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 of the Thai population of *Crocodylus siamensis* from Appendix I to Appendix II with a zero quota for wild specimens, on the basis of Article II, paragraph 2 (a), and in accordance with the preventative measures of the appropriate management controls included in Annex 4 (2b) of the Resolution Conf. 9.24 (Rev. CoP 15).

B. Proponent

Thailand

C. Supporting statement

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Crocodylia

1.3 Family: Crocodylidae

1.4 Genus and species: *Crocodylus siamensis* (Schneider, 1801)

1.5 Scientific synonyms: *Crocodilus galeatus* (Cuvier, 1807)  
* Crocodilus galeatus* (Duméril & Bibron, 1836)  
* Crocodilus planirostris* (Graves, 1819)

1.6 Common names: English: Siamese Crocodile  
French: Crocodile du Siam  
Spanish: Cocodrilo del Siam  
Thai: Jara Kae Numchued

1.7 Code numbers: L-306.002.001.011

2. Overview

The Siamese crocodile has been widely distributed in the low altitude freshwater wetlands of central and eastern Thailand. They appeared to be reduced to non-breeding remnants in marginal habitats. The principal threats were habitat destruction, illegal hunting, and killing as vermin. Historically, *C. siamensis* occurred widely across mainland Southeast Asia (with an apparently localized distribution in Borneo). They

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have been considered an endangered species based on the small number of specimens remaining in the wild. In IUCN Red List (1971), *C. siamensis* is categorized as CR: Critically Endangered, Criteria A.1.a. and c. indicates decline in numbers and areas more than 80% decline in three generations (Ross, 1998).

http://iucncsg.org/ph1/modules/Publications/action_plan1998/a-plan60.htm Over the past decade new information on the ecology of the species has been documented, although *C. siamensis* remains one of the least known crocodilians. Commercial hunting for the skin trade in the mid- and late-twentieth century respectively, are considered to be the principal causes for its decline. As a result of commercial harvest in the past for skin after WWII, the wild population was depleted significantly. Current threats include habitat loss, incidental capture with fishing gear, and the inherent vulnerability of remnant populations due to their small size.

Historically, sightings of *C. siamensis* in the wild were common. In Mae Yom, Mae Ping, Chao Phraya, and Pasak Rivers, it was fairly common, but it did not exist on the upper reaches of the Mekong River (Smith, 1919). Currently, *C. siamensis* wild population is reported to persist in 5 protected areas with total number of approximately 200 individuals in 5,652 km². During the first preliminary survey, Ratanakorn *et al.* (1994) confirmed the presence of at least a population of wild *C. siamensis* in Pang Sida National Park and another in Khao Ang Rue Nai Wildlife Sanctuary. Many sightings of *C. siamensis* in the wild were later recorded at Pang Sida National Park (Boonyakhajohn, 1999; Temsiripong, 2003). Platt *et al.* (2002) and Limlikhitaksorn (2010) reported a recent photograph of a crocodile and a nest in Kaeng Krachan National Park.

Although wild *C. siamensis* population is small, the species is well established in captivity, with over 700,000 individuals in farms in Thailand, Cambodia, and Vietnam (Temsiripong *et al.*, 2004; Jelden *et al.*, 2005, 2008). In Thailand, a captive-breeding program has been established since 1937 (Webb and Jenkins, 1991). Since then, there has been 23 CITES registered commercial breeding farms in Thailand. For those farms to contribute to the conservation of the species, Crocodile Management Association of Thailand (CMAT) has been initiated to be a linkage between trade and conservation.

A re-introduction program was initiated by the Royal Forest Department and CMAT. Captive-bred crocodiles were released in Pang Sida National Park in 2005 and 2006 (Temsiripong, 2001, 2007). Some crocodiles were detected during subsequent monitoring (Temsiripong, 2007) and further releases in Bueng Boraphet and Kaeng Krachan National Park were in a plan, but severe flooding in Thailand in 2011 has temporarily hindered the implementation of some areas.

Nevertheless, Thai crocodile farmers and their pure-bred crocodiles are the only hope for crocodile conservation in Thailand. In order to meet biological and trade criteria, systematic enforcement controls and compliance with the requirements of the Convention is currently implemented as a normal practice. According to the precautionary measures listed in Resolution Conf. 9.24 (Rev. CoP15), Annex 4 (2b), the species can be transferred to Appendix II in compliance with Article II paragraph 2 (a), because of Thai government and CMAT commitments to re-establish viable wild population.

Even though the species is likely to be in demand for international trade, its management is such that implementation of the Convention is secured and appropriate enforcement controls are in place (see section 8). Based on paragraph 2 c) of the same Annex, the species can be transferred to Appendix II because an integral part of the amendment proposal is an export quota (in this case, a zero quota for trade in wild specimens), thus ensure that wild populations of the Siamese crocodile do not become endangered by international trade.

