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

Transfer *Chelodina mccordi* from Appendix II to Appendix I in accordance with Article II paragraph 1 of the Convention and satisfying Criterion A i), ii), and v); B) iii), and iv; and C) i) of Annex 1 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:	Chelidae	
1.4	Species:	*Chelodina mccordi* Rhodin 1994	
1.5	Scientific synonyms:	*Chelodina novaeguineae* Boulenger 1888 *Chelodina timorensis* McCord, Joseph-Ouni, and Hagen 2007 *Chelodina mccordi timorlestensis* Kuchling, Rhodin, Ibarronndo, and Trainor 2007	
1.6	Common names:	English:	Roti Island snake-necked turtle; Western Roti snake-necked turtle; Eastern Roti snake-necked turtle; Timor snake-necked turtle; McCord's snake-neck turtle; McCord's box turtle
		French:	Chélodine de McCord; Tortue à cou de serpent de Roti
		Spanish:	none known
1.7	Code numbers:	None.	

2. Overview

At the 13th meeting of the Conference of the Parties to CITES (CoP13; Bangkok, 2004), *Chelodina mccordi* was listed in Appendix II. *Chelodina mccordi* is a small to moderate-sized freshwater turtle of the

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side-necked aquatic and semi-aquatic turtle family Chelidae. The species is extremely range restricted, and known from a limited number of shallow wetlands in Roti Island, Indonesia and in Timor-Leste. Since it was described in 1994, the Roti island populations of *C. mccordi* have significantly diminished due to collection of specimens for the international pet trade, which is considered the primary threat to the species. In 2000, the IUCN Red List of Threatened Species changed the ranking of *C. mccordi* from Vulnerable to Critically Endangered. The species is included in the list of the *Top 25 Endangered Tortoises and Freshwater Turtles at Extremely High Risk of Extinction*. The known status of *C. mccordi* has not changed and there are no indications of improvements or decrease in threats. In addition, there are no population estimates available for any of the populations and illegal export of the species apparently still occurs. Unless this species is properly managed and protected from the illegal trade, *C. mccordi* faces likely extinction in the wild.

Chelodina mccordi has an extremely restricted distribution, wild population and subpopulations are small, possibly extinct, and are characterized by a high vulnerability to over-collection. This species is clearly affected by trade according to definition i) of this term in Resolution Conf. 9.24 (Rev. CoP15), Annex 5. The species range is meets the Criterion A, as the wild population is small and is characterized by an observed inferred or projected decline in the number of individuals; with each subpopulation being very small; and demonstrating a high vulnerability to intrinsic and extrinsic factors. The species also meets Criterion B because the wild population has a restricted area of distribution and is characterized by a high vulnerability to intrinsic and extrinsic factors and an observed, inferred, or projected decrease in the number of subpopulations and the number of individuals. *Chelodina mccordi* meets Criterion C, as a marked decline in the population size in the wild that has been observed and is ongoing.

3. Species characteristics

3.1 Distribution

Chelodina mccordi occurs on Roti Island (also known as Rote Island), Indonesia, and on East Timor, the Democratic Republic of Timor-Leste (Turtle Conservation Coalition 2011).

The Roti Island population consists of two separate disjunct populations, one occurs in the west and one occurs in the east. The larger western population is distributed in the relatively mesic southwestern and mid-central inland plateau portion of the main part of the island and extends sparsely to the southwest to include slightly lower elevation areas. The smaller eastern population is disjunct and occurs on the relatively isolated northeastern Lake Enduy and along the southeastern edge of the marine bay that partially separates the Tapuafu peninsula form the rest of Roti Island (Rhodin *et al*. 2008). The two populations combined occur over an area of about 70 to 200 square kilometers (sq. km.) in size on Roti Island (1200 sq.km in size).

The Timor-Leste population's primary area of distribution is the highland plain around Lake Iralalaro, which has a surface area between 10 and 15 sq. km. The plain of the Lake has an area of about 400 sq. km. (Kuchling *et al*. 2007).

3.2 Habitat

Chelodina mccordi inhabits permanent and semi-permanent shallow eutrophic inland lakes and swamps on the inland highland plateau areas and adjacent rice paddies and irrigation ditches. Within Roti Island, the taxon is not known to occur in the ephemeral seasonal streams draining towards the coast, neither in coastal areas or brackish estuarine or mangrove habitat (Rhodin *et al*. 1998).

According to the local people of East Timor, the population can be found in many of the seasonal wetlands as well as creeks running into the lake and the river (Kuchling *et al*. 2007).

