Pennsylvania, South Dakota, Wisconsin) (van Dijk & Rhodin 2011).

3.2 Habitat

Emydoidea blandingii uses a variety of permanent and temporary wetland habitats, with a preference for shallow, clear, standing water with abundant aquatic vegetation, but can be found in almost any water body in their area (Ernst & Lovich, 2009; van Dijk & Rhodin 2011). This species also requires upland habitat to complete its life cycle, relying on open sandy areas covered in grasses or shrubs for its nesting habitat (Minnesota Department of Natural Resources (MDNR) 2008). Due to their high

mobility, *Emydoidea blandingii* occupy large areas. Hartwig (2004) compiled home range size data from studies across several U.S. states and two Canadian provinces, which reported home range size either by area or by length. Where reported as area, the home range size varied from 0.1 to 292 hectare (ha); where reported as length, home range size varied from 90 to 5183 meters. *Emydoidea blandingii* have occasionally been found nesting on residential property and often traverse inhabited or disturbed areas, including farm fields, gardens, under power lines, and the edges of dirt roads (MDNR 2008).

3.3 Biological characteristics

These animals are highly mobile and move extensively between wetlands and their nesting grounds, which are often well away from water. Females tend to return to traditional nesting grounds year after year, and the entire population is highly mobile in the spring and fall, as they move from overwintering sites (MDNR 2008). These turtles are diurnal and may be more active in the mornings and evenings (Congdon et al. 2008). The species feeds mainly on crayfish, insects, and other small animal prey, but also scavenges and consumes plant material and seeds (Kofron & Schreiber 1985; van Dijk & Rhodin 2011). Animals leave strong scent trails, increasing their vulnerability to predation by animals such as raccoons and foxes.

The estimated age of female sexual maturity ranges from 14 to 20 years of age. Nesting occurs in the summer months. Females produce one or two clutches of 8–15 eggs (range 3–22, substantial geographic variation) in a reproductive year, but only half the females in a population may reproduce in a given year (Congdon et al. 2008; Ernst and Lovich 2009; van Dijk & Rhodin 2011). An individual female might only breed once every 2-3 years and females may remain reproductive for 40 to 50 years (Maine Department of Inland Fisheries and Wildlife 1991). Incubation takes about 82–96 (range 65–128) days, with substantial geographic variation. Hatchlings measure about 33 mm (Congdon et al. 2008; Ernst and Lovich 2009; van Dijk & Rhodin 2011). Longevity can be at least 77 years in the wild, and generation times vary between 36 and 47 years (Congdon et al. 2008; Ernst and Lovich 2009).

3.4 Morphological characteristics

Emydoidea blandingii have an elongated smooth black carapace with irregular shaped tan/yellow spots on the scutes. The plastron has a movable hinge between the pectoral and abdominal scutes. The throat and neck are bright yellow. Males reach 28 cm carapace length (CL), females 22 cm CL. Maturity is reached at about 12 years (20 cm CL) in males, and at 14–20 years (16–19 cm CL) in females (Congdon et al. 2008, Ernst and Lovich 2009).

3.5 Role of the species in its ecosystem

Emydoidea blandingii play an important role in maintaining functional freshwater ecosystems, including rivers, ponds, streams, and wetlands. As omnivores, they help manage vegetation levels and control insect and snail populations, thus helping to maintain the cleanliness of these freshwater systems. Because of their high mobility, these animals play a particularly important role in dispersal of aquatic plants seeds between water bodies (Blandford Nature Center n.d.). Turtle eggs, hatchlings, and juveniles serve as prey to coyotes, raccoons, foxes, and skunks. Hatchlings and juveniles are consumed by fish, frogs, snakes, and wading birds (Berrigan n.d.; Michigan State University 2004).

4. Status and trends

4.1 Habitat trends

There are no estimates of the amount of suitable *Emydoidea blandingii* habitat still remaining in Canada or the United States. In a review across the species' range, Hartwig (2004) reported that *Emydoidea blandingii* habitat is often intersected by roads and rural human habitations. Suitable habitat for this species is becoming increasingly fragmented. See also Population Trends.

4.2 Population size

Canada - A crude estimate of the Canadian portion of the Great Lakes/St. Lawrence population is about 10,000 adults (COSEWIC. 2011). The Nova Scotia population is estimated at 350 adults (Parks Canada 2012).