3. Species characteristics

3.1 Distribution

*Crocodylus siamensis* historically occurred over much of mainland Southeast Asia as well as parts of Indonesia. Extant populations are in Cambodia, Indonesia, Lao PDR, Thailand and Vietnam. In Thailand, *Crocodylus siamensis* appears to have been widely distributed in low altitude freshwater wetlands of central and eastern Thailand (Smith, 1919; Platt *et al.*, 2002). Extant populations are in a number of scattered localities in central and western Thailand (Kreetiyutanont, 1993; Ratanakorn *et al.*, 1994; Platt *et al.*, 2002; Temsiripong, 2003). Confirmed sites include Bueng Boraphet, Pang Sida and Kaengkrachan National Parks, Phu Khieo and Khao Ang Rue Nai Wildlife Sanctuaries (Platt *et al.*, 2002; Temsiripong, 2003) (see Map 1).
Bueng Boraphet is the largest freshwater swamp and lake in central Thailand. It covers an area of 224 km² east of Nakorn Sawan province, south of the Nan River close to its confluence with the Ping River. As a result of a recent flood in fall 2011, the wetland was all flooded for at least 8 weeks.

Kaeng Krachan National Park is located in the Tenasserim Mountains along the Thai-Myanmar border in Petchburi and Prachuap Khiri Khan Provinces of southwestern Thailand. Encompassing 2,915 km², Kaeng Krachan is Thailand’s largest national park. The topography is characterized by steep mountain ridges with swift-flowing rivers in restricted valleys.

Pang Sida National Park is located by The Khorat Hills in Sakaew Province, eastern Thailand. With 845 km², the park is dominated by deciduous and evergreen rain forest as well as lowland scrub and open grasslands at the foothills. The Houy Nam Yen Creek historically contained many evidences of *C. siamensis*.

Khao Ang Rue Nai Wildlife Sanctuary in Chachoengsao Province comprises of 108 km² and encompasses hills covered in evergreen and dry deciduous forests, with open grasslands in the lowlands. In most of the sanctuary, there are several watersheds that eventually flow into river systems well outside the sanctuary. Most creeks dry and break up to form series of small pools in dry season.

Phu Khieo Wildlife Sanctuary encompasses an area of 1,560 km² in Chaiyaphum Province, northeastern Thailand. The sanctuary comprises a steep-sided plateau ranging from 540 m at its base to 1,310 m at the highest peak. The plateau is drained by five watersheds: Lam Saphung, Lam Nam Chi, Lam Dok, Huai Sang, and Huai Nam Phrom Creek. The latter is the river reported to have *C. siamensis*. Hill and dry evergreen and dry deciduous forests with open grasslands in lowlands are major types of forest.

3.2 Habitat

Wetland habitats, which historically contained crocodiles, are both tidal and non-tidal. Large tracts of freshwater wetland occur in central and northeastern Thailand, although these have been altered considerably from their natural state and are now used extensively for agriculture and aquaculture except in protected areas. The northernmost parts of Thailand are mountainous and have apparently never contained crocodilians. The southern peninsula of Thailand opens on the west to the Andaman Sea and the east to the Gulf of Thailand which abuts Thailand southern shoreline (Webb and Jenkins, 1991).

The Siamese crocodile occurs in a wide range of freshwater habitats, including slow-moving rivers and streams, lakes, seasonal oxbow lakes, marshes and swamplands (Smith, 1931; Daltry et al., 2003; Bezuijen et al., 2006). The use of burrows excavated into the banks of rivers or lakes has been recorded, with up to five individuals utilizing a single burrow at one time (Simpson et al., 2006b). Generally preferring lowland elevations, the species has been recorded up to 600 m above sea level (Daltry et al., 2003).

3.3 Biological characteristics

*Crocodylus siamensis* is a medium-sized species, with most individuals attaining a total length of less than 3.5 m (Smith, 1919). Wild nests recorded in Cambodia, Lao PDR, and Thailand were mounds located on floating vegetation mats or on the banks of lakes or rivers (Platt et al., 2006; Simpson et al., 2006a; Starr et al., 2010; Bezuijen et al., 2010). Nesting occurs in the late dry season and wet season. Clutch size observed in wild nests ranged from 11-40 eggs (Starr et al., 2010; Limlikhitaksorn, 2010). Captive *C. siamensis* produce clutches of 6-50 eggs (Youngprapakorn et al., 1971; Platt et al., 2011). Hatchlings emerge in the wet season after 70-80 days incubation (Brazaitis and Watanbe, 1983; Platt et al., 2011; Bezuijen et al., 2010). Fidelity to nesting sites has been recorded (Simpson et al., 2006a). Similar to many other crocodilians, *C. siamensis* feeds on a wide variety of prey such as invertebrates, amphibians, reptiles, avians and mammals, including carrion (Daltry et al., 2003; Bezuijen, 2010). They reach maturity at 10-12 years old (Daltry et al., 2003).

3.4 Morphological characteristics

Maximum size reported for the species is between 3,000 and 3,300 mm in total length. Average total length is 2,500-3,000 mm, and 240-290 mm in hatchlings. 1.5 – 2.0 snout ratio with 1 ridge on skull.
The neck region has 4 post-occipital scales and 6 nuchal scales. Dorsal osteoderms are 16 – 17 rows. Ventral scales are arranged in 30 to 34 transverse rows and 14 to 16 longitudinal rows. Tail and belly inclusions are visible as well as ISO. The color of adults is olive-brown on the dorsal area, with large black markings on the tail. The ventral area is pale with a creamy-yellowish tone.

