CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

Other proposals

A. PROPOSAL

Inclusion of *Callagur borneoensis* in Appendix II

B. PROPONENT

The Federal Republic of Germany

Brunei Darussalam

C. SUPPORTING STATEMENT

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Testudines

1.3 Family: Emydidae

1.4 Species: *Callagur borneoensis* (Schlegel and Müller, 1844)

1.5 Scientific synonyms: *Emys borneoensis*, Schlegel and Müller, 1844

*Batagur picta*, Gray, 1862

*Kachuga major*, Gray 1873

*Callagur picta*, Boulenger 1889

1.6 Common names: English: Painted terrapin, Painted Batagur

Local dialects: Tuntong Laut, Sutong (Malaya)

Tao Lai Teen Bet (Thai)

2. Biological Parameters

2.1 Distribution:

The habitats occupied by *Callagur borneoensis* are areas of tidal influence in medium to large rivers. The Painted terrapin generally nests on ocean-facing sand beaches but nesting also occurs on riverine sand banks and sand islands within the river where these are available (Sharma, 1995a). Apparently *Callagur* prefers to nest on sea beaches with deep sand and little vegetation (Moll, 1990). Both, juveniles and adults inhabit brackish to freshwater portions of rivers. Areas of high salinity, especially near the river mouth (and during high tide) are avoided (Sharma, 1996a). However, the hatchling is able to survive for at least two weeks in 100% sea water, what allows them enough time to migrate from their sea-beach nests to fresh water (Dunson and Moll, 1980). Since *Callagur* nests on the same beaches as sea turtles, licensed egg collectors working each beach and taking almost every egg that is laid utilize also the eggs of this species (Moll, 1996). As a typical river-terrapin it occurs in regions of open water. It is an excellent swimmer and diver and only comes to land to bask and to lay its eggs (Obst, 1986). The Painted terrapin is omnivorous, while juveniles prefer animal feed, whereas adults are primarily vegetarians (Müller, 1987).
*Callagur borneoensis* ranges from Southern Thailand southward through Malaysia to Sumatra and Borneo (Ernst & Barbour, 1989; Iverson, 1992). Its present distribution in the respective countries is reported as follows:

**Brunei:** Individuals of this species are occasionally encountered in mangrove and estuarine habitats (Wong, 1996).

**Indonesia:** Painted terrapins can be found in Kalimantan (Borneo) and Sumatra (Yuwono, 1994; Boeadji, 1995; Wirjatmodjo, 1996). During a survey in South Sumatra and Lampung a field team visited 58 major rivers and tributaries in the two provinces. According to riverine dwellers *Callagur* and *Batagur* (it was rarely possible to determine the species) occurred on at least 10 rivers in the studied area: S. Pasir, S. Somor, S. Tanjung Pasir, S. Sibur Besar, S. Badak, S. Mesuji, S. Tulang Bawang, S. Sepuhiti, W. Kambas and W. Sekampung. The report of the Somor River was confirmed. All the rivers included sand banks suitable for nestings (Moll, 1990).

**Malaysia:** It occurs in Peninsular Malaysia, Sarawak (Moll, 1985) and Sabah (Sharma, 1996a). The fact that in Malaysia both *Callagur* and *Batagur* are called “tuntong” led to some confusion in the literature. As a result the distribution of the species is not completely known. Nevertheless the rivers of Malaysia were surveyed in 1989. Fishermen, egg collectors, and other knowledgeable persons were interviewed on each river. According to these interviews, visual confirmation by investigators and to some further surveys, *Callagur* occurs in the following Peninsular Malaysian rivers (Moll, 1990): Kedah R. and Muda R. (Kedah); Beruas R., Perak R. and Bernam R. (Perak); Selangor R. and Langat R. (Selangor); Linggi R., Sungai Baru R. and Melaka R. (Melaka); Muar R., Batu Pahat, Senggarang R. and Sedili Besar R. (Johor); Endau R. (Johor / Pahang); Pontian R., Romping R., Pahang R. and Kuantan R. (Pahang); Kemaman R., Kemais R., Kerteh R., Paka R., Dungun R., Merchang R., Marang R., Ibai R., Terengganu R., Merang R., Setiu R. and Besut R. (Terengganu); Semerek R. and Kelantan R. (Kelantan).