United States - Populations of *Emydoidea blandingii* are often small and localized, with populations of a few dozen or hundred turtles, and densities ranging from 0.02 animals per hectare (ha) in Maine, to 28 per ha in Wisconsin, 55 per ha in Missouri, and up to 57 per ha in Nebraska. In Pennsylvania populations may total a few dozen individuals (D. Mifsud, pers. comm. 2009 in van Dijk & Rhodin 2011). The largest known population, in Nebraska, is estimated at over 130,000 animals, excluding hatchlings and yearlings (Lang 2004). A summary of the estimated number of historical populations or number of known extant populations by U.S. State was compiled by the Midwest Partners in Amphibian and Reptile Conservation (MWPARC 2010).

4.3 Population structure

Sex ratios range from 1:1 to strongly female biased. Wisconsin has reported populations where the percentage of immature turtles represents 16% (0.19:1 juveniles to adults). There are no recognized subspecies of *Emydoidea blandingii* but genetic structuring appears to be significant among populations. A microsatellite study of populations across the range shows that the Appalachian Mountains and the Hudson River are major barriers to gene flow. As a result it is believed that populations separated by the Appalachian Mountains and the disjunct Nova Scotia populations be considered distinct significant evolutionary units (Ernst and Lovich 2009).

4.4 Population trends

The population trend is decreasing across this species' range.

Canada - Collection for the pet trade is perceived as a growing threat. In Nova Scotia, the threat of collection of the species is thought to be of medium concern relative to the other threats facing the species such as habitat loss. This is because the threat from collection is localized and ongoing, but of unknown frequency and based on some uncertain data. The severity of this impact could be high--there is thought to be a correlation between collection of individuals and population viability for the Nova Scotia population (B. van Havre, Environment Canada, pers. comm. 2012).

United States - Participants at the Mid-West U.S. Turtle Red Listing Workshop estimated that 30–50% of suitable habitat and the populations they contained have been lost in recent decades, while many remaining populations have reduced in size (van Dijk & Rhodin 2011). Population decline has been noted in Illinois, Iowa, Michigan Nebraska, Ohio, and Wisconsin and several U.S. States reported that at least portions of extant populations may not be viable (MWPARC 2010). Populations in Illinois and Ohio are considered to be in decline, possibly associated with increased predation by raccoons (D. Mifsud, pers. comm. 2009 in van Dijk & Rhodin 2011).

4.5 Geographic trends

This species is one of the most northern ranged turtle species in North America. An assessment of the anticipated effects of ongoing climate change on *Emydoidea blandingii* habitat and survival has not been performed, but this is expected to complicate conservation success, and could potentially allow for turtles to expand their range northward into the Lake Superior drainage (MWPARC 2010).

5. Threats

Emydoidea blandingii is impacted by habitat fragmentation and habitat destruction caused by road building and land conversion for human use across its U.S. and Canadian range. Habitat fragmentation reduces the quality of individual patch sizes available to the species and isolates populations. More importantly, proximity to human habitation exposes these turtles to higher road mortality and facilitates access to the turtles by collectors. This species' propensity for movement over a wide area, being active during the day, and its proximity to human habitation exposes it to higher risk of encountering humans or other predators. The New Hampshire Wildlife Action Plan (NHWAP 2005) noted that in addition to targeted collection for trade, people may move a "found" individual to a distant wetland or may also adopt them as pets. Adult nesting females are often easily captured from their nesting sites and so are more vulnerable to collection (Berrigan n.d.). Mortality and collection are barriers to gene flow (Hartwig 2004), which could jeopardize the species' long-term survival.

On a local scale, they also suffer from habitat degradation, where human land use surrounding wetlands leads to effluents polluting the waters. *Emydoidea blandingii* are preferentially found in clean water systems and it is not clear whether or to what extent they can tolerate certain types of pollution (Congdon

et al. 2008; Hartwig 2004). In addition to natural vulnerability to predators, *Emydoidea blandingii* may experience increased predation of eggs, young and possibly adults from subsidized predators (i.e., unnaturally large populations of predators near human population centers). Little quantitative data on the severity of these factors is available (van Dijk & Rhodin 2011), but see Hartwig (2004). *Emydoidea blandingii* are also impacted from indirect collection for trapping activities directed at other species. *Emydoidea blandingii* is the second most common turtle species recorded as bycatch due to commercial trapping of snapping turtles in baited traps. Once captured, a ready market exists to sell *Emydoidea blandingii*, which is an incentive not to release the turtles back to the wild (Harding, pers comm. Aug 2009, in van Dijk & Rhodin 2011).