3.3 Biological characteristics

According to the local people, the activity of *C. mccordi* seems to be entirely nocturnal, except during the rainy wet season, when turtles are sometimes found on land. Although it is not known when nesting occurs for this species, it is said that eggs are produced between February and September, with hatchlings emerging near the end of November in conjunction with the onset of the wet season. Reportedly, a large female found in Roti Island laid a clutch of 9 eggs around February or March. Captive breeding reproduction has documented clutch size averages of 9.9 to 12.2 eggs (Maran and Coutard 2003 and Symanski 2004 as cited in Rhodin *et al*. 2008).

The dietary preference of *C. mccordi* is apparently generalized carnivore or piscivore, with little dependence on hard-shelled bivalves and snails (Rhodin *et al*. 2008).

3.4 Morphological characteristics

Chelodina mccordi is a moderate sized side-necked freshwater turtle. The carapace is moderately rugose and broadly oval with variable color. Most specimens have a distinctive light grayish-brown carapace, while some specimens may have a darker chestnut brown color. The plastron is relatively broad and light yellowish-white. Many specimens have thin irregular light brown areas along the plastral sutures and others have rust-colored staining. The head has small irregular scales and soft parts are light colored to moderate gray dorsally, whitish ventrally. The head width is moderate, slightly less than the relatively broad-headed *Chelodina novaeguineae*. Body size is sexually dimorphic, with females larger than males and reaching a carapace length of up to about 24 cm. (Rhodin *et al*. 2008).

The turtle taxonomy community, at large, recognizes three subspecies (Rhodin *et al*. 2010). These are *Chelodina mccordi mccordi* Rhodin 1994, *Chelodina mccordi roteensis* McCord, Joseph-Ouni, and Hagen 2007, *Chelodina mccordi timorensis* McCord, Joseph-Ouni, and Hagen 2007. However, the CITES Standard Reference for the species does not recognize any subspecies (Fritz and Havaš 2007).

3.5 Role of the species in its ecosystem

No information is available on the role of the species on the ecosystem.

4. Status and trends

4.1 Habitat trends

Based on more recent survey data, the size of the habitat on Roti Island is probably larger than what was originally reported (200 sq. km. vs. 70 sq. km.). However, much of the area has been depleted of turtles and the total area of occupancy with relatively intact populations and good habitat might be as small as 20 sq. km. (Rhodin *et al*. 2008). Remaining habitat is being reduced by agricultural development and conversion of swamps and marshlands into rice fields (Turtle Conservation Coalition 2011). The population in Timor-Leste is restricted to a small area of suitable habitat (Kuchling *et al*. 2007) and may be susceptible to the same habitat trends for *C. mccordi* in Roti Island.

4.2 Population size

Although no specific data is available on the total population size, all of the available information suggests that the Roti Island populations are now commercially extinct and the remaining population is extremely depleted by continual collection of turtles (Rhodin *et al*. 2008). In 2007, it was reported that *C. mccordi* did not seem to be particularly rare within its limited habitat in Timor-Leste (Kuchling *et al*.). However, no population or status assessments are available for the species.

4.3 Population structure

No data is available on sex ratio, age structure, growth rate, or other population parameters.

4.4 Population trends

Since 2000, *C. mccordi* has been ranked as Critically Endangered (A1d, B1+2e) by the IUCN Red List of Threatened Species. It has also been reported to be nearly extinct in the wild on Roti Island (Iskandar 2000; Samedi and Iskandar 2000; Shepherd and Bonggi 2005). The species was collected so intensively, that 5 years after it was described it was considered to be near-extinct. By 2000, it was considered commercially extinct by Indonesian traders who could no longer obtain turtles from the wild (Samedi and Iskandar 2000; Rhodin and Genorupa 2000). Reportedly, one researcher spent many months on Roti Island searching for *C. mccordi,* but never encountered it in the wild. The only turtles observed were turtles that had been collected by traders and locals (Rhodin *et al*. 2008). Rhodin *et al*. reported (2008) that in areas where turtles could be easily collected, the species was considered extremely rare or extirpated. The small population in Timor-Leste may still be in good shape but the species faces an uncertain future (Turtle Conservation Coalition 2011).

4.5 Geographic trends

Rhodin *et al*. (2008) reported that on Roti Island there appeared to be about only four persistent, though severely depleted populations of *C. mccordi*. Three populations are located on the main part of the island and another population is located in the northeastern section of the island. McCord *et al*. (2007a) reported that in the seasonal lakes of the Central Plateau region in Roti Island, *C. mccordi* has experienced near extinction. Elsewhere on the island there appear to be only a few relict populations with uncertain viability (Rhodin *et al*. 2008). In Timor-Leste, the current exploitation of the taxon for food and local trade may have already reduced some populations close to towns such as Los Palos (Kuchling *et al*. 2007).