Preliminary information is available on phylogeography and population genetics of the species (Gratten, 2003), seasonal sperm cycles (Kitiyanant et al., 1994). Hybridisation of captive Siamese crocodiles with C. rhombifer and C. porosus has been documented (Chavaninikul et al., 1994; Thang, 1994) and the chromosome number of C. siamensis and hybrids, as well as DNA methods to distinguish them has been identified (Youngprapakorn, 1991; Fitzsimmons et al., 2002).

Srikulnath et al. (2012) discovered a new genome (haplotype2, EF581859) and successfully differentiated C. siamensis from C. porosus and hybrids between both species. The results were consistent with the phylogenetic relationship among the three genomes C. porosus (AJ810453), haplotype1 (DQ353946), and haplotype2 (EF581859). These effective markers could be used specifically for rapid and accurate species identification in population, ecology and, conservation studies especially for the re-introduction programs.

3.5 Role of the species in its ecosystem

Crocodylus siamensis facilitates a number of ecological processes, especially in smaller water bodies, where it regulates populations of fish and other invertebrate species. It is preyed upon by birds and medium-sized mammals at juvenile stages. By breaking vegetation and creating passage in shallow water, it is an engineer in freshwater ecosystem.

4. Status and trends

It is likely that some viable wild populations persist in Thailand and other range states. Surveys since the early 1990s have confirmed many fragmented and scattered population largely within protected habitats (Kreetiyutanont, 1993; Ratanakorn and Leelapatra, 1994; Ratanakorn et al. 1994; Platt et al., 2002; Temsiripong, 2003; Limlikhitaksorn, 2010). Currently, there are about 200 individuals in Thailand.

4.1 Habitat trends

Pang Sida National Park has no humans-interaction in the area and having sufficient suitable habitat for a crocodile population. The National Park, situated in eastern Thailand, was awarded a World Heritage site by UNESCO in 2005. The habitat survey showed suitable habitat for a viable population of around 100 - 200 crocodiles. The inter-specific competition for micro habitat and food sources with monitor lizards may occur with juvenile crocodiles. During wet season, crocodiles may be flushed out of protected areas. This situation created precautionary management as following.

The villagers have committed to help crocodile conservation. Public hearing and education was carried out in early 2004 to be sure that the escaped crocodiles outside the protected area will not be taken. The villagers, who live next to the park border line, used to see and capture juvenile crocodiles swept away with the water in the valley during the wet season. After being educated, they will not be frightened by the crocodiles if being seen again. Instead, they promised to capture and hand in the escaped crocodiles to the rangers. The villagers have seen the increase in number of eco-tourists since the crocodiles were brought back to the areas.

4.2 Population size

All five populations of wild C. siamensis have persisted in a number of individuals. A viable population persisted in Bueng Boraphet Non-hunting Area alone is about 100 individuals. A number of nests have been discovered during annual systematic survey by a researcher team from Department of Fisheries (Wongsongsarn, 2010). C. siamensis population in Phu Khieo Wildlife Sanctuary is also considered viable population due to a number of nests found every year.

The third largest population may contain a number of nesting females, laying eggs every year in Kaeng Krachan National Park. A couple of nests and few adults have been observed every year (Kanwatanakid-Savini et al., 2012, Limlikhitaksorn, 2010; Platt et al., 2002). In Pang Sida National Park, re-introduced population has successfully survived in nature. The small remnant population
existed in Khao Ang Rue Nai Wildlife Sanctuary, which consisted of a population of C. siamensis. In summary, population size of C. siamensis may be about 200 individuals.

4.3 Population structure

Data on the population structure of Thai population seems limited. It is available in one of five populations, Bueng Boraphet Non-hunting Area. 50% of adults, a high proportion of Class I individuals (<1 year) and Class II individuals (2-3 years), representing 50% of population (Wongsongsam, 2010). These data suggest adequate nesting, hatching, and recruitment rates for the species.

Population structure in Kaeng Krachan National Park was concluded to be 100% adult females (Limlikhitaksorn, 2010). Study revealed infertile eggs were collected to hatch in an artificial incubator in 2009, and 2010 suggesting there is strong bias in sex ratio in this remnant population. Re-introduced population in Pang Sida National Park was 100% sub-adult (6-8 years). 1:1 sex ratio was selected at the time of release in 2004 and 2006. Other populations are considered remnant population.

4.4 Population trends

Currently in Thailand, wild C. siamensis have five populations. The viable population persists in Bueng Boraphet Non-hunting Area. Nests have been discovered during annual systematic survey by a researcher team from Department of Fisheries. Phu Khieo Wildlife Sanctuary crocodile population show increase in number every year. The third largest population may contain females that making nests and laying eggs every year.

The smallest remnant population is in Khao Ang Rue Nai Wildlife Sanctuary. It is not possible to perform a statistical linear regression to forecast population in near future. Once the bi-annual survey reveals larger population, and the mark-recapture study is performed, the population trends can be forecast. However, studies show significant increase in number in many habitats that reflected crocodile ability to replenish themselves (Wongsongsam, 2010; Limlikhitaksorn, 2010).

4.5 Geographic trends

The species remains present throughout its natural range in Southeast Asia. The largest population over the past few years is in Cambodia. Since there has not been a publication on global population, the estimate is available for C. siamensis population within each range state that was gathered over years of researches. Between 100 and 300 wild adults may remain in Cambodia, based on footprints and other evidence (Simpson et al., 2006a). Lao PDR may support a similar number of adults (Bezuilen et al., 2009). The largest known population at any single site is 55-60 individuals, in Cambodia (Starr et al., 2010).