6. Utilization and trade

6.1 National utilization

The IUCN/SSC Tortoise and Freshwater Turtle Specialist Group identified the elimination of commercial collecting as an immediate conservation need for this species (Congdon *et al.* 2008). The October 2012 international hobbyist magazine “Reptiles” features *Emydoidea blandingii* as one of the most “engaging and interesting” turtles for collectors to keep (Love 2012).

6.2 Legal trade

Canada – Canada does not collect species-specific export data, but legal and regulatory conservation requirements generally prohibit the commercial export of this species. Due to prohibitions under Canada’s endangered species legislation - which does not distinguish between specimens of captive born, bred in captivity or wild origin - the export of *Emydoidea blandingii* would only occur for purposes related to conservation (van Havre, pers. comm. 2012).

United States - U.S. trade data were obtained from the U.S. Fish and Wildlife Service Law Enforcement Management Information System (LEMIS) for the period from 1999 to 2010 (see Table 1 and Figure 1; LEMIS 2011). These data are compiled from U.S. wildlife declaration forms required for import or export of any fish and wildlife.

Table 1. U.S. Exports of *Emydoidea blandingii*, 1999-2010

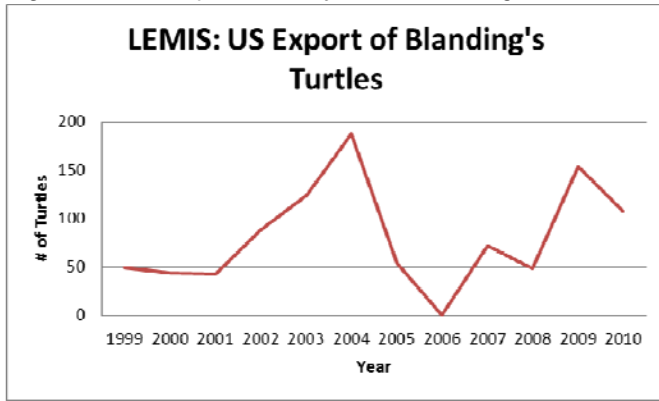
Year	# Individuals	# Shipments
1999	50	10
2000	44	10
2001	43	9
2002	89	5
2003	124	18
2004	188	19
2005	54	8
2006	1	1
2007	72	9
2008	49	7
2009	154	19
2010	108	13
Total	976	128

Source: U.S. Fish and Wildlife Service (LEMIS 2011)

All of the exports in Table 1 and Figure 1 were reported as commercial trade (LEMIS 2011). The data show that U.S. exports of this species increased from around 50 specimens per year in 1999 to about 200 per year by 2004. Though exports dropped to 1999 levels in the mid-2000s, export numbers have begun increasing in recent years, again approaching 200 specimens per year. Figure 1 illustrates the apparent cyclical nature of exports, peaking and rebounding about every five years. Overall, there appears to be an increasing trend in trade. In another analysis of LEMIS data by Franke and Telecky (2001), between 1989 and 1997, total exports equaled 329 *Emydoidea*

blandingii, equating to 37 specimens per year for that 9-year period. Reed and Gibbons (2002) reported that 284 individuals were exported from the United States during 1996-2000, averaging 71 individuals per year over a 5-year period. The total exports for the 12-year period in Table 1 were 976 specimens (LEMIS 2011), which averages to 81 specimens per year. Thus, there appears to be an increasing trend in the annual number of U.S. exports.

Figure 1. U.S. Exports of *Emydoidea blandingii*, 1999-2010



Source: U.S. Fish and Wildlife Service (LEMIS 2011)

Overall, only 5 percent of the exports in Table 1 were reported as wild, while a large number (93 percent) were reported as captive-bred or farmed (LEMIS 2011). However, because these species are not CITES-listed, it is not possible to determine whether the animals are bred according to Resolution Conf. 10.16 on *Specimens of animal species bred in captivity*, or whether and what level of wild material is being used as parental stock or are being collected from the wild and reared in captivity. This reportedly high level of captive breeding is also an abrupt shift from earlier analyses. Reed and Gibbons (2002) reported that, of the 284 individuals exported from the United States during 1996-2000, 64.4 percent were wild caught, almost 17 percent were some form of captive born or bred, and nearly 20 percent were unknown or undeclared.

6.3 Parts and derivatives in trade

This species is not known to be traded for parts and derivatives; the predominant form of trade is as live pets.