**Thailand:** *Callagur* is virtually extinct in Southern Thailand (Jenkins, 1995). At present, it is confirmed only from Klong La-ngu (river) in Satun Province on which the Freshwater Wildlife Preservation Station is situated (Moll, 1990; van Dijk, 1996a). According to a survey (Moll, 1990) most of the turtles being kept at the station were collected along the Klong La-ngu. As clearing of trees on the watershed has increased flooding erosion destroyed many former beaches. Therefore, only few good nesting beaches remained along the river. In 1990 the field team was shown sand banks in the next beach up river, Pan Kauon, where *Callagur* were said to nest (Moll, 1990). In February 1993 van Dijk (1996b) was told by staff at the station that some turtles in their captive population had been sent from the eastern coast of Peninsular Thailand (Songkhla, Pattani to Narathiwat). Nevertheless, no records of date or quantity were accessible.

**Myanmar:** Jenkins (1995) suggests that there is perhaps a population left in Myanmar, which is adjacent to populations in Thailand. Nevertheless, van Dijk (1996a; 1996b) emphasizes that there is no indication that *Callagur* occurs in this country and that Klong La-ngu is the northernmost record of this species on the Andaman Sea coast.

### 2.2 Habitat availability:

Considering the habitats available the research has been focussed on mangrove forests and nesting beaches, since they are main habitats of *Callagur borneoensis*. However, Sharma (1996a) concludes from his studies at its movement and diet that riparian (=riverside) forests are an important habitat, as well.

**Brunei:** According to Bennett (1991) Brunei Bay contains some of the most extensive and best-preserved mangroves in Southeast Asia. Nevertheless she points out that the mangrove forests are under threat from both, clearance (mostly illegal) and pollution. There was no data available on the status of the nesting beaches.
**Indonesia**: Indonesian mangroves have become probably the most threatened forests in the archipelago (Petocz, 1985, acc. to Cox and Collins, 1991). Most of the destructions result from conversion of the land for agriculture, brackish water fishponds, salt ponds, and human settlement (Hanson and Koesoebiono, 1987, acc. to Cox and Collins, 1991). Furthermore, as a result of lumbering, erosion leads to siltation of the streams and rivers (Moll, 1990).

**Malaysia**: In Peninsular Malaysia there are a lot of extensive mangroves along the estuaries of the larger rivers, which are managed by the State Forest Departments on a sustained yield basis (Kishokumar et al., 1991). However, from 1965 to 1985, use for agriculture, urbanisation, ponds and fisheries led to a decline of mangroves from 1184 sq. km to 983 sq. km (Anon., 1986, acc. to Kishokumar et al., 1991). In Sarawak mangrove forests are exploited for woodchip and cordwood in an extent of about 20 sq. km annually. In spite of rules to retain a buffer strip along banks of rivers and coasts, regeneration is poor (Collins, 1991). In Sabah woodchipping concessions have allowed to cut down over 40 per cent of the mangrove forests. Similar to Sarawak, regeneration will be likely limited by an absence of propagules and by changes of the environment (Collins, 1991). In addition to this, loss or degradation of nesting habitats takes place at both, the east and the west coast of Peninsular Malaysia (e.g. Setiu and Paka river, Terengganu; Linggi river, Melaka; see 2.7) (Sharma, 1996b; 1996c).

**Thailand**: Within the period of the last 20 years, a widespread destruction of mangrove habitats took place (van Dijk, 1996a). From 1961 to 1989 the area of mangrove habitat had decreased to nearly half of the former (Parr, 1994). Thus, the number of habitats available have strongly declined. As aforesaid (see 2.1) clearing trees leaded e.g. to high losses of nesting beaches at the Klong La-ngu.

### 2.3 Population status:

**Brunei**: As *Callagur borneoensis* is reported to be found "occasionally" it may be suggested to be rather rare. However, data on estimates on its population density do not exist.