In Thailand, individuals persist in a number of scattered localities, and nests are sometimes documented (Kanwatanakid-Savini et al., 2012, Limlikhitaksorn, 2010, Temsiripong, 2007, Platt et al., 2002). In Vietnam, a reintroduced population at Cat Tien National Park had an estimated population of 100-150 individuals in 2010-2011 (a maximum of 80 non-hatchlings was observed), based on an initial release of 60 captive individuals (Pahl, 2012).

At Mesangat Lake in East Kalimantan, Indonesia, mark-recapture surveys in 2010-2011 indicated that less than 30 individuals may be present, although nearby areas remain unsurveyed. On the basis of these limited data, the global wild population of C. siamensis almost certainly comprises about 1,000 individuals.

5. Threats

Commercial hunting in the mid-twentieth century for the skin trade is considered to be the principal cause for the historical decline of C. siamensis. Current and ongoing threats in range states include habitat loss and degradation, and incidental capture/drowning in fishing gear. In most cases, construction of hydroelectric dams resulted in the loss of breeding habitat. This may not be the case in some protected areas in Thailand where extant population uses these watersheds.
The species’s intrinsic ability to recover, which is now evident, coupled with conservation efforts, the ban on wild harvests of the species, the designation of new protected areas, and the promotion of closed-cycle operations, have all contributed to the recovery of the Siamese crocodile. This is attested by its presence throughout its range in historical localities and areas where it was heavily hunted in the past.

6. Utilization and trade

6.1 National utilization

There is no utilization of wild *C. siamensis* in Thailand due to all of it dwelling in National Park which are protected area.

Currently, all commercial use of *C. siamensis* in Thailand derives from captive breeding operation. There are 601,548 *C. siamensis* from 836 housing (Department of Fisheries, 2011) including 23 Thai registered crocodile farms under Resolution Conference 12.10(Rev. CoP15) of CITES. Amount of crocodile farms that met qualification are preparing to register.

6.2 Legal trade

According to the Thai law, Wild Animal Reservation and Protection Act 1992, *C. siamensis* and its habitat is protected from any activities except for scientific purposes. As a result, there is currently no legal trade of wild Siamese crocodile. However, exemption of the Act allows *C. siamensis* to be captive-bred in captivity to trade in domestic and international under the law.

6.3 Parts and derivatives in trade

There is currently no trade of wild *C. siamensis* in Thailand. However, Siamese crocodiles were traded in national and international markets derived from captive breeding. According to the UNEP-WCMC Trade database 2007 - 2011, parts and derivatives of the Siamese crocodiles were skins, meats and leather products. The largest exporter was Thailand (117,875 skins, 894,628 kg of meats and 105,490 leather products), followed by Vietnam (55,715 skins, 15,098 kg of meats and 17,755 leather products).

The major importing countries of skins were Japan (108,424), Singapore (14,780) and South Korea (12,153). Furthermore, the major importing countries of meats were China (Hongkong 768,753 kg), China (105,528) and Japan (13,087).

6.4 Illegal trade

No illegal trade of wild Siamese crocodiles was recorded in Thailand. The current commercial production from captive breeding can serve the trade demand. Not necessary to take the species from the wild.

6.5 Actual or potential trade impacts

Thailand has a long history of farming crocodiles, exporting crocodilian products, and importing crocodiles and crocodile skins from other countries (Webb and Jenkins, 1991). Currently, there is no potential trade impact on the species.

7. Legal instruments

7.1 National

In the past, Thailand had the Wild Animal Reservation and Protection Act B.E. 2503(C.E. 1960) to enact wildlife and natural resources conservation instrument but it could not implemented CITES. From this reason the act was amended in year 1992 to be the Wild Animal Reservation and Protection Act B.E. 2535(WARPA) (C.E. 1992), which has article 23 and 24 to control international trade of the protected species. *Crocodylus siamensis*, *Crocodylus porosus*, and *Tomistoma schlegelli* were also listed in the protected species.

Under WARPA, the species are prohibited to possess, hunt, breed, or trade, except for scientific purposes. However, WARPA 1992 allowed for the specimen of *C. siamensis* and *C. porosus* from
registered captive breeding operations that can be allowed to trade by law. Besides, the species has been fully protected under the provision of WARPA. The law also protected crocodile habitats by determining Wildlife Sanctuary and Non-hunting area. Furthermore, the species are protected under National Park Act B.E. 2504 (C.E.1961), which prohibits the same illegal actions as indicated in WARPA.

7.2 International

The Siamese crocodile was included in CITES Appendix I in 1975. Since then, the Convention has proven its effectiveness in controlling international trade of the species and preventing illegal activities that may affect wild population. Resolution Conf. 11.12 on the *Universal tagging system for the identification of crocodilian skins* and 12.10 (Rev. CoP15) on *Guidelines for a procedure to register and monitor operations that breed Appendix-I animal species for commercial purposes* have established mechanisms to ensure control of international trade in crocodilians. This is proven by the clear recovery of the species and the few instances of the illegal trade reported by the Parties.