5. Threats

The greatest threat to *C. mccordi* is intensive harvest for the international pet trade market. The collection of turtles for the pet trade has driven populations from original natural density to near-extinction in a decade (Rhodin 1996; Samedi and Iskandar 2000; Shepherd and Ibarrondo 2005; Turtle Conservation Coalition 2011). The species was listed as Vulnerable under criteria D2 in the *1996 IUCN Red List of Threatened Species*; it was upgraded to Critically Endangered under criteria A1d, B1+2e in the *2000 IUCN Red List of Threatened Species*. The VU D2 criterion reflects an area of occupancy typically less than 100 sq. km. The CR A1d criterion indicates an observed, estimated, inferred or suspected population reduction of at least 80% over the last three generations. The B1+2e criterion indicates a species of limited extent of occurrence or area of occupancy with few and/or fragmented populations and continuing decline of the number of mature animals (CoP15 Prop. 23).

On Roti Island, other threats include habitat modification, predation by pigs, and use of chemical pesticides. Habitat conversion of swamps and marshlands to agricultural fields has gradually eliminated much of the species' habitat. Although the species may use habitats that have been modified, the turtles are an easier target for collecters (Rhodin *et al*. 2008).

Habitat threats have also been identified in Timor-Leste, where locals burn agricultural areas to facilitate planting of crops (McCord *et al*. 2007b). Increase use of agricultural chemicals and pesticides may also affect the species (Shepherd and Ibarrondo 2005). The loss of wetlands through deforestation, erosion, and decreasing rainfall due to climate change has also eliminated habitat (Samedi and Iskandar 2000; Shepherd and Ibarrondo 2005; Rhodin *et al*. 2008).

McCord *et al*. (2007) identified both local consumption and agricultural practices as threats to the Timor-Leste population of *C. mccordi*. However, Rhodin *et al*. (2008) reported that human consumption was not a threat to the species.

6. Utilization and trade

6.1 National utilization

The species was not used locally or nationally until it was collected for the pet trade since the1980s (Rhodin 1996, Rhodin in IUCN/SSC TFTSG & ATTWG 2000). It is now considered commercially extinct, yet exploitation continues and occasional specimens still appear in pet traders' holdings in Jakarta and elsewhere (TRAFFIC Southeast Asia, *in litt.* to Chelonian Research Foundation).

Prior to its description in 1994 as a different species from *C. novaeguinea*, a significant number of specimens of *C. mccordi* were being collected and exported. When *C. mccordi* was finally described as a new species, demand for it from the international pet trade rapidly increased and more reptile exporters in Jakarta became interested in the species (Shepherd and Ibarrondo 2005). According to the reptile exporters in Jakarta, the majority of the demand for specimens of *C. mccordi* came from hobbyists in western European countries, the United States of America, and Japan, which continues today. By the late 1990s, the retail price for the species in the western pet trade had risen to USD 2000.00 per animal (Rhodin and Genorupa 2000). Shepherd and Ibarrondo (2005) suggest that all specimens of *C. mccordi* exported from Indonesia since 1980 were not in accordance with the national laws. Although the species is now considered commercially extinct, exploitation continues, with *C. mccordi* being smuggled out of Indonesia, largely from Jakarta (Shepherd and Ibarrondo 2005).

6.2 Legal trade

In 1986, about 15-20 wild-caught adult animals were offered for sale by a reptile trader in the Netherlands at a retail price of NLG 400 (about USD 175) per animal (P.P. van Dijk, *in litt.*to USFWS, 25 Sept 2012). The animals were sold as '*C. novaeguinea* from Timor since *C. mccordi* had not yet been described. Indonesia set an annual harvest quota of 450 specimens for 1997 through 1999; 150 specimens for 2000; and 135 specimens for 2001. Actual declared exports amounted to 56, 76, 63, 44, and 20 animals, respectively, for a total of 259 individuals exported from Indonesia (Samedi *et al*. 2002, Shepherd and Ibarrondo 2005). The demand and price for specimens of *C. mccordi* continued to increase even though specimens were already very difficult to find because of the collection pressure on the species.

According to the CITES Trade Database, *C. mccordi* were traded from 2005 to 2011; a total of 144 specimens were imported and 197 specimens were exported. The majority of import sources were from captive bred and captive born animals for commercial purposes. Other import purposes described were for scientific and zoo purposes. Trade data for Indonesia indicates that animals were exported in 2008, 2009, and 2011.