**Indonesia**: According to Yuwono (1994), *Callagur* is quite widespread in Sumatra and Kalimantan (Borneo), whereas other sources characterize the species to be considerably rare (Boeadi, 1995; Wirjoatmodjo, 1996).

**Malaysia**: The Painted terrapin is rather widespread in the rivers of Peninsular Malaysia but it was not found to be common in any of these and individual nesting populations are in general extremely small. Although it is known to occur e.g. in 12 rivers of the Terengganu State it is seriously threatened with extinction (Moll, 1987, 1990). Only the Setiu, Paka and Linggi Rivers are believed to hold to some extent a large abundance of nesting females each. While the Setiu River has an annual nesting population of around 180 females, in the Paka River the nesting population in 1994 was between 59 and 118 females (Sharma, 1994a, 1995a). In 1995 the nesting female population for Linggi River was estimated to be between 54 and 108 terrapins (Sharma, 1996a).

**Thailand**: As mentioned above, there is only one population of *Callagur* left, to be found on the Klong La-ngu in Satun, where about 80-100 adults are kept in an enclosure at the Inland Fisheries Research Station. There is some reproduction in the order of a few hundred hatchlings per year (van Dijk, 1996a).
2.4 Population trends:

**Brunei:** There are no data available on the development of the populations in Brunei. Nevertheless anecdotal accounts suggest the specimens to be fewer than previously (Wong, 1996).

**Indonesia:** Hitherto, no precise estimates have been made on the populations of this species. However, according to Moll (1996), Sumatra is perhaps the only part of the range where *Callagur* is not rapidly declining. By all means, the fact that trade in Painted terrapin is every year increasing indicates an alarming trend in over-utilization of this turtle (Yuwono, 1994; Boeadri, 1995; Jenkins, 1995). Therefore there is little doubt that the population of *Callagur borneoensis* is declining.

**Malaysia:** During his research from 1975 to 1990 in Malaysia, Moll (1996) also observed *Callagur*. To his opinion it was apparent that the turtle was heading toward extinction (see also 2.3). The following nesting population figures for Setiu and Paka Rivers (which hold two of the three major populations) are based on the research of Sharma (1996a) in the field and data which he obtained from the Department of Fisheries Malaysia and licensed egg collectors. Estimates of nesting female numbers are based on the fact that these terrapins may nest twice per year. The higher estimate is based on the actual number of egg clutches collected (i.e. one clutch per female), whilst the lower estimate follows the assumption that all females lay two clutches per season (Sharma, 1996a).

Table 1: Minimum nesting population of *C. borneoensis* at Paka River, Terengganu, Peninsular Malaysia.

<table>
<thead>
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<tbody>
<tr>
<td>Estimated number of nesting females</td>
<td>41-81</td>
<td>59-118</td>
<td>80-160</td>
<td>59-118</td>
</tr>
</tbody>
</table>

(Source: Department of Fisheries Malaysia, 1994; Sharma, 1995a; 1995b).

Table 2: Minimum nesting population of *C. borneoensis* at Setiu River, Terengganu, Peninsular Malaysia.

<table>
<thead>
<tr>
<th>Year</th>
<th>1993</th>
<th>1994</th>
<th>1995</th>
<th>1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated number of nesting females</td>
<td>229-458</td>
<td>No data</td>
<td>138-276</td>
<td>78-157</td>
</tr>
</tbody>
</table>

(Source: Sharma, unpublished data).

The following estimates of nesting females are calculated based on reported numbers of egg clutches laid (Sharma, 1996a):

Table 3: Estimated number of nesting females in selected rivers in Terengganu, Malaysia.

<table>
<thead>
<tr>
<th>River</th>
<th>1992</th>
<th>1993</th>
<th>1995</th>
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</thead>
<tbody>
<tr>
<td>Estimated number of females</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kemaman</td>
<td>32-65</td>
<td>14-28</td>
<td>10-20</td>
</tr>
<tr>
<td>Kertih</td>
<td>21-43</td>
<td>25-51</td>
<td>12-24</td>
</tr>
<tr>
<td>Dungun</td>
<td>15-31</td>
<td>16-33</td>
<td>5-11</td>
</tr>
</tbody>
</table>

(Source: Department of Fisheries Malaysia; Sharma, unpublished data).
It has to be pointed out, that according to these data, during four years the estimated number of nesting females at the Setiu, Kemaman and Dungun Rivers has declined to the third of the former nesting population.