8. Species management

8.1 Management measures

Currently, no ranching operations involving wild specimens exist in Thailand. The only establishments authorized and in operation are closed-cycle captive-breeding farms, which must have proven production of offspring beyond the second generation (F2). These farms have been registered with either management authorities of Thailand or CITES Secretariat. They are part of Crocodile Management Association of Thailand (CMAT), whose goal is to promote sustainable use of crocodile resources.

8.2 Population monitoring

In Thailand, efforts are being made by Crocodile Management Association of Thailand, CMAT, to design and implement a country-wide monitoring program for the populations and habitat of *C. siamensis*. The Department of National Park, Wildlife and Plant Conservation currently carries out biannual monitoring project in Kaeng kranchan National Park (Limlikhitaksom, 2010). The rangers at Phu Khieo Wildlife Sanctuary also have done yearly monitoring along Huay Nam Prom River. The study design will be reviewed and assessed in a workshop involving experts and management authorities to come up with the most appropriate methods and define time intervals, localities, and variables to take into account for crocodiles and their habitat. Recently, the preliminary design supports wild and re-introduced specimens by monitoring effort with biannual sampling throughout the range of the species. In addition, capture-mark-recapture of individuals and standard data/sample collection, as well as nest location will be monitored. The training for wildlife rangers by CMAT was completed in mid 2004, the rangers were trained to understand natural history of crocodiles, and the importance of crocodile in its ecosystem, safe handling of all-sized crocodiles, night-light survey techniques, and field data collection.

The next step is to consider the possibility of involving range states in Southeast Asian region. The aim is to build on the experiences and results of many projects to obtain better information about the status and trends of relevant populations of the species and their habitat. Currently, there are some monitoring projects with community base management practice in neighboring states considering relevant areas in the range of the species.

8.3 Control measures

8.3.1 International

CITES signatories are required parties to enact national laws to implement their responsibilities under the convention. After the CoP13 held in Bangkok, Thailand 2004, all ten member countries (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and VietNam) of the Association of Southeast Asian Nations (ASEAN) are signatories to CITES and, therefore, legally bound to enforce CITES resolutions. For these objectives, ASEAN has established ASEAN Wildlife Enforcement Network (ASEAN-WEN).
RESPONSE / SOLUTIONS Governments and their agencies, the private sector, non-governmental organizations and the public all have important roles to play in stopping illegal wildlife trade. As the largest environmental enforcement network in the world, ASEAN-WEN is committed to furthering cooperation among all sectors and agencies; increasing law enforcement capacity and support for investigations; encouraging strong laws and appropriate sentencing to deter criminals; and increasing public awareness of wildlife crime and its impacts to reduce consumer demand.

ASEAN-WEN is helping to build capacity to dismantle the organized criminal networks behind the illegal wildlife trade to turn the tide on trafficking and improve protection for the region’s biodiversity.

8.3.2 National

Since ASEAN-WEN was found in 2004. Thailand Wildlife Enforcement Network (Thailand-WEN) was found in 2009 with the same concept as ASEAN-WEN.

To ensure that Thailand Wildlife Enforcement Network (Thailand-WEN) works effectively, the National Park, Wildlife and Plant Conservation Department in cooperation with the Department of Agriculture, Fisheries Department, the Royal Thai Police, and the Customs Department and relevant agencies for enforcement convened the cross border workshop on law enforcement networking and other activities to build up public awareness for example: distributed the printed materials, brochures, and leaflets on the wildlife trade campaign at airports, tourist spots, local markets, and hotels, as well as at wildlife check points of National Park, Wildlife and Plant Conservation Department and border check points of the Department of Agriculture, Fisheries Department, Royal Thai Police, and Customs Department etc.

8.4 Captive breeding and artificial propagation

There are 836 crocodile farms registered with the management authority of Thailand, Department of Fisheries. Among them there are 23 farms registered as a captive breeding operation that breed Appendix-I species in captivity for commercial purposes under Conf. 12.10 of CITES. Totally annual productions are approximately 200,000.

8.5 Habitat conservation

Total of 102 protected areas in Thailand including National Parks, Wildlife Sanctuaries, and Non-hunting areas provide sufficient shelter and legal protection to the Siamese crocodile in its potential range. Of these, 5 have records of the current population with total area of 5,652 km². There are also 10 RAMSAR sites with 3,706 km² altogether in the potential range of the \textit{C. siamensis}.

8.6 Safeguards

According to the precautionary measures listed in Resolution Conf. 9.24 (Rev. CoP15), Annex 4 (2b), the species can be transferred to Appendix II in compliance with Article II paragraph 2 (a), because of Thai government and CMAT commitment to re-establish viable wild population. Even though the species is likely to be in demand for international trade, its management is such that implementation of the Convention is secured and appropriate enforcement controls are in place (see sections 7 and 8 for more information). Moreover, the proposal includes a zero quota to ensure that wild populations of the Siamese crocodile do not become endangered by international trade.

