CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of all species of the Genus *Chitra* spp. in Appendix II in accordance with Article II 2(a) of the Convention, and satisfying Resolution Conf. 9.24, Annex 2a, Criteria A and Bi).

B. Proponent

People's Republic of China and United States of America, in accordance with the consensus recommendation of the CITES-sponsored Technical Workshop on Conservation of and Trade in Freshwater Turtles and Tortoises in Asia, held in Kunming, China in March 2002.

C. Supporting statement

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Testudines

1.3 Family: Trionychidae

1.4 Species:
a) *Chitra chitra (*Nutphand, 1986)
Chitra chitra ssp. McCord & Pritchard, in press
b) *Chitra indica* (Gray, 1831)
c) *Chitra* sp. McCord & Pritchard, in press

1.5 Scientific synonyms: *Trionyx indicus* (Gray, 1831)

1.6 Common names:

English:	a) Southeast Asian narrow-headed softshell turtle Striped narrow-headed softshell turtle b) Indian narrow-headed softshell turtle Narrow-headed softshell turtle
French:	
Spanish:	
Bengali:	b) Chitra, Chhim, Dhush kachim, Gotajil
Hindi:	b) Chitra, Seem, Seonthar, Sitra, Sewteree
Nepali:	b) Chitra
Oriya:	b) Balera kaichha, Chitra kaichha
Thai:	b) Ta pab manlai, Grau daeng, Griu lai

1.7 Code numbers:

2. Biological parameters

Chitra chitra and *C. indica* are large softshell turtle species. According to Das (1991), clutch sizes for *C. indica* in India range from 65 to 187 eggs, with a mean of 118 eggs.

2.1 Distribution

Chitra chitra is found in Indonesia, Malaysia, and Thailand. Indonesia: The Southeast Asian narrow-headed softshell turtle is found on the islands of Sumatra and Java (Samedi and Iskandar, 2000). Malaysia: Records of *Chitra* are restricted to the Tahan river basin of Peninsular Malaysia (Smith,

1931). Thailand: This species is found in the Mae Klong basin of western Thailand (van Dijk and Palasuwan, 2000).

Chitra indica is found in Bangladesh, India, possibly Nepal, and Pakistan. Bangladesh: In Bangladesh, the narrow-headed softshell turtle is distributed in all major rivers including the Padma, Jumuna, Meghna, Brahmaputra, and Dholeswari rivers and their major tributaries (Rashid and Khan, 2000). India: This species is found in the Indus, Ganga, Mahanadi, Godavari Krishna, and Cauveri river systems in India (Das, 1991 as cited in Choundry et al, 2000). Nepal: This species is found in central Nepal, probably in and around Kathmandu (Das, 1991). It is widely distributed in endogangetic plain up to the Krishna and Godhari Rivers (Shrestha, 1997). Pakistan: *C. indica* occurs in the Indus flood plains and is found throughout the Indus river system of Sindh and Punjab (Rehman, 2002). This species has been recorded in Tatta and Jhelum (Das, 1991).

Chitra spec. nov. inhabits the Irrawady drainage system of Myanmar, including medium-sized tributaries such as the Man and Mon rivers (van Dijk, 1998: McCord & Pritchard, in press).

2.2 Habitat availability

Chitra chitra Indonesia: *C. chitra* can be found in the Karang Gading Wildlife Reserve in Southern Sumatra in the following habitats; estuarine mangrove; estuarine and sandy hummocks; forested beach; intermittent freshwater swamps; and forest (Samedi and Iskandar, 2000). It is also found in the Delta of Banyuasin-Musi rivers in South Sumatra (Samedi and Iskandar, 2000). Malaysia: No specific information is available on habitat availability for *C. chitra* in Malaysia. Thailand: *Chitra chitra* in Thailand is restricted to medium to large rivers with clear flowing water, a deep sandy bottom, and steep sand banks available as nesting habitat in places Peter Paul van Dijk, Personal communication). Habitat availability is modest in Thailand; although the Khwae Noi still provides good habitat, it is not protected from alteration and the protected section of the upper Khwae Yai is probably too small to have a viable population (van Dijk and Palasuwan, 2000).