**Thailand:** Whilst Moll (1990) found 47 individuals of *Callagur* held in captivity at the aforementioned Klong La-ngu Fisheries Research Station, in February 1993 van Dijk (1996a; 1996b) estimated 80-100 adults. Since all adult *Callagur* anywhere in Thailand were caught when observed by Fisheries Department staff and transported to La-ngu Station, the increase would represent adults captured from the wild (van Dijk, 1996b). In any case there might only be a remnant wild population since the widespread destruction of mangrove habitats and nesting beaches. This and the consumption of eggs and adults seem to be the main causes of decline (Jenkins, 1995; van Dijk, 1996a).

2.5 Geographic trends:

There is no information about rate and extent of decrease in range area or number of sub-populations neither in Brunei nor in Indonesia or Malaysia.

**Thailand:** In the 70th, Nutaphand (1979) characterized *Callagur* to be a very rare species in Thailand. However, he indicated the species to be distributed in the southernmost provinces (Narathiwat and Pattani Provinces). Nowadays, the only population which is known, can be found on the above-mentioned La-ngu river. Thus, *Callagur* populations in Thailand appear to have declined from several populations of unknown size about 20 years ago to a single captive population of less than 100 adults, low numbers of juveniles and no confirmed reintroduced populations at present (van Dijk, 1996a).

2.6 Role of the species in its ecosystem

There are probably numerous interactions between *Callagur borneoensis* and its environment that are beneficial to the ecosystem and other species that depend upon it (Sharma, 1996a). During his dietary studies on the species he found out that the seeds of certain fruits (among these e.g. the mangrove species *Sonneratia sp.* and *Lauraceae sp.*) are able to germinate after passing through the gut of the animal. Thus, Painted terrapins are seed dispersers and since they rely on fallen ripe fruits, seeds are usually mature and ready for germination. This means that the species is able to carry ingested seeds up river, where they may germinate and establish themselves. Moreover, as *Callagur* eats large quantities of riverside fruits and leaves, it contributes to nutrient cycling in river systems (Sharma, 1996a).

2.7 Threats

First of all, it has to be pointed out that along with the giant softshell *Chitra chitra* and the other large river terrapins, *Kachuga trivittata*, *Batagur baska* and *Orlitia borneoensis*, *Callagur borneoensis* is one of the most threatened chelonians in the region and among the most threatened in the world (Moll, 1985). According to the 1986 IUCN Red List (Anon., 1986) the Painted terrapin had been classified as
"vulnerable". Since 1988 the species is classified as "endangered" by IUCN (Anon., 1988; Groombridge, 1993).

There are two main threats for *Callagur borneensis*: The consumption of eggs and adults and the destruction of its habitats. With an average size of 50 cm, *Callagur borneensis* is one of the largest turtles in the world which means a lot of meat to be exploited. Moreover, because the eggs also being very large (acc. to Moll (1978) they measure averagely 70.08 x 41.54 mm) they represent a high protein source and for that reason are very much sought after (Siow and Moll, 1982). As nesting is seasonal over-utilization in this period moves to low breeding-rates. In addition to this, exploitation of reproductive adults leads to lower production of juveniles, what means that the potential for recruitment to the population is reduced (van Dijk, 1996a; 1996b). Furthermore, as above-mentioned (see 2.2), the destruction of both mangroves and nesting habitats takes place more or less in the whole range. Since terrapins are quite selective in their diets, removal of riverine vegetation (mangrove or riparian forest) can potentially destroy feeding habitats (Sharma, 1996b; 1996c).

**Brunei**: The Bruneian Management Authority to CITES assumes that there is no trade in Painted terrapin (Wong, 1996). However, the fact that mangrove forests are under threat (see 2.2) means also a threat to the habitat availability of *Callagur*.