9. Information on similar species

Similar species to \textit{Crocodylus siamensis} in international trade is \textit{Crocodylus porosus}. However, \textit{C. siamensis} can be distinguished by its number of belly traverse scale, wider head, ridges on snout do not stretch from eye to nostril. It rather conjoins and forms a triangle ridge in front of eyes. \textit{C. siamensis} horn back scales tend to be larger and higher than that of \textit{C. porosus}. Detailed information with morphological characteristics, parts and derivatives in trade, and identification keys on CITES-listed crocodile species is available in the \textit{CITES Identification Guide – Crocodilians} (Environment Canada, 1995). According to this guide, it is possible to distinguish between species similar to \textit{C. siamensis} even without special training. Distinctive characteristics can be easily observed in whole skins, which are the main product of the Siamese crocodile in trade.
10. **Consultations**

Cambodia, Lao PDR, and Vietnam will be consulted, as they are range states of the species, and considering supports transfer of the Thai population of the Siamese crocodile from Appendix I to Appendix II with a zero quota for wild specimens.

11. **Additional remarks**

During the International IUCN-SSC-Crocodile Specialist Group Regional Species Meeting 4th – 7th April, 2011, Bangkok Thailand, many recommendations were received from the Crocodile Specialist Group (CSG) including: Dialogue process between range states: Control of trade between range States is difficult for one country to achieve on its own. A dialogue process, perhaps through a regional working group under an appropriate body (e.g. ASEAN Wildlife Enforcement Network and/or Mekong River Sub-regional CITES Working Group), to address regional issues and problems with C. siamensis, is considered an important action to control illegal trade.

Further development and implementation of re-introduction programs in Thailand will be continued and strengthened in conjunction with national management plans. Ongoing assessment of the success and status of these restocking initiatives would be beneficial, with such information helping to underpin future release programs.

Strengthening linkages between commercial captive breeding, trade, and conservation in the Southeast Asian region is a top priority. Several countries in the region have already developed crocodile farming associations and other commercial enterprises linked to the farming industry. The crocodile industry has an important role to play in the conservation of wild populations, through funding of surveys and/or other conservation initiatives. A long-term aim could be the re-establishment of viable wild populations and their sustainable use by ranching.

Maintain pure stocks of C. siamensis in crocodile farms where large population of the captive Siamese crocodile population is maintained in Thailand, where interbreeding with C. porosus occurs. Farms should be encouraged to segregate genetically pure C. siamensis for conservation. Currently more than 7,000 animals from CMAT members are designated for re-introduction program in Thailand.

The large captive populations of C. siamensis held on farms represent a potential source for re-introduction programs, and farms in Thailand and Vietnam have donated C. siamensis for this purpose. Genetically pure C. siamensis have been found in captive holdings in Cambodia (Starr et al., 2009), Thailand (Srikulnath et al., 2012) and Vietnam (FitzSimmons et al., 2002).

To effectively control raising and trading of parts and derivatives from the same species with different CITES appendices among range states, regional regulation of registration for captive-breeding institution with the management authorities and the marking system of live and products will be harmonized among range states.

12. **References**


(Map 1) The Siamese crocodile habitats in Thailand
No. 0510.2/ ส.ส.

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21 August B.E. 2555 (2012)

Dear Sir/Madame,

Subject: Transfer of the Thai population of Crocodylus siamensis and Crocodylus porosus from Appendix I to Appendix II

In preparation for the sixteenth meeting of the Conference of the Parties (CoP 16) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), we are seeking your support on submitting a proposal to transfer of the Thai population of Crocodylus siamensis and Crocodylus porosus from Appendix I to Appendix II with a zero quota for wild specimens, on the basis of Article II, paragraph 2 (a), and in accordance with the preventative measures of the appropriate management controls included in Annex 4 (2b) of the Resolution Conf. 9.24 (Rev. CoP 15).

To allow us time to make a revision and inclusion of your comments in our proposals and meet proposal submission deadline, it would be most helpful for us to receive your comments by September 6th, 2012. You may respond to my attention, Department of Fisheries, KasetKlang, Chatuchak, Bangkok 10900; or by fax to (660) 2561 4689 or by e-mail to citesdof@yahoo.com.

Thank you very much for taking the time to consult with us on this important issue. I look forward to hearing from you.

Yours Sincerely,

[Signature]

(Dr. Wiroj Intaratwat)  
Director - General

Fisheries Licensing and Management Section  
Bureau of Fisheries Administration and Management  
Tel./Fax: +66 (2) 561 4689
Dear colleagues,

After having analyzed the proposals for transfer of species *Crocodylus siamensis* and *Crocodylus porosus* from Appendix I to Appendix II of CITES Convention, CITES Management Authority of Montenegro wish to inform you that we have no objections to the proposals and we strongly support efforts of Management Authority of Thailand. We think that proposals have sufficient adequate scientific informations and evidence datas in favor of the need to make transfer of these species in Annex II of the Convention.

Hope that we will meet soon at the next COP in Tailand next year.

Kind regards,
Vladimir Pavicevic

Latvian MA welcomes Your proposals and we have no any comments or objections to their content. Please note that Latvia will evaluate these proposals as a member state of European Union and officially Latvia will respond after consultations with other EU member states.

Best regards,
Gita Strode
CITES MA of Latvia

Dear Dr Jantrarotai,

Thank you for the letter dated 21 Aug 2012 and the proposals. We apologise for the delay in our response.