Chitra indica General: This species inhabits large rivers with sandy bottoms and banks and is considered highly aquatic (Ernst and Barbour, 1989). Bangladesh: No specific information was found on habitat availability for *C. indica.* However, in Bangladesh, the human population boom, urbanization, water pollution, loss of wetlands, sediment accumulation in rivers, sand mining, and a reduction of forest cover in the country from 50% in 1970 to < 6% in 1990 (Rashid and Khan, 2000) have likely contributed to the decline in available habitat for these turtles. India: This species inhabits numerous riverine habitats in India (Choundry et al., 2000). Nepal: No specific information is available on habitat availability for *C. indica* in Nepal. Pakistan: Data was not found on habitat availability for *C. indic*a in Pakistan.

Chitra sp. Myanmar: The only published habitat information indicates that the species inhabits rivers with clear water, distinct flow and deep sandy bottom (van Djik, 1998).

2.3 Population status

Chitra chitra Indonesia: *C. chitra* is considered rare in Indonesia (Samedi and Iskandar, 2000). Malaysia: No information is available on the population status of *C. chitra* in Malaysia, but the scarcity of records indicates that the species is rare. Thailand: *C. chitra* is uncommon to rare in Thailand and certainly depleted (van Dijk and Palasuwan, 2000).

Chitra indica Bangladesh: This species is considered uncommon and has become rare or nearly extict from the Surma, Kushiyara, and the Karnaphuli river systems (Rashid and Khan, 2000). India: The narrow-headed softshell turtle is seriously threatened in India (Choundry et al., 2000). The populations are believed to be declining and there have been very few sightings of wild turtles in recent years (Bhupathy et al., 2000). Nepal: *C. indica* is common in Nepal (Shrestha, 1997).

Pakistan: The population status of *C. indica* is undetermined (Rehman, 2002) but it is apparently rarer compared to other sympatric softshell species (Das, 1991).

Chitra sp. Myanmar: No information is available on the population status of *Chitra* sp. in Myanmar.

2.4 Population trends

Chitra chitra Indonesia: There is little scientific information on the population trends of freshwater turtles in Indonesia (Samedi and Iskandor, 2000). Malaysia: No information is available on population trends of *C. chitra* in Malaysia. Thailand: *C. chitra* is in severe decline in Thailand (van Dijk & Thirakhupt, 1996; van Dijk and Palasuwan, 2000).

Chitra indica Bangladesh: This species has become rarer in the northeast, northwest, and central regions while uncommon in the southern districts of Bangladesh (Rashid and Khan, 2000). India: *C. indica* is experiencing a serious decline and is currently very rare in the main Ganges (Choudhury et al., 2000). Nepal: Turtle populations have declined drastically from various rivers as a result of illegal capture (Shrestha, 1997). Pakistan: No specific information is available on population trends for *C. indica* in Pakistan.

Chitra sp. Myanmar: Historical information suggests that turtles were at one time widespread and relatively common but all currently available evidence indicates that populations are now severely depleted and some species may be on the verge of extirpation (Platt et al., 2000). *Chitra* is likely among the most impacted species.

2.5 Geographic trends

No information was available on the geographic trends of *C. chitra* or *C. indica* from any of the range countries.

2.6 Role of the species in its ecosystem

Chitra chitra is a specialized fish eater that may on occasion take river prawns (van Dijk et al., in press).

Chitra indica eats fish, crabs, and shrimp (Wirot, 1979 as cited in Ernst and Barbour, 1989).

2.7 Threats

Chitra chitra Indonesia: The most significant threat to freshwater turtles in Indonesia is hunting for trade followed by habitat destruction caused by deforestation and conversion into agriculture, settlements, transmigration areas, logging, and forest fires (Samedi and Iskandar, 2000). Malaysia: *C. chitra* is threatened by the food and pet trade (van Dijk et al., 2000). Thailand: Threats to *C. chitra* include river alteration and pollution, sand dredging, dam construction, collection of both adults and juveniles as pets (perished animals are consumed), egg collection (no longer worthwhile), and captive breeding programs (van Dijk and Palasuwan, 2000; van Dijk et al., in press). The most serious threat comes from direct capture of adults for local consumption or for the animal trade (van Dijk et al., 1995).

Chitra indica Bangladesh: *Chitra* populations are declining rapidly because of excessive exploitation to meet demands in local markets for its meat, and collectors are now complaining about its scarcity (Rashid and Khan, 2000). India: *C. indica* is exploited for it's meat in trade and is also threatened by local consumption of it's eggs (Choundry et al., 2000). Nepal: Threats to this species in Nepal are caused by a reduction of plant cover by deforestation and erosion in the Siwalik mountains (Shrestha, 1997). Anthropogenic disturbances such as overfishing by gill netting, drift netting, harpooning, and dynamiting of pools are possible threats to this species (Shrestha, 1997).

Pakistan: Major threats to *C. indica* in Pakistan include destruction of habitat, drought, and the killing of turtles by fishermen and the local population (Rehman, 2002).

Chitra sp. Myanmar: It is likely that all species of turtles occurring in Myanmar are exploited for either food or local and export markets (Platt et al., 2000).

3. Utilization and trade

3.1 National utilization

Chitra chitra: Indonesia: There is little documented information on the domestic use of freshwater turtles and tortoises in Indonesia although it is believed that domestic use is much lower than the number of animals exported (Samedi and Iskandar, 2000). *Chitra chitra* is certainly hunted intensively in the known areas of occurrence in Java (Pritchard, 2001). Malaysia: In Malaysia, freshwater turtles and tortoises are used for subsistence hunting, and the pet and meat trade (Sharma and Tisen, 2000). Specific use of *C. chitra* is unknown. Thailand: Adult Southeast Asian narrow-headed softshell turtles are prized as status symbol pets and the captive breeding program has taken dozens of animals without producing a single captive bred hatchling (van Dijk and Palasuwan, 2000).

Chitra indica: Bangladesh: In the late 1970s and early 1980s, the narrow-headed softshell turtle was caught in large numbers for the local trade (Rashid and Khan, 2000). It was reported to be exported by Fugler (1984) and Burua and Islam (1986) but was not observed in the local and export markets by Rashid and Swingland (1997) possibly due to significant population declines (Rashid and Khan, 2000). Local traders prefer to slaughter these turtles and sell the meat fresh because its large size makes it difficult to transport (Rashid and Swingland, 2000). There is a significant local consumption of turtles in Bangladesh (Bhupathy et al., 2000). India: *C. indica* is traded widely in India (Choundry et al., 2000). Nepal: There is considerable turtle trade in meat and eggs in the Terai, Narayanghat, Biratnager, and in Mahendra Nagar where freshwater turtles are taken to different parts of the Terai (Shrestha, 1997). Pakistan: Generally, the people of Pakistan do not eat freshwater turtles and tortoises (Rehman, 2002) although some subsistence use occurs (van Dijk, 2002).

Chitra sp. Myanmar: Incidental observations of turtle traders (Platt et al., 2000, 2001 as cited in van Dijk, 2002) within Myanmar indicate that turtle collection is widespread and intensive throughout the country (van Dijk, 2002). Some level of subsistence consumption presumably occurs, but no details have been reported (Platt et al., 2000).

3.2 Legal international trade

Chitra chitra: Indonesia: Records from the Directorate General of Fisheries of Indonesia show that exports of freshwater turtles and tortoises in 1997 were 423,100 animals weighing 670,653 kg and in 1998, they were 396,719 animals weighing 828,032 kg (Samedi and Iskandar, 2000). Malaysia: There is only limited information available from the Department of Wildlife and National Parks on the legal trade in freshwater turtles (Sharma and Tisen, 2000). Records indicate that 15,818 live turtles were exported into Hong Kong Special Administrative Region of China (Hong Kong SAR) from Malaysia between 1993 and 1996 (Lee, 1996 cited in Sharma and Tisen, 2000). Thailand: *C. chitra* is specifically protected from exploitation under the Wild Animals Reservation and Protection Act and there is no legal international trade of this species from Thailand (van Dijk and Palasuwan, 2000).

Chitra indica: Bangladesh: The center of the turtle trade on the Indian subcontinent is Bangladesh with the majority of turtle exports destined for China, although a lesser amount is shipped to India (Bhupathy et al., 2000). Turtles are collected within country and Bangladesh also serves as a regional collection center and trans-shipment point for turtles gathered in neighbouring countries (Bhupathy et al., 2000). India: There is no legal international trade of *C. indica* from India

(Choudhury et al., 2000). Nepal: Little is known regarding the turtle trade in Nepal but some local market surveys have been conducted and limited export to food markets in China is suspected but has not been investigated (Bhupathy et al, 2000). Additional turtles may be sent to into Bangladesh and then on to southern China but this has not been investigated either (Bhupathy et al., 2000). Pakistan: Little information is available on turtle trade involving Pakistan. The country is not known to be an importer of turtles although a number of Pakistan based traders have advertised shipments of turtles for the consumption trade and have offered juvenile animals of a variety of freshwater turtle species to the pet trade claiming these to have been bred in captivity (van Dijk, 2002).