**Indonesia**: The eggs of large turtles were always widely harvested, whereas until 1990 there was no local use of adult large aquatic turtles, as the muslim people do not eat the meat. Nevertheless, workers from elsewhere have in recent years created a demand for adults in Indonesia (Moll, 1990). Furthermore there is evidence that the trade in *Callagur* for consumption is increasing rapidly. The Painted terrapin is harvested for meat in both Kalimantan and Sumatra. Yuwono (1994) even reported "truckloads" of turtles to be traded for food in Medan, North Sumatra. A lot of them were *Callagur* adults. The destruction of mangrove forests (see 2.2) reduces the number of available habitats. Furthermore, (as mentioned in 2.7) erosion leads to siltation of the streams and rivers (Moll, 1990). Since the Painted terrapin inhabits open water, this development is threatening the habitat, too.

**Malaysia**: *Callagur* is heavily exploited for their eggs which are reputed to have aphrodisiacal properties and appear to be showing serious declines in numbers (Moll, 1990). Although licensing agreements require licensed egg collectors to sell a certain percentage of eggs to the State Fisheries Departments for incubation at hatchingries, quotes for egg submission are often not met. Otherwise, poor enforcement of legislation and regulations hamper good conservation efforts. Since sale of eggs is still legal and open market prices are still higher compared to that offered by the various Peninsular States (e.g. at the east coast RM 1.80-1.90 in contrast to RM 1.50), there is no incentive for egg collectors to sell eggs to the State (Sharma, 1996b; 1996c). Furthermore, many nesting sites have either been totally lost (e.g. due to sand mining) or have been degraded. Industrial, resort and house development threatens the survival of the second largest Peninsular population at Paka river. Proposed development threatens to destroy the largest population in the country (at the Setiu river) and the third largest population at Linggi river is now under threat due to land reclamation and development projects (Sharma, 1996b; 1996c). The degradation of riverine habitats is a main threat to *Callagur* in Peninsular Malaysia, too. For
instance, removal of the riverside vegetation (due to revetment of river banks) renders the section of the river unproductive and of no use to terrapins (Sharma, 1996b; 1996c). Moll (1990) reports that along the Perak river much of the original mangrove vegetation has been cleared up in order to plant crops. Further problems are the separation of feeding and nesting sites due to larger dams (Moll, 1990) and incidental capture in fishing gear (Sharma, 1996b; 1996c).

**Thailand:** The main causes of decline seems to have been widespread destruction of mangrove habitat combined with opportunistic collection and local consumption of eggs and adults (van Dijk, 1996). Moreover the nesting beaches are destroyed by erosion and by sand removal for construction (Moll, 1990).

3. **Utilization and Trade**

3.1 **National utilization:**

First of all, it has to be mentioned that in areas with a Muslim population chelonians have not been traditionally harvested for food, even here the eggs of many species, particularly the large river terrapins, are and always have been collected in large numbers (Jenkins, 1995).

**Brunei:** According to Wong (1996) fishermen do not collect the occasionally encountered individuals. There is no knowledge about an eventual consumption of eggs.

**Indonesia:** As above-mentioned (see 2.7) the muslim people do not eat the meat but eggs were always widely harvested for consumption. Furthermore, in those areas which are being lumbered, non-muslim foreigners are brought in to do the work. Since these people typically eat adults, local people began to catch any turtles they could get in order to sell them to the logging companies (Moll, 1990).

**Malaysia:** At present there seems to be no exploitation of adult Painted terrapins in Peninsular Malaysia (Sharma, 1994b) as the majority of Malaysians do not eat turtles. However, a thriving industry has grown up around the collection and marketing of eggs. In 1979 *Callagur borneoensis* was yet reported to figure prominently in this industry (Tow and Moll, 1979). Furthermore live animal exporters' price lists for the late 1980s yet included *Callagur* (Moll, 1990). Throughout Malaysia the eggs are considered to be a delicacy and cost several times the price of a chicken egg. As there is a high demand, almost all nests are found and the eggs taken by egg collectors (Moll, 1990).