6.4 Illegal trade

Canada – Canada Border Services Agency (CBSA) and enforcement officials continue to encounter smuggling attempts of turtles from the United States and Asia. In Ontario, there have been several convictions for the collection, transport, sale, and illegal aquaculture of freshwater turtle species, including *Emydoidea blandingii*. This leads Environment Canada to believe that there is an established demand for this species in the pet trade, as the species brings a relatively high price on the Canadian market (see Table 2). Their market value is considerably higher than other turtles because of their ornate markings as well as their rarity and difficulty to acquire legally (van Havre, pers. comm. 2012).

Table 2. Value on the illegal Canadian market for *Emydoidea blandingii*

Species	Description	\$USD
Blanding's Turtle	Juveniles	150
	Large females	250
	Breeding pair	1,600

Source: Environment Canada, Wildlife Enforcement Directorate, Intelligence Division, summary compiled 2012.

In Ontario, evidence suggests that this species is also harvested for the food industry and traditional medicinal uses. One case in Ontario involved the illegal harvest of *Emydoidea blandingii*, among other turtle species, for human consumption. During an interview with enforcement staff, one

individual involved stated that he was a practitioner of traditional medicine and the turtle was believed to bring long life when possessed and consumed (van Havre, pers. comm. 2012).

- In 2008, an Ontario man was arrested for unlawful possession of turtles (including 26 *Emydoidea blandingii*) under Schedule I of the *Species at Risk Act*. He was fined \$10,000.00 and given a 3-year probation (www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=A3E69C1E-A384-43FF-AD52-0FEEAEA05B92).

United States – In 2010, “Operation Shellshock,” conducted by the New York State Department of Environmental Conservation-Division of Law Enforcement, charged 30 individuals and companies with felonies and misdemeanors relating to the commercialization of wildlife (including *Emydoidea blandingii*) under state provincial and federal laws by New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, Pennsylvania Fish and Boat Commission, Environment Canada, and the Ontario Ministry of Natural Resources. Fine and forfeitures totaled US\$100,000.00 (www.fws.gov/international/DMA_DSA/CITES/pdf/abstracts.pdf).

- In 2005, a commercial reptile dealer in Ohio was sentenced to one year and one day confinement and ordered to pay a \$3,000 fine and a \$300 special assessment after pleading guilty to illegally buying, selling and transporting 53 *Emydoidea blandingii* and other wildlife protected by Federal and state laws. U.S. District Court Judge Algenon L. Marbley also ordered this individual to pay US\$7,000 in restitution to Michigan's Fish and Game Protection Fund. (www.ssnakess.com/forums/general-discussion/65359-donald-b-hamper-ohio-reptile-dealer-pleads-guilty-federal-court.html).

6.5 Actual or potential trade impacts

Removal of turtles from the wild equates to mortality because the individual is no longer able to contribute to the gene pool. *Emydoidea blandingii* life history traits of delayed sexual maturity, adult longevity, and high juvenile mortality make it particularly vulnerable to collection. Given its population dynamics, even slight increases in the rate of loss of juveniles or reproducing adults from a population can have a significant impact (Congdon et al. 2008). Removal of adults from the population decreases the number of sexually mature individuals available for reproduction and may reduce reproductive success of remaining adults; removal of females may result in disequilibrium of sex ratios and jeopardize the ability to maintain a stable population (Congdon et al. 2008; Michigan State University 2004). Collection pressure for trade, whether targeted or as bycatch, magnify the impact of other co-occurring, cumulative, and expanding threats to this species' survival in the wild (i.e., increased predation and increased habitat fragmentation).

7. Legal instruments

7.1 National

Canada – As of 2005, *Emydoidea blandingii* is listed as Endangered (Nova Scotia) and Threatened (Great Lakes/St. Lawrence) under Schedule 1 of Canada's Species at Risk Act (SARA). Protection under SARA makes it an offence to kill, harm, harass, capture or take the species, to destroy the residence of one or more individuals, and to possess, collect, buy, sell or trade these turtles on Federal lands. Permits may be issued under SARA for activities beneficial to the conservation of the species or related to incidental catch. (COSEWIC, 2011). *Emydoidea blandingii* is listed as Threatened under the Ontario Endangered Species Act, which prohibits the killing, harming, harassing, capturing, taking, collecting, possessing, transporting, buying, selling, leasing or trading of members of this species and prohibits the damage or destruction of its habitat. This species is listed as a specially protected reptile under the Fish and Wildlife Conservation Act of 1997; a listing that provides similar protections to individual turtles but not their habitat. Known localities of turtles are not publicly released due to the threat of poaching. In Quebec, *Emydoidea blandingii* is protected from disturbance, destruction or alteration by the *Loi sur la Conservation et la Mise en Valeur de la Faune*, under which it is prohibited to hunt, capture, keep in captivity or sell individuals without a permit. Additionally, the species is listed as threatened (« *menacee* ») under the *Loi sur les especes menacees ou vulnerables*. *Emydoidea blandingii* is listed as Endangered by the Nova Scotia Endangered Species Act (van Havre, pers. comm. 2012). A conservation action programs has been developed in Nova Scotia (van Dijk & Rhodin 2011).