6.3 Parts and derivatives in trade

This species is not known to be traded for parts and derivatives. It is predominantly the whole animal for the pet trade, with the remaining specimens traded as scientific exchanges.

6.4 Illegal trade

In Indonesia, no legal trade in *C. mccordi* has been allowed since 2001 (Shepherd and Ibarrondo 2005). Prior to it being described as a separate species in 1994, *C. mccordi* was exported illegally as *C. novaeguineae*, which has been protected since 1980 (Shepherd and Ibarrondo 2005). In 1986 one of the main reptile breeders was sending approximately 100 turtles per week to Jakarta. Accordingly no permits to collect or transport specimens of *C. mccordi* have ever been issued by the Indonesia Government, including specimens exported under the quota system from 1997 to 2001 (Shepherd and Ibarrondo 2005).

In 2002, the Indonesian Management Authority issued a zero export quotas for *C. mccordi* due to concerns that the species was on the brink of extinction. In 2004 and 2005, apparently only two persons on Roti Island were actively trading *C. mccordi*. According to these two persons, in 2003 they captured and sent 27 individuals of *C. mccordi* and 21 in 2004 to Jakarta (Shepherd and Ibarrondo 2005). In 2005, *C. mccordi* could still be found by dealers on Roti Island (Shepherd and Ibarrondo 2005). Collecting efforts have continued on Roti Island, where only a handful of animals are now found per year, and illegal exports has apparently continued to occur (Shepherd and Ibarrondo 2005, Rhodin *et al*. 2008).

6.5 Actual or potential trade impacts

As detailed in previous sections, collection of animals for the international pet trade has brought the species to the brink of extinction in less than a decade since it was described. The population of Timer-Leste, discovered only in recent years, is at high risk of following the exploitation trajectory experienced by the Roti populations. Stronger protection of the species is important to saving the species from extinction.

7. Legal instruments

7.1 National

The protection status of *C. mccordi* under Indonesian national legislation is not clear. *C. mccordi* is not specifically listed as a protected species. However, it was previously included as an isolated population of *C. novaeguineae* (de Rooij, 1915; Wermiuth and Mertens 1961 [1996]; Rhodin 1994), which is protected under Government Regulation Act No. 7 and 8 of 1999, Law No.5/1990 concerning the Conservation of Biological Natural Resources and their Ecosystems, and Decrees 327/1978 and 716/1980 of the Ministry of Agriculture (Noerdjito and Maryanto 2001). Thus, the population of *C. mccordi* was protected as *C. novaeguineae* before it was identified as a distinct species.

Indonesia has legally restricted the trade of specimens of *C. mccordi* since 1997, but enforcement has been substantially non-existent (Shepherd and Ibarrondo 2005; Rhodin *et al*. 2008).

Species that are neither listed under national protection status nor in CITES Appendices are managed as a fishery resource, according to Act no. 12 of 1985. Management of a fishery resource is delegated to the Fishery Service, which is under the local (district) government. The Fisheries Department manages the species through establishing capture and export permits, in some cases without consideration of the quotas set by DGNPC. Expertise in conservation is limited at the local level, leading to instances of over-exploitation (Samedi and Iskandar 2000).

7.2 International

Chelodina mccordi has been listed under Appendix II of CITES since 2004.

8. Species management

8.1 Management measures

In February 2011, the Conservation of Asian Tortoises and Freshwater Turtles Workshop recommended taxon specific recommendations for Critically Endangered Species (Horne *et al*. 2012). It was discussed that most of Asia's turtle species lack adequate studies for effective conservation actions to be properly planned and managed, especially for such species that are heavily collected. For *C. mccordi*, the workshop participants identified that there is a strong need for monitoring and research in the basic biology of the species. Recommendations also include the establishment of protected areas within the species' range, habitat conservation projects within agriculturally impacted areas and intact suitable habitat, stricter legal protection and enforcement, embargo of all international export, and establishment of assurance colonies for captive breeding. The recommendations are also supported by other authors and reports (Shepherd and Ibarrondo 2005; Rhodin *et al*. 2008; Turtle Conservation Coalition 2011). Horne *et al*. (2012) further recommended that *C. mccordi* is a good candidate for a pilot program aimed at establishing semi-wild to wild colonies within their former ranges from captive produced stocks.

8.2 Population monitoring

The most recent information on the species is discussed by several authors (Kutchking *et al*. 2007; McCord *et al*. 2007a; McCord *et al*. 2008; Rhodin *et al*. 2008) and presented mostly in Section 4 (Status and Trends) of this proposal. There is a common urgent need for population monitoring of all Asian freshwater turtles, including *C. mccordi*.