**Thailand:** Opportunistically, collection and local consumption of eggs and adults take place (van Dijk, 1996a).

3.2 **Legal international trade:**

The species is not protected in Brunei, Indonesia and Sabah (Malaysia). Therefore any trade from these geographic areas has to be considered as legal.

**Brunei:** As far as known to Wong (1996) there is no trade of *Callagur borneoensis* from Brunei.
Indonesia: Since the end of the 80s, export of large turtles for food from Kalimantan has apparently increased dramatically (Jenkins, 1995). An alarming trend in over-utilization of Callagur borneensis in Sumatra has also been reported from Yuwono (1994). Even if there was no specific information about the extent of trade in this species (since it is not yet listed under CITES) it has to be pointed out that according to the Agriculture & Fisheries Department (Bousfield, 1995), 95% of the food turtles imported to Hong Kong are from Indonesia. Likewise, statistics obtained from Census and Statistics Department of Hong Kong (Lee, 1996) turn out 84-95% of the imported turtles to be from Indonesia. According to these data, between 1993 and 1995 imports of live turtles from Indonesia to Hong Kong had a fifth-fold increase (Lee, 1996; see annex).

Malaysia: At present there is no data available on the trade in Callagur borneensis from Sabah.

Since Callagur borneensis is not covered under CITES there is no control of the trade in this species. However, main importing parties are assumed to be China and Hongkong (Reiman, 1994; Yuwono, 1994; Boedii, 1995; van Dijk, 1996a). There are at least 126 licenced traders in Hong Kong engaged in the trade in food-turtles. The following figure is based on data obtained from the Agriculture & Fisheries Department (Bousfield, 1995) and the Census and Statistics Department of Hong Kong (Lee, 1996) (see annex). The former aforementioned data seem to exclude turtles designed for the pet market (Lee, 1996).

![Figure 1: Food-turtle imports to Hong Kong from 1991 to 1994 (Source: Agriculture & Fisheries Dept., 1995) and Turtle imports to Hong Kong from 1993 to 1995 (Source: Census and Statistics Dept., 1996).](image-url)

Although the figures do not specify the species involved in this trade it is obvious that live turtles imported to Hong Kong from various countries, including Indonesia and Thailand (see annex) is highly increasing. When comparing the figures of 1993 and 1995, an eleventh-fold increase is seen (Lee, 1996). With regard to hard shell turtles
it has to be mentioned that the import rose from 10 % in 1993 to about 20 % of the total import in 1994 (Bousfield, 1995). According to the Hong Kong Agriculture & Fisheries Department (Bousfield, 1995) most of the turtles are re-exported to China, whereas the data of the Census and Statistics Department also turn out China to be the major destination of some of live turtles imported to Hong Kong, but Hong Kong itself to be the largest consumer (Lee, 1996; see annex).

3.3 Illegal trade:

As Callagur borneensis is not covered by any international agreement there are no information of illegal trade available at present.

3.4 Actual or potential trade impacts

Since 1988 Callagur borneensis has been cathegorized as "endangered" by IUCN. As the trade in this species has been pointed out as a relatively new phenomenon, this threat adds to that which was already existant before. The Painted terrapin is not protected under any international conventions. By all means listing in Appendix II would be the most important instrument to monitor and regulate the trade in this species on a sustainable yield basis.

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

There is no information about any captive breeding or artificial propagation outside of the countries of origin.

4. Conservation and Management

4.1 Legal status

4.1.1 National:

Brunei: According to the Management Authority Callagur is not included in the Wildlife Protection Act (Wong, 1996).

Indonesia: The species is not protected under the Act of the Republic of Indonesia on Conservation of Living Resources and Ecosystems 1990 (No.5). As a non-protected species it may be captured and exported if permitted under a quota system (Jenkins, 1995). The Scientific Authority considers the possibility Callagur to be listed as national protected species when they have got significant supporting data (Wirjoatmodjo, 1996).