United States - *Emydoidea blandingii* are protected to varying degrees in all States (Nanjappa and Conrad 2011; see Annex 1). The species occurs in a number of protected areas across its range and conservation action programs have been developed in several U.S. States (van Dijk & Rhodin 2011).

7.2 International

None

8. Species management

8.1 Management measures

Commercial harvest is not allowed in some U.S. States within this species range, and is allowed but restricted in others (Nanjappa and Conrad 2011; Annex 1). New Hampshire manages *Emydoidea blandingii* under its Wildlife Action Plan (NHWAP 2005). For a list of Management activities by State, see Annex 2. Congdon et al. (2008) noted the following immediate conservation needset al:

1. Methods to reduce road mortality (e.g., fencing and road passages);
2. Elimination of commercial collecting;
3. Protection of large resident wetland areas and smaller ephemeral wetlands;
4. Protection and management of adjacent terrestrial areas used for nesting and as corridors for movements among wetlands;
5. Research on risks associated with the timing and duration of terrestrial movements of both sexes; and
6. Where necessary, removal of nest predators.

8.2 Population monitoring

Maine: Extensive surveys conducted in the 1990s demonstrated that fewer than 1000 individuals likely occur in southern Maine and they are found in a highly fragmented landscape. Rare turtle populations documented in York, South Berwick, Biddeford, Wells, Alfred, and Lyman have the greatest conservation potential, while smaller, peripheral populations isolated by physical barriers (e.g., Interstate 95) may be in greater jeopardy of local extinction.

See: www.maine.gov/ifw/wildlife/species/endangered_species/blandings_turtle/index.htm

New Hampshire: Biologists are currently evaluating the top ranked *Emydoidea blandingii* sites that were identified in a Regional Status Assessment for the species in 2007. Additionally, several *Emydoidea blandingii* reports are annually submitted by volunteers through the Reptile and Amphibian Monitoring Program (RAARP). After a verification process the reports are incorporated into the New Hampshire Natural Heritage Bureau's Rare Species Database to map population locations (Clifford NHFG).

See: extension.unh.edu/CommDev/Docs/Blanding.pdf

Massachusetts: A statewide monitoring program is needed to track long-term population trends in *Emydoidea blandingii* (NHESP, 2007).

See: www.mass.gov/dfwele/dfw/nhosp/species_info/nhfacts/emydoidea_blandingii.pdf

The Midwest Partners in Amphibian and Reptile Conservation summarizes monitoring efforts in other U.S. States (MWPARC 2010).

8.3 Control measures

8.3.1 International

None.

8.3.2 Domestic

The species is protected at the state and provincial level throughout its range (see Section 7.1 Legal Instruments, National).

8.4 Captive breeding and artificial propagation

There is a head starting program to reduce egg predation by raccoons at the Shiawassee National Wildlife Refuge. The hatchlings from ninety-three eggs obtained from wild nests are being reared by the Detroit Zoo and Herpetological Resource and Management (Jackson MI). The turtles will be raised until they are about 10 centimeters in size and are scheduled for release in the spring of 2013 (Connect 2012).

8.5 Habitat conservation

Canada - Future survival of *Emydoidea blandingii* populations mainly depends on the condition and availability of wetland habitats and also on the ability to safely move between wetlands and uplands. As with many other species that migrate to suitable nesting locations, fragmentation caused by roads results in the death of many turtles every year (Harding, 1997). A recovery plan for Nova Scotia populations, "Recovery Strategy for the Blanding's turtle (*Emydoidea blandingii*), Nova Scotia population, in Canada," was published in 2012. Critical habitat is identified for *Emydoidea blandingii* at all five known sites. At the present time, recovery is considered feasible. The long term objectives are to achieve a self-sustaining population of *Emydoidea blandingii* in Nova Scotia by maintaining and/or increasing the three existing populations and two known concentrations over the current range, with a less than 5% risk of extinction in each recognized population when projected over 10 generations (400 years), and to maintain sufficient gene flow to prevent any single population from becoming genetically isolated (Parks Canada 2012).