We are pleased to inform you that Singapore can support the proposals to transfer the populations of *Crocodylus siamensis* and *Crocodylus porosus* in Thailand from App I to II with a zero quota for the wild specimens, if the Thai populations of these 2 crocodilian species meet the scientific criteria for the down-listing.

Kind regards
Lye Fong Keng (Ms) | AD/Wildlife Section | Quarantine & Inspection Department | Agri-Food & Veterinary Authority
Tel: 63257349 | Fax: 62276403 | Website: [www.ava.gov.sg](http://www.ava.gov.sg)

Dear Collegue,

Thank you for the email. I here by forward your email to CITES Iran (Mr. Faraji) for further actions.

Kind regards,
Mehdi Shakouri
Iran CITES Sturgeon Management Authority and Director of Aquaculture Dept.
Iran Fisheries Organization,
No.250 , Fatemi Ave .,Tehran ,Iran .
Tel :(+98 21) 66941366
Mobile:+98 9128151783
5. **Australia**  
Monday, 17 September, 2012  
Dear Dr Jantrarotai,

Thank you for the opportunity to comment on your proposals to transfer *Crocodylus siamensis* and *Crocodylus porosus* populations in Thailand from Appendix I to Appendix II. Please find attached a copy of Australia’s letter to you, which contains our comments on your draft proposal.

Please note that our position for the Conference of the Parties is contingent on our domestic consultation process. The letter attached therefore only constitutes preliminary comment from this department.

If you would like to discuss Australia’s comments further, please contact Sharon Lane at Sharon.lane@environment.gov.au or on +61 2 6274 2880.

Regards  
Melinda Pearce  
CITES Management Authority of Australia | Australian Government Department of Sustainability, Environment, Water, Population and Communities  
[wildlife.communications@environment.gov.au](mailto:wildlife.communications@environment.gov.au)
Dear Dr. Jantrarotai

Thank you for your letter of 21 August 2012 regarding your draft proposal to transfer the Thailand population of *Crocodylus porosus* and *C. siamensis* from Appendix I to Appendix II (zero quota for wild specimens) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

We appreciate the opportunity to comment as a range State of *C. porosus*. Our position for the upcoming meeting remains contingent on our domestic consultation process so I am unable to advise of a position at this stage. This letter therefore constitutes only preliminary comment from this department.

In reviewing proposals to transfer any species or population from Appendix I to Appendix II, we look for adequate justification for the down-listing and whether sufficient measures are in place to regulate the trade and monitor the status of the wild population to ensure ongoing sustainability.

On review, the current draft proposals would benefit from further information to support a down-listing. The population estimates in the draft proposal of around 200 for *C. porosus* and 100 for *C. siamensis*, which have been extrapolated from limited surveys, may not sufficiently support down-listing.

Information on the likely impact of down-listing on the crocodile populations in neighbouring countries would also be useful. Down-listings to Appendix II will no longer require Thai crocodile farms to be assessed and registered by the CITES Secretariat as captive-breeding operations. Thailand will need to demonstrate that sufficient domestic controls, monitoring and enforcement are in place to ensure that illegal trade will not occur.

Both species currently meet several of the biological criteria for Appendix I listing as outlined in Resolution Conf. 9.24 (Rev. CoP15) Annex 1. These criteria include being threatened with extinction and a small wild population that has an observed decline in the number of individuals or the area and quality of habitat. Annex 4(A2) of this Resolution states that species in Appendix I should only be transferred to Appendix II if they do not satisfy the relevant criteria in Annex 1.

We would strongly recommend, if you have not already done so, that you seek advice from IUCN's Crocodile Specialist Groups (CSG) [www.iucncsg.org]. The views and scientific expertise of the CSG have been influential at Meetings of the Conference of the Parties to CITES in assessment of crocodile proposals.
Australia would appreciate if you could keep our CITES Authorities informed regarding the outcome of your proposals. If you wish to discuss this further, please contact Sharon Lane in the first instance on +61 02 6274 2880 or by email (Sharon.Lane@environment.gov.au).

Yours sincerely

[Signature]

Deb Callister
Assistant Secretary
Wildlife Branch
17 September 2012
6. United States of America  
fwsdbc@fws.gov  fwsdbc@fws.gov  Monday, 24 September, 2012

Thank you for the opportunity to review and comment on your draft proposals to down-list *Crocodylus siamensis* and *Crocodylus porosus* populations in Thailand. We are not able at this time to commit to supporting either of these proposals, as we evaluate and develop our positions on other Parties proposals after October 4, 2012. We would like to provide you with the following comments on the proposals:

1) The justification that you have provided for transferring these two species from CITES Appendix I to Appendix II is that you will be implementing precautionary measures listed in Resolution Conf. 9.24 (Rev. CoP15), Annex 4 (2b) by establishing a zero export quota for trade in wild specimens and by implementing appropriate enforcement controls that will safeguard wild populations.