Malaysia: In Peninsular Malaysia the Wildlife Protection Act, 1972 does not cover turtles. The Federal Fisheries Act (1963) allowed for the control of the exploitation of inland fisheries and turtles to be a prerogative of the various States. The right was primarily intended for management of marine turtles and Callagur. The new Fisheries act (1985) provides for similar action to be undertaken by the individual
States and has been adopted by Johore, Kedah, Melaka, Negeri, Sembilan, Perak, Penang and Perlis (Sharma, 1994b). The Painted terrapin is protected in the individual states of Peninsular Malaysia as follows (Sharma, 1994b):
- Perak: under the River Rights Enactment of 1915
- Kedah: under the Turtles Enactment 1972 and Turtles Rules 1975
- Terengganu: under the Turtle Enactment, 1951 and Amendments, 1987
- Pahang: under the Fisheries Enactment, 1937 and Fisheries Rules, 1938
- Johore: under Fisheries Act (1985) and Fisheries (Turtles and Turtle Eggs) Rules, 1984

In Sabah *Callagur* is not protected under the Fauna Conservation Ordinance in 1963 (No.11) which provides a legal framework for investigation, seizure and trade control relating to wildlife listed in its First Schedule (protected species); no non-marine chelonians are listed in this schedule (Jenkins, 1995).

In Sarawak the Painted terrapin is listed as a totally protected animal in Part I of the Ordinance's first schedule. Totally protected animals may be exclusive taken in exceptional circumstances for scientific or educational purposes (Jenkins, 1995).

A quite recent WWF Malaysia study on legislation effecting chelonian conservation and management in Malaysia (Gregory and Sharma, 1996) gives recommendations to the various State governments and management authorities to improve legislation protection turtles including *Callagur borneoensis* (Sharma, 1996a).

**Thailand:** The species is protected under the Wild Animals Reservation and Protection Act B:E: 2535 (1992) which prohibits all trade (domestic and export) in "Protected and Reserved" wild animals. The list of Protected animals is provided under a Ministerial regulation which includes all native chelonians (Jenkins, 1995).

4.1.2 International:

*Callagur borneoensis* is not covered neither by CITES nor by any other international protection.

4.2 Species management

4.2.1 Population monitoring:

There is no information on programmes to monitor the status of wild populations and the sustainability of offtake from the wild neither in Brunei nor in Indonesia or Thailand.

**Malaysia:** In Peninsular Malaysia, management of *Callagur borneoensis* falls under the jurisdiction of the Department of Fisheries. The collection of Painted terrapin eggs requires a license. Hatcheries have been established at the three major nesting sites (Setiu and Paka rivers in Terengganu and the Linggi river in Melaka) and licensed egg collectors are required to sell part of the collected eggs to the Department of Fisheries. Moreover, egg collectors are also required to furnish the Department with statistics on terrapin nestings annually and records are
kept by the Department. Where terrapins nest at other sites, data is gathered by the respective State Fisheries Department as well (Sharma, 1996a).

4.2.2 Habitat conservation:

**Indonesia:** The government has established a network of conservation areas that afford varying degrees of protection according to the type of reserve that a particular area of land has been designated (Ministry of Forestry, 1992). Nevertheless, there is no specific programme known to protect the habitats of Painted terrapin.

**Malaysia:** In order to protect the largest known breeding population remaining in Peninsular Malaysia and probably in the world, the coastal nesting beaches of *Callagur* at the Setiu river were proposed as a sanctuary to the State Government of Terengganu in 1990 (Moll, 1990). In 1994, Sharma proposed the establishment of the ‘Kuala Setiu Baharu Turtle Sanctuary’ to the Turtle Sanctuary Advisory Council of Terengganu (Sharma, 1994c). Based on research from 1993-1996 on the interactions between the terrapins and their habitats (diet, movement, nesting etc.), the uniqueness of the Setiu area and the local fishing communities living in the area, the ‘Setiu State Park, Terengganu’ is in process of being proposed by WWF Malaysia and the Department of Fisheries Malaysia to the State Government of Terengganu. This will encompass the river habitats, coastal beach nesting habitats and two nautical miles off the coast. The concept of the proposed Park shall be that of a ‘managed nature reserve/wildlife sanctuary’ and ‘multiple use management area’ (Sharma, 1996a).

4.2.3 Management measures:

**Malaysia:** The Department of Fisