

Transfer of Roti Island Snake-necked Turtle *Chelodina mccordi* from Appendix II to Appendix I

Proponent: United States of America

Summary: The Roti Island Snake-necked Turtle *Chelodina mccordi* is a small to moderate-sized, side-necked freshwater turtle in the family Chelidae, known from Roti Island, Indonesia and the Democratic Republic of Timor-Leste. It is almost entirely nocturnal and on Roti Island inhabits permanent and semi-permanent shallow eutrophic inland lakes and swamps as well as adjacent rice paddies and irrigation ditches on the inland highland plateau areas. According to the local people of Timor-Leste, it may also be found in seasonal wetlands. Average clutch size in captivity is 10–12 eggs.

The species has a very restricted range. The estimated extent of suitable habitat on Roti Island is 200 km², however, much of the area has evidently been depleted of turtles and the total area of occupancy with relatively intact sub-populations and good habitat might be as small as 20 km². The primary area of distribution on Timor-Leste is the 400 km² highland plain around Lake Iralalaro, which itself has a surface area between 10 and 15 km².

Historically, this species was not used or traded; it was introduced into international trade in the 1980s, since then it has reportedly suffered a dramatic population decline on Roti Island ascribed very largely to collection for the international pet trade. When first entering trade, Roti Island Snake-necked Turtles were considered to belong to *Chelodina novaeguinae* (a more widespread species occurring in Australia and New Guinea), but were described as a distinct species in 1994. Targeted collection reportedly then increased to meet international demand. It is now considered to be effectively commercially extinct in Indonesia. The sub-population in Timor-Leste was not discovered until 2003 and was reported in 2008 as not apparently having been subject to collection pressure up to then. The species is also reportedly affected by habitat degradation, predominantly as a result of agricultural conversion and use of chemicals in agriculture, although it is known to use modified habitats. It is currently classified as Critically Endangered by IUCN. This assessment was made in 2000, before the discovery of the Timor-Leste population.

The species was included in Appendix II in 2004. It is not protected under Indonesian legislation. However, in 2002 the Indonesian Management Authority issued a zero export quota, owing to concerns that the species was on the brink of extinction in Indonesia. Records from the CITES trade database indicate that in the period 2008–2011 some 100–200 specimens of the species were reported exported from Indonesia, declared as raised in captivity. It is noted that as recently as 2005 there were no registered captive-breeders of this species in Indonesia and it is thought likely that a high proportion, if not all, of the specimens in question may have been wild-caught. There are indications that wild specimens are preferred by some hobbyists as some captive stock of the species has resulted from interbreeding between this species and *Chelodina novaeguinae*. If the specimens were indeed wild-caught, it is not known what their origin was, but given the apparent virtual extinction of the species in Roti, it is at least possible that they originated in Timor-Leste.

Timor-Leste is not currently a Party to CITES and has not informed the CITES Secretariat of a competent authority able to issue comparable documentation. The country is in the process of drafting a Biodiversity Decree Law that is likely to give full protection to *Chelodina mccordi* as an internationally recognised threatened species.

Analysis: *Chelodina mccordi* has a restricted range in two States and is known to be in high demand internationally amongst hobbyists. The population in one range State (Indonesia) is believed to have suffered a severe decline as a result of harvest for international trade. Given the extreme depletion of this population, it is believed likely that collection pressure may shift to the other population if it has not already done so. It may be expected to drive a similar decline there, so that it is possible that the species meets the criteria for inclusion in Appendix I set out in Annex 1 to *Resolution Conf. 9.24 (Rev. CoP15)* on the basis of a marked observed and projected decline in the wild population.

Supporting Statement (SS)	Additional information
<u>Taxonomy</u>	
	<p>The Timor-Leste population of <i>Chelodina mccordi</i> was described as a new species, <i>Chelodina timorensis</i>, by McCord et al. (2007), but Kuchling et al. (2007) argued that this taxon had only subspecific status, <i>Chelodina mccordi timorensis</i>. However, Georges and Thomson (2010) did not recognise any subspecies of <i>Chelodina mccordi</i>.</p>
<u>Range</u>	
<p>Democratic Republic of Timor-Leste (hereafter Timor-Leste); Indonesia (Roti Island).</p>	
<u>IUCN Global Category</u>	
<p>Critically Endangered (Assessed 2000).</p>	<p><i>Critically Endangered A1d, B1+2e ver 2.3. Assessment needs updating.</i></p>

Biological criteria for inclusion in Appendix I

A) Small wild population

(i) Population or habitat decline; (ii) small sub-populations; (iii) concentrated geographically during one or more life-history phases; (iv) large population fluctuations; (v) high vulnerability

There are no data available on population size; however, the species has small sub-populations within a very restricted area of habitat. The two Roti Island sub-populations are now considered commercially extinct. The species is rarely seen, however, there is ongoing trade where individuals are found. *C. mccordi* appears to be less rare within Timor-Leste although it is still restricted by suitable habitat.