United States – The New Hampshire Wildlife Action Plan measured habitat fragmentation within the state, determining the percentage of land that is already under State protection, and establishing protocols for habitat management, conservation, and rehabilitation to benefit the survival of this species (NHWAOP 2005). The largest population of this species in the United States is located on the U.S. Fish and Wildlife Service Valentine National Wildlife Refuge and conservation of this species has been incorporated into the Refuge's Comprehensive Conservation Plan (Valentine National Wildlife Refuge 1999). There are a number of other U.S. Fish and Wildlife Service National Wildlife Refuges and other protected areas within the range of this species. However, the proportion of the species' habitat that has been protected is not quantified.

8.6 Safeguards

No information located.

9. Information on similar species

Emydoidea blandingii is a member of the Emydidae family. Similar species in this family that have overlapping ranges include the bog turtle (*Glyptemys muhlenbergii*) and the spotted turtle (*Clemmys guttata*) both of which are smaller than *Emydoidea blandingii* as adults. *Emydoidea blandingii* also have distinctive yellow marking on their chins.

10. Consultations

The U.S. Fish and Wildlife Service consulted with all States having populations of Blanding's turtles through the Association of Fish and Wildlife Agencies and also with Canada for this species. Canada provided an in depth response including relevant data in June 2012 via Basile van Havre Director, Population Conservation management Division, Environment Canada.

11. Additional remarks

This species was recommended for inclusion in Appendix II by State resource managers and turtle specialists at the 2010 *Conservation and Trade Management of freshwater and Terrestrial Turtles in the United States* held in St. Louis, Missouri (convened and hosted by the U.S. Fish and Wildlife Service, International Wildlife Trade Program).

IUCN information: This species was recently upgraded from Lower Risk/Not Threatened to Endangered A2cde+4ce (ver 3.1, 2011) on the IUCN Red List of Threatened Species given the extensive slow declines of most of its populations from habitat loss and direct removal, accidental mortality and increased predation, and its very long generation time of 36–47 years and slow rate of potential recovery.

12. References

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State Regulation of Blanding's Turtle (*Emydoidea blandingii*)

State	State Protected Status	Trade	Regulatory Citation
Illinois	Endangered; SGCN	No Commercial Collection/Trade	IL CS 56 1-20
Indiana	Endangered; SGCN	No Commercial Collection/Trade	IAC 312 9-5
Iowa	Threatened; SGCN	No Commercial or Personal Collection; Scientific Collection with Permit	IA AC 571 77
Maine	Endangered; SGCN	No Commercial Collection/Trade; Scientific Collection with Permit	MRSA 12 10001-12159
Massachusetts	Threatened; SGCN	No Commercial Collection/Trade	CMR 9.01-10.0
Michigan	Protected; SGCN	No Commercial Collection; Restricted Personal (excluding eggs) & Scientific Collection allowed	MI AR 299.1024-1025
Minnesota	Threatened; SGCN	No Commercial Collection/Trade	MNS 97C.605
Missouri	Endangered; SGCN	No Commercial Collection/Trade	252.020 RSMo; 3CSR 10-4.110(1)
Nebraska	Protected; SGCN	No Commercial or Personal Collection; Scientific Collection with Permit	Chapter 2: Fisheries Regulations Section 002.05, 002.08, 006.03P, 009; Chapter 4: Wildlife Regulations Section 10
New Hampshire	Endangered; SGCN	No Commercial Collection/Trade	NHTOCXVIII 212A
New York	Threatened; SGCN	No Commercial Collection/Trade	ECL 11-0103, 0512; 6 NY CRR Part 3 and 175
Ohio	Threatened	No Commercial Collection or possession of wild caught specimens	ORC 1531.01
Pennsylvania	Protected; SGCN	Collection prohibited; Possession with permit allowed	30 PA CS 102 58 PA CS 79
South Dakota	SGCN	No Commercial Collection; Personal Collection Allowed	Under Review
Wisconsin	Threatened; SGCN	No Commercial Collection/Trade	WI AC NR 10.02, NR 19.001(14) & NR19.25

Source: Nanjappa and Conrad (2011)

** SGCN – State designation of Species of Greatest Conservation Need