Chitra sp. Myanmar: Commercial trade in tortoises and freshwater turtles is not allowed in Myanmar, and as a result, no official trade statistics are available (van Dijk, 2002).

3.3 Illegal trade

Chitra chitra: Indonesia: Actual export numbers of all species are essentially several times greater than those managed by the Indonesian government (Samedi and Iskandar, 2000). Malaysia: In Malaysia, it is probable that illegal trade occurs because it is unlikely that local management authorities, including Wildlife Department and Customs staff, are able to identify all traded turtle species (Sharma and Tisen, 2000). Thailand: *Chitra* are traded domestically and illegally smuggled into the international pet trade, destined mainly for Japan (van Dijk and Palasuwan, 2000).

Chitra indica: Bangladesh: There is an undetermined amount of illegal smuggling of turtle products by ship from Bangladesh (Bhupathy et al., 2000). India: There is suspected illegal exports of *C. indica* in India (Choundry et al., 2000). Nepal: No information on illegal trade of *C. indica* was available for Nepal. Pakistan: There has been a continuous ban on the export of all reptiles in Pakistan for the last 20 years (Rehman, 2002) but, U.S. records from 2000 – 2002 indicate a number of non-CITES listed species have been imported from Pakistan (U.S. Division of Management Authority, 2002).

Chitra sp. Myanmar: Observations in markets in mainland China of substantial quantities of turtle species endemic to Myanmar (Kuchling, 1995; Artner & Hofer, 2001 as cited in van Dijk, 2002) show that illegal exports from Myanmar are substantial (van Dijk, 2002).

3.4 Actual or potential trade impacts

Chitra chitra: Indonesia: The demand for turtles and tortoises for pets, food, and medicine is increasing with growing human populations and economic improvements especially in East and Southeast Asia. Without further control on the trade of these species, they will certainly decline (Samedi and Iskandar, 2000). Malaysia: *C. chitra* is one of the species of the whole subregion whose populations are known or suspected to be impacted most seriously by the food and pet trade (van Dijk, 2000). Thailand: Trade impacts to *C. chitra* are potentially severe because of a small, depleted natural population combined with very high prices paid for live animals (van Dijk and Palasuwan, 2000).

Chitra indica: Bangladesh: With increased commercialization and massive collections throughout the year all over the country, an abrupt decline in turtle populations has been noticed in Bangladesh (Rashid and Khan, 2000). *C. indica* was previously exported in moderate numbers from Bangladesh, but is now depleted (Rashid and Khan, 2000 as cited in Rhodin, 2002). India: The narrow-headed softshell turtle is in danger of local extinction due to trade pressures in India (Choundry et al., 2000). It disappeared from Indian domestic trade in 1986-1987 (Rhodin, 2002). Nepal: No information on potential trade impacts on *C. indica* was available for Nepal. Pakistan: A few illegal exporters of reptiles are decreasing the turtle populations (Rehman, 2002).

Chitra sp. Myanmar: Available evidence suggests declines have occurred as a result of over-harvesting for both local consumption and to meet the demands of export markets and, with one

exception, all chelonian species in Myanmar should be considered threatened by levels of harvest that are almost certainly unsustainable (Platte et al., 2000).

3.5 Captive breeding for commercial purposes (outside country of origin)

The Turtle Survival Alliance considers *Chitra chitra* a prime candidate for establishment of assurance colonies in Europe and North America.

4. Conservation and Management

4.1 Legal status

4.1.1 National

Bangladesh: *C. indica* is not included on the Schedules of the Bangladesh Wildlife Preservation (Amendment) Act (BWPA) of 1974. Bangladesh is a signatory to CITES and acceded in November 1981.

India: *C. indica* is protected under schedule IV of the Indian Wildlife (Protection) Act of 1972 (Choundry et al., 2000). Schedule IV species require a small game hunting license (van Dijk, 2002). India has been a Party to CITES since October 1976.

Indonesia: *C. indica* are given national protection status in Indonesia under Government Regulation Act No. 7 and 8 of 1999, which is in application of Law No.5/1990 concerning the Conservation of Biological Natural Resources and their Ecosystems and incorporates Decrees 327/1978 and 716/1980 of the Ministry of Agriculture (van Dijk, 2002). *C. chitra* is protected under the name of *C. indica* (Samedi and Iskandar, 2000). No utilisation in any form is allowed for species listed in this protection status, except with special permission from the Minister and under the consent of the Scientific Authority for special circumstances such as research and captive breeding, and no capture or export quotas are set. (Samedi & Iskandar, 2000 as cited in van Dijk, 2002).

Myanmar: The Burma Wildlife Protection Act, 1936, was the main law extending protection to listed species (van Dijk, 2002). In 1991, the only listed species were mammals and birds, and no turtle species were included in this law (Gaski and Hemley, 1991 cited in van Dijk, 2002). The new "Protection of Wildlife, Wild Plants and Conservation Law," enacted in 1994, replaces the Burma Wildlife Protection Act of 1936 (Moe et al., 2002). Myanmar law prohibits the commercial exploitation of natural resources, including tortoises and freshwater turtles, but allows collection for subsistence use (van Dijk, 2002; Moe et al., 2002). Thus, the commercial trade of tortoises and freshwater turtles is illegal (Platt et al., 2000). Turtles are protected by both fisheries and forestry laws, and all wildlife is protected in wildlife sanctuaries and national parks (Platt et al., 2000). The Department of Fisheries does not issue permits for the harvest of turtles and Law 34 provides stiff penalties for those engaged in turtle trading (Platt et al., 2000). Myanmar became a CITES Party in 1997.

Malaysia Federal Legislation: At the national level, two federal Acts are the primary legislation for the protection of wildlife and fisheries i.e. the Protection of Wild Life Act 1972 and Fisheries Act 1985. The former, applicable only to Peninsular Malaysia, does not cover any of the species of chelonians, and this means that they are extremely vulnerable to exploitation (Sharma & Tisen, 2000 as cited in van Dijk, 2002). In contrast, the Fisheries Act 1985 specifically states in its preamble, "An Act relating to fisheries, including the conservation, management and development of maritime and estuarine fishing and fisheries, in Malaysian fisheries waters, to include turtles and riverine fishing in Malaysia and matters connected therewith or incidental thereto." However, the Act also clarifies that matters relating to maritime and estuarine fisheries, excluding turtles, are enumerated in the Federal

and Concurrent Lists, whereas turtle hunting and riverine fishing are under the State List. This means that provisions of the Act "insofar as they relate to turtles and riverine fisheries in any State in Malaysia shall not come into operation in that State until they have been adopted by law made by the Legislature of the State." Whether or not individual States have adopted the Fisheries Act 1985, their fisheries resources are automatically afforded legal protection by virtue of these matters being on the Concurrent List of the Constitution, but turtles are specifically excluded from this legal mandate (van Dijk, 2002). Thus, the onus lies on each State to formulate effective legislation to protect both marine and non-marine turtles. Unfortunately, this circumstance has led to either a lack of standardised legal protection for most turtle species inhabiting the peninsular or lack of protection whatsoever. (Sharma & Tisen, 2000)

Part VII of the Fisheries Act 1985 deals with turtles and inland fisheries and promotes development and rational management by state authorities in consultation with the Director General of the Department of Fisheries. This allows the states to make rules for proper conservation and regulation of turtles, their eggs, and inland fisheries, inclusive of licensing, fishing methods, dam construction, and sand removal. In areas beyond the jurisdiction of the States, the Director General has the power to make regulations. It is unclear as to whether the terminology used in the legislation intended to include only marine turtles, or provides means to protect freshwater terrapins as well (Sharma & Tisen, 2000 as cited in van Dijk, 2002).

The import and export of turtle eggs are subject to the restrictions stated in the Customs (Prohibition of Imports) Order 1988 and Customs (Prohibition of Export) Order 1988; however, there is confusion over the exact meaning of the terms used in the legislation. Under the First Schedules, the importation and exportation of "the turtles eggs" from or to any country are absolutely prohibited. Under the Second Schedules, "eggs of testudinate (terrapin and the like) excluding turtle eggs" may not be imported or export from or to any country without license. Unfortunately, the terminology is not well defined in the legislation, which may result in various interpretations. It is widely assumed that "turtle eggs" means those of marine turtles only, while the "eggs of testudinates (terrapin and the like)" refer to all other species, since all turtles, terrapins and tortoises are considered testudinates. (Sharma & Tisen, 2000).