Captive breeding reproduction has documented clutch size averages of 9.9 to 12.2 eggs.

B Restricted area of distribution

(i) Fragmented or localised population; (ii) large fluctuations in distribution or sub-populations; (iii) high vulnerability; (iv) decrease in distribution, population, area or quality of habitat, or recruitment)

C. mccordi has a very small and fragmented area of distribution. On Roti Island the area of distribution is approximately 200 km² although the area of suitable habitat actually supporting intact sub-populations may be as little as 20 km². The subpopulation in Timor-Leste is known from Lake Iralalero plain, which has an approximate surface area of 10-15 km² and a plateau area of 400 km². Habitat in both areas is being reduced largely through agricultural practices and modification of the swamps and wetlands.

Although the IUCN category of Critically Endangered given in 2000 was based on decline (see below) the species was also considered to qualify under criterion B1+2e based on an extent of occurrence estimated to be less than 100 km² or area of occupancy estimated to be less than 10 km² and estimates that it was severely fragmented or known to exist at only a single location and that there was a continuing decline in the number of mature individuals. However, this assessment was based on a calculated area of occupancy of 70 km² (Rhodin, 1996) which has since been updated to approximately 200 km² (Rhodin et al., 2008), and before the sub-

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<p>There is continuing habitat decline including habitat modification, use of agricultural chemicals and pesticides and predation by pigs. Although <i>C. mccordi</i> will inhabit modified landscapes, this makes them more vulnerable to collectors. The loss of wetlands through erosion and decreasing precipitation due to climate change is also reducing potential habitat for this species.</p>	<p><i>population on Timor-Leste was known.</i></p> <p><i>A survey was conducted on Roti Island to investigate the remaining habitat for C. mccordi. Of 105 locations investigated, 35 were deemed to be suitable habitat for this species. Interviews with locals concluded that it has been locally extirpated at 26 of these locations and at nine locations the species was reported to be occasionally seen. No individuals were found throughout the duration of this survey (Enderwin et al., 2005).</i></p>
<p>C) Decline in number of wild individuals (i) Ongoing or historic decline; (ii) inferred or projected decline due to decreasing area or quality of habitat, levels of exploitation, high vulnerability, or decreasing recruitment</p>	
<p>Since its description in 1994 this species has been heavily targeted for the international pet trade leading to dramatic declines in population particularly on Roti Island. Indeed it is now considered commercially extinct by Indonesian traders, and is believed to be extremely rare or locally extirpated from some sites. This level of decline has been reflected in the IUCN Red List categorisation of Critically Endangered, where it was estimated that there has been a population decline of 80% or more within the last three generations. Harvesting continues on Roti Island, although only a handful of individuals are found each year.</p> <p>The sub-population in Timor-Leste was only discovered in recent years and therefore has not been as heavily affected. There is trade in the area, and the possibility of harvesting for local consumption. There is a high risk that the levels of exploitation will follow a similar trajectory to those from Roti Island.</p> <p>Both areas are affected by habitat loss due to agricultural conversion and chemicals.</p>	<p><i>The IUCN category of Critically Endangered given in 2000 was based on an observed, estimated, inferred or suspected reduction of at least 80% over the last three generations based on actual or potential levels of exploitation (A1d). This assessment was made prior to the discovery of the Timor-Leste population.</i></p>
<p>Trade criteria for inclusion in Appendix I</p>	
<p><u>The species is or may be affected by trade</u></p>	
<p>The greatest threat to this species is over-harvesting for the pet trade, which is responsible for the near-extinction of the Roti Island sub-populations.</p> <p>This species has been heavily exploited for the pet trade. It was not used locally or nationally until collection for the pet trade started in the 1980s. Initially it was traded as part of <i>C. novaeguineae</i>; however, recognition as a distinct species in 1994 increased targeted trading, with the majority of demand coming from hobbyists in western Europe, USA and Japan. The level of trade is responsible for the rapid decline and near-extinction of wild populations of <i>C. mccordi</i>.</p> <p>By the late 1990s, the retail price for the species in the western pet trade had risen</p>	<p><i>The CITES trade database lists 127 live imports and 196 live exports, 2005–2011. All of these animals were recorded as being for commercial purposes, except for eight recorded as being for zoos, and none were recorded as of wild origin. Animals were reportedly exported from Indonesia in 2008, 2009 and 2010, all recorded as source code F—animals born in captivity that do not fulfil the definition of 'bred in captivity' in Resolution Conf. 10.16 (UNEP-WCMC, 2012).</i></p> <p><i>Nearly all specimens were imported by Japan for commercial purposes, apart from eight specimens imported into the Netherlands for zoo purposes. Exporters of captive-bred specimens (C) were Germany, Switzerland and the USA.</i></p>