**U.S. Comment:** We would like to point out that Resolution Conf. 9.24 (Rev. CoP15), Annex 4 (2) states, "Species included in Appendix I should only be transferred to Appendix II if they do not satisfy the relevant criteria in Annex 1..." Therefore, in addition to meeting the necessary precautionary safeguards in order to down-list an Appendix-I listed species, the species should no longer meet the biological criteria for inclusion in Appendix I. Your proposals to transfer Thailand populations of *Crocodylus siamensis* and *Crocodylus porosus* populations would be greatly strengthened if you could demonstrate that the two species no longer meet the biological criteria for inclusion in Appendix I. Your proposals to transfer Thailand populations of *Crocodylus siamensis* and *Crocodylus porosus* populations would be greatly strengthened if you could demonstrate that the two species no longer meet the biological criteria for inclusion in Appendix I, as per Annex 1 of Resolution Conf. 9.24 (Rev. CoP15). Based on the information provided in the two proposals, it appears that both species continue to meet the criteria for inclusion in Appendix I. We note that according to your proposals, there is currently very little information on population numbers of each of these species in the wild and that the best available information indicates that there may be as few as 200 individuals of each of these two species in the wild.

2) Both proposals state that the Thai government and the Crocodile Management Association of Thailand (CMAT) are committed to re-establishing viable wild populations by restocking wild populations, protecting habitats, and implementing country-wide monitoring programs.

**U.S. Comment:** We encourage these efforts to re-establish viable wild populations, and we encourage you to include more detailed information in the proposals about your success in such efforts to recover populations of these species. For example, how many numbers of individuals of each species are being released into the wild and over what time period, how are these individuals monitored to determine survival and reproduction, how much protected habitat is available for each species (hectares of wetland), how much additional habitat does Thailand plan to protect, what criteria do you use to determine if a population is viable, how do you plan to monitor populations once the populations are recovered (methods, frequency, etc.), etc.?

3) The proposals state that in Thailand there are 13 saltwater crocodile farms and 23 Siamese crocodile farms that are registered with CITES in accordance with Resolution Conf. 12.10 (Rev. CoP15).

**U.S. Comment:** We commend Thailand for working to take pressure off wild populations by producing captive stocks of each of these two species. Since Thailand is only trading in captive specimens, it is unclear what a transfer of either of these two species to Appendix II would accomplish.

4) Both proposals state that you received many recommendations during the international IUCN-SSC Crocodile Specialist Group Meeting in April 2011, in Bangkok, Thailand.

**U.S. Comment:** We believe it would be beneficial for you explain the success of your efforts to address these recommendations. For example, one recommendation was to segregate genetically pure stocks of each of the two species in crocodile farms. To what extent have you been able to do this? What safeguards are in place to ensure that captive stocks of one species do not escape and hybridize with wild stocks of the other species? What safeguards are in place to ensure that captive hybrid individuals do not escape into the wild?

Finally, we understand that you will be consulting with other range countries on these species, and we encourage you to include information received from these consultations in the proposals. Additional information on the status of these species globally as well as your rationale for only transferring the Thailand population of these two species will strengthen the proposals.
Please feel free to contact me if you have any questions on these suggestions. Thank you again for the opportunity to review these proposals.

Sincerely,

Rosemarie Gnam, Ph.D.
Chief
Division of Scientific Authority
4401 N. Fairfax Drive, Room 110
Arlington VA 22203
Phone: (703) 358-2497
Fax: (703) 358-2276

7. Cambodia
Dear Sir/Madam,

Based on your letter and proposal on proposing down listing of Siamensis crocodile and sea water crocodile. On behalf H.E. Prof Dr. Nao Thuok, Royal Delegate of Cambodia Director general of fisheries administration & CITES scientific authority would like to inform you that now fisheries administration in Cambodia is very fully supported on your proposal. Also FiA have write the letter clarify to CITES Management to be inform to your CITES to support too.

Please see on attachment in Khmer version for referencing related supporting letter on your proposal.

Please accept on my consideration and Good collaboration.

Your sincerely
Heng Sovannara
Deputy Director of Department of Fisheries Conservation &
Project Manager
Batagure baska & Crocodile Conservation
WCS Cambodia
#21, St.21, Tonle Bassac, Chamkarmorn
P.o.Box 1620, Phnom Penh, Cambodia
Phone/Fax: (855-23) 219 443/217 205
Tel: (855-16) 333 785
E-mail: h.sovannara@gmail.com

8. Solomon Islands
1 October, 2012

Dear Sir/Madam

Solomon Islands also has wild population of Crocodylus porosus but its trade is also banned by CITES. We are planning a national survey of wild crocodile population with the view to requesting CITES to lift the trade ban on our wild population, according to CITES conservation management measures or practices.

As we are absolutely certain that Thailand will also be supporting our efforts to transfer our Crocodylus porosus from Appendix I to II in the near term, Solomon Islands CITES MA would like to support your efforts in requesting that your Crocodylus porosus be transferred from Appendix I to II. We will definitively to learn and benefit from your experience when out time comes.

Joe Horokou
CITES MA
Solomon Islands
horokoujoe@gmail.com

9. Japan
1 October, 2012

Dear CITES Thailand

Thank you for your e-mail. Japan reply to your inquiry as follows:
We are now considering your country's proposals to downlist Crocodylus siamensis and Crocodylus porosus population in Thailand, and we cannot conclude that at this time.

In case you make the above proposal, we will further study for COP16.

Kotoha Itakura (Ms.)
Global Environment Division, International Cooperation Bureau, Ministry of Foreign Affairs (MOFA)
Tel: 81-3-5501-8000 (Ext. 3276)
   81-3-5501-8245 (direct)
kotoha.itakura@mofa.go.jp