8.3 Control measures

8.3.1 International

Since its listing in Appendix II, specimens of *C. mccordi* for export need an export permit issued by the Indonesian Management Authority (Ministry of Forestry of the Directorate General of Forest Protection and Nature Conservation). Nevertheless, no permits to harvest or transport *C. mccordi* have ever been issued (Shepherd and Ibarrondo 2005), as noted in Section 6.4 above. In addition, exporters must belong to the Indonesian Reptile and Amphibian Trade Association in order for specimens to be legally permitted for export.

8.3.2 Domestic

In Indonesia, the Decree of the Ministry of Forestry No. 447/Kpts-11/2003 sets an administrative directive requiring any harvest or capture and distribution of wild plants and animals to be done under a license and additional permits are required to transport legally captures wildlife, whether the species is protected by law or not (Shepherd and Ibarrondo 2005).

There appear to be no control measures in place other than those pertaining to general wildlife exploitation and trade regulation.

8.4 Captive breeding and artificial propagation

Chelodina mccordi is successfully bred in captivity and assurance colonies have been established (Rodhin *et al* 2008; Horne *et al*. 2012). Most of the captive stocks are in the United States and Europe, as well as Association of Zoos and Aquariums (AZA) and European AZA have managed breeding programs and studbooks (Horne *et al*. 2012).

In 2004, the Turtle Survival Alliance reported 47 captive bred specimens of *C. mccordi* had been imported to the United States from Europe, and that the animals were from a wild-caught founder stock (Shepherd and Ibarrondo 2005). It has been estimated that there is probably more than 600 individuals of *C. mccordi* are in captivity, including an unknown number by private owners (Shepherd and Ibarrondo 2005).

According to Horne *et al*. (2012), there are approximately 150 animals remaining animals in captivity, and that it is extremely important to design and implement captive breeding programs that will exchange animals in order to maintain genetic diversity.

8.5 Habitat conservation

Roti Island currently has no major protected areas where *C. mccordi* occurs (Rhodin *et al*. 2008). Some areas have been designated as Protection Forests, which have some level of protection from commercial logging and development, but these areas are where *C. mccordi* does not occur or harbor only a few small turtle populations (Rhodin *et al*. 2008). The establishment of suitable protection areas for this species is evidently needed in Roti Island and within the restricted small area of suitable habitat in Timor-Leste.

8.6 Safeguards

N/A

9. Information on similar species

Before its description the turtles from Roti Island were considered as *Chelodina novaeguineae*. However, *C. mccordi* differs from *C. novaeguineae* by having a wider carapace, a shallower and less robust head, and the neck skin tubercles on *C. novaeguineae* are more prominent and firmer. *Chelodina mccordi* differs from *C .pritchardi* and *C. longicollis* in having a much narrower first marginal scute, a proportionally wider head and a narrower plastron. The head of *C. reirnanni* is larger and the neck is shorter, and *C. steindachneri* differs by a low and nearly circular carapace and a wider first marginal scute. It can differentiated by the *Chelodina* species of the subgeneric group "Macrochelodina" of *Chelodina*, viz. *C. expansa*, *C. rugosa*, *C. siebenrocki*, *C. parkeri*, *C. oblonga* and allies, which are characterized by narrow plastra and broad, flattened heads (CITES Wiki Identification Manual; Rhodin 1994; Cann1998).

10. Consultations

The United States of America consulted with each of the range countries. Although we received information on other freshwater turtles from Indonesia's Ministry of Forestry, we did not receive any information specific to *C. mccordi*.

11. Additional remarks

Chelodina mccordi has been recommended for transfer from Appendix II to Appendix I by

The 2011 Conservation of Asian Tortoises and Freshwater Turtles Workshop recommended that *C. mccordi* be transfer from Appendix II to Appendix I (Horne *et al*. 2012). The species is listed as Critically Endangered by IUCN (A1d, B1+2e) because of collection overexploitation within its very limited distribution.

Since the listing of *Chelodina mccordi* in 2004, two subspecies have been described. With regard to the population of *Chelodina mccordi timorensis* of Timor-Leste, the Parties adopted at CoP15 the recommendation by the Animals Committee Nomenclature Specialist that for CITES purposes the taxon is part of *Chelodina mccordi* (CoP15 Doc. 35(rev.3) Standard Nomenclature). The scope of this proposal therefore specifically includes the *Chelodina* population of Timor, as *Chelodina mccordi timorensis*.

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