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<p>to USD2000 per animal.</p> <p>It was suggested that all specimens of <i>C. mccordi</i> exported from Indonesia since 1980 were not in accordance with the national laws. Although the species is now considered commercially extinct, exploitation continues, with <i>C. mccordi</i> being smuggled out of Indonesia, largely from Jakarta.</p>	<p><i>Claims of captive breeding of this species in Indonesia are questioned. It is considered extremely unlikely that F2 offspring have been produced, if breeding exists at all, as there were no breeders registered with Indonesia's authorities to breed this species as recently as 2005 (Shepherd and Ibarrondo, 2005). It is suspected that wild-caught specimens are entering international trade after being laundered through captive breeding operations in Indonesia.</i></p> <p><i>According to one dealer in the reptile trade, prior to being described as a separate species, C. mccordi was sometimes unknowingly interbred with C. novaeguineae, as the two species were thought to be one. This dealer went on to say that collectors outside Indonesia, therefore, now prefer wild-caught specimens to ensure they have pure animals (Shepherd and Ibarrondo, 2005).</i></p>

Other information

Threats

Habitat degradation is also a threat both on Roti Island and in Timor-Leste. This is largely as a result of agricultural conversion and the use of agricultural chemicals and pesticides, as well as the burning of land in Timor-Leste. Although this species can inhabit modified land such as irrigation ditches, they are more vulnerable to being collected in these habitats. Reduced precipitation due to climate change is also listed as a threat in Timor-Leste.

Conservation, management and legislation

It has been listed in Appendix II of CITES since 2004.

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. It is unclear what national legislation is in place in Indonesia for *C. mccordi* since its split from *C. novaeguineae*, however, in 2002, the Indonesian Management Authority issued a zero export quota for *C. mccordi* due to concerns that the species was on the brink of extinction. Records from the CITES trade database indicate animals have been imported from Indonesia since then.

In 2011 the Conservation of Asian Tortoises and Freshwater Turtles Workshop discussed recommendations for *C. mccordi* as a Critically Endangered species. These included the need for monitoring and research in the basic biology of the species, as well as the establishment of protected areas within the species's range, habitat conservation projects within agriculturally impacted areas and intact suitable habitat, stricter legal protection and enforcement, embargo of all international export,

Timor-Leste is in the process of drafting a Biodiversity Decree Law which is likely to give full protection to C. mccordi as an internationally recognised threatened species (República Democrática de Timor-Leste, 2012). Timor-Leste is not currently a Party to CITES and has not informed the CITES Secretariat of a competent authority able to issue comparable documentation.

The zero quota for Indonesia has not been posted on the CITES website.

Although the species is not formally protected by law in Indonesia, there is no quota for harvest/trade: harvest, transport and trade (local or international) are not permitted (Shepherd in litt., 2012).

Supporting Statement (SS)	Additional information
<p>and establishment of assurance colonies for captive breeding. The recommendations are also supported by other authors and reports. There has been an additional recommendation to pilot a reintroduction programme from captive stocks within the species's former range. Currently no suitable habitat within its range falls within a protected area.</p>	
<u>Similar species</u>	
<p>Before its description the turtles from Roti Island were considered as <i>Chelodina novaeguineae</i>. However, <i>C. mccordi</i> differs from <i>C. novaeguineae</i> by having a wider carapace, a shallower and less robust head, and the neck skin tubercles on <i>C. novaeguineae</i> are more prominent and firmer.</p>	<p><i>It is believed that C. mccordi is smuggled out of Indonesia under the name of, or mixed together with, non-protected species, as enforcement agencies are not able to differentiate between species, owing to a lack of training (Shepherd and Ibarrondo, 2005).</i></p> <p><i>The US Fish and Wildlife Service's trade database (LEMIS) for 2000–2012 does not show a large trade in C. novaeguineae—since 2004 only eight animals have been recorded in trade, all live and for personal collections. This does not support the notion that international trade of C. mccordi is being hidden in trade of C. novaeguineae.</i></p>
<u>Captive breeding/Artificial propagation</u>	
<p>This species is successfully bred in captivity and assurance colonies have been established. The majority of import sources listed for this species on the CITES Trade Database 2005-2011 were from captive-bred animals for commercial purposes.</p> <p>Most captive stocks are in the USA and Europe and AZA and EAZA have managed breeding programmes and studbooks. There are an estimated 150 animals currently in captivity and it is recommended that breeding programmes exchange animals in order to maintain genetic diversity.</p>	<p><i>The population in captivity in Europe is currently 235 animals (Fontijne, 2012). The 150 animals mentioned by Horne et al. (2012) may refer to the numbers in captivity in the USA.</i></p>
<u>Other comments</u>	
	<p><i>C. mccordi is listed 12th in order of extinction risk for tortoise and freshwater turtle species globally (Turtle Conservation Coalition, 2011).</i></p>

Reviewers: G. Kuchling, W. Fontijne, C. Shepherd.

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