State Legislation: Existing legislation at the State level in Peninsular Malaysia concentrates on matters related to regulated exploitation, licensing for egg collection, and possession or killing of marine turtles, but not terrapins or tortoises (Gregory & Sharma, 1997 as cited in van Dijk, 2002). Of the eleven peninsular States, only six, excluding Perak's River Rights Enactment 1915, currently have legislation pertaining to protection and exploitation of turtles and three States (Pahang, Penang and Perak) had a draft document under review in 1999. However, two States (Perlis and Selangor) do not have any legislation whatsoever to safeguard chelonians (Sharma & Tisen, 2000).

In 1915, Perak implemented the River Rights Enactment, which granted exclusive rights to take turtle eggs along specified areas of the Perak River to be vested in the Ruler of the State. During five months of the year, setting traps was prohibited and at no time could anyone kill any turtle without permission. Still in effect today, this enactment claims turtles as those reptiles of genera *Orlitia, Callagur, Batagur, or Hardella*. New legislation is currently being drafted in Perak to provide more effective protection for turtles (Sharma & Tisen, 2000).

Legal measures for turtle conservation were initiated in Terengganu and Kedah in 1951 and 1972, respectively, where legislation pertaining to reptiles was based on local names instead of using taxonomic criteria. These two States rely on Malay language terms such as "tuntung" and "penyu", which are generic names for terrapins and marine turtles, for

identification of species. Disjointed phrasing in the Kedah Enactment seems to imply that only reptiles known as "penyu" and "tuntung" known as *Callagur picta* (= *C. borneoensis*) are covered by the legislation. (Sharma & Tisen, 2000).

Legislation from Johor, Kelantan and Negeri Sembilan uses the phrase "any reptile belonging to Order Chelonia" in its interpretation. However, Malacca's legislation restricts its coverage to five species listed in the First Schedule, although it qualifies turtles as being any reptile belonging to the Order Chelonia, which technically means all twenty-two local species (Sharma & Tisen, 2000).

Malaysia acceded to CITES in October 1977 and entered into force in January 1978.

Nepal: *C. indica* is not listed under the National Parks and Wildlife Conservation Act 2029, of 1973 (van Dijk, 2002). Nepal became a party to CITES in 1975.

Pakistan: Generally, domestic species conservation in Pakistan is a provincial responsibility; each of the four provinces and the capital territory of Islamabad has its own species conservation legislation (van Dijk, 2002). A federal ban was imposed in August 1981 on the export of all wild mammals, reptiles and certain birds including their parts, products and derivatives, except for limited numbers of authorised hunting trophies (Gaski & Hemley, 1991 as cited in van Dijk, 2002); this ban has remained in force up to the present (Rehman, 2002). Pakistan became a Party to CITES in 1976.

Thailand: In Thailand, the Southeast Asian narrow-headed softshell turtle is specifically protected from exploitation under the Wild Animals Reservation and Protection Act B. E. 2535 (WARPA), which was revised in 1992 (van Dijk and Palasuwan, 2000). The WARPA Law controls hunting, trade, possession, import, export, and commercial breeding of wildlife. It also includes provisions for the implementation of CITES. Thailand has been a CITES signatory since 1983.

4.1.2 International

No species in the genus *Chitra*, including *C. chitra* and *C. indica,* are currently listed in the CITES Appendices.

4.2 Species management

4.2.1 Population monitoring

Pakistan: Population studies including assessments of long-term trends continue, based at Chulalalongkorn University, Bangkok (van Dijk & Thirakhupt, 1996; van Dijk et al., in press).

No population monitoring efforts are known to have been carried out, to be in progress, or to be in preparation in any other range states.

4.2.2 Habitat conservation

Chitra chitra Indonesia: Some of the wetland areas which are important habitat for freshwater turtles and tortoises have been included in the network of protected areas in the forms of National Parks, Wildlife Reserves, and Nature Reserves (Samedi and Iskandar, 2000). Malaysia: A number of protected areas have been declared in Malaysia including extensive areas such as Belum, Taman Negara, and Endau-Rompin in the Peninsula; Taman Negara includes a river section from which *Chitra chitra* has been reported (Sharma and Tisen, 2000). Thailand: There are over 100 protected areas in Thailand where collecting or other forms of disturbance of any plants or animals are prohibited (van Dijk and Palasuwan,

2000). There are also various Non-Hunting areas, but there is often intensive use of these areas by the local population (van Dijk and Palasuwan, 2000). *Chitra chitra* is not confirmed to inhabit protected areas in Thailand, but several known locality records are just downstream from protected river sections (van Djik & Thirakhupt, 1996; van Dijk et al., in press).

Chitra indica Bangladesh: There are 15 protected areas, occupying 1.5% of the country (Rashid and Khan, 2000). India: There are turtle sanctuaries in Varanasi, along the Ganga and in the Chambal River, as well as in Satkosia in Orissa; Harike is a Ramsar site (Choundry et al., 2000). The narrow headed softshell turtle is also known to inhabit Kaziranga National Park and Nameri Wildlife Sanctuary (Choundry et al., 2000). Pakistan: There are many National Parks, Game Sanctuaries and Game Reserves in Pakistan (Rehman, 2002).

Chitra sp. Myanmar: Significant areas of Myanmar have been designated as protected areas (currently 38 areas covering 31,972 sq. km or 4.7% of total land area (U. Kyaw Moe et al., 2002). Occurrence of *Chitra* inside protected areas remain unconfirmed.

4.2.3 Management measures

India: In India, there is a headstart captive rearing and reintroduction program at Varanasi along the Ganga (Choundry et al., 2000). Pakistan: Currently, many exporters in Pakistan are interested in the captive breeding of freshwater turtles are planning to apply to the appropriate agencies for permission (Rehman, 2002). Thailand: Captive breeding projects exist for *C. chitra*; these have not been considered successful (van Dijk and Palasuwan, 2000).

4.3 Control measures

4.3.1 International trade

No information is available on this issue.

4.3.2 Domestic measures

Bangladesh: Forest officers, designated as wardens, are responsible for enforcement of the Wildlife Protection Act. Violators can be sentenced up to two years in jail and fined up to USD 1000 but enforcement and sentencing has been lax and violators often receive light sentences (Bhupathy et al., 2000). There is currently a program underway to educate judges on the need for strict enforcement of protective wildlife legislation (Bhupathy et al., 2000). India: There are market raids to control trade of *C. indica* in India (Choudhury et al., 2000). Mayanmar: All wildlife is strictly protected within Wildlife Sanctuaries and National Parks in Myanmar, and any acivities in Reserved Forests require special permits under the Forest Law of Myanmar, enacted in 1992 (U Kyaw Moe et al., 2002). Nepal: Major national parks and wildlife parks that are strategically located in the Himalayan foothills or the Terai regions of Nepal provide some protection, but do not include entire watersheds of the major rivers essential to chelonians (Shrestha, 1997). Thailand: Enforcement efforts to stop exploitation and trade in protected species and to prevent incursions and encroachment in protected areas are widespread but sometimes restrained by lack of manpower and identification skills and the complications from different responsibilities and authorities of various departments (van Dijk and Palasuwan, 2000).

5. Information on Similar Species

Identification of the different species of *Chitra* is very difficult and beyond the skills that can realistically be expected from anyone except experienced turtle biologists.

6. Other Comments

Chitra chitra: This species status on the IUCN 2000 Red List is Critically Endangered (A1cd, B1 + 2c). *Chitra indica:* This species status on the IUCN 2000 Red List is Endangered (A1cd + 2cd).

All range countries were consulted by mail regarding this proposal. The Republic of Indonesia strongly supports this proposal, at least for its native species, *Chitra chitra*. Nepal supports the listing of *Chitra indica*.

The consensus recommendation from the CITES-sponsored Technical Workshop on Conservation of and Trade in Freshwater Turtles and Tortoises, held in Kunming, China from March 25-28, 2002, is that the genus *Chitra* is among the 11 highest-priority taxa for an Appendix-II CITES listing at CoP12. Governments of most range countries for the species were represented at the Kunming Workshop.

7. Additional Remarks

Anders G. J. Rhodin of the Chelonian Research Foundation has recommended that *C. indica* be listed in Appendix II. He also recommends that *C. chitra* be listed in Appendix I or II and a zero quota for exports from the wild be established (Rhodin, 2002).

8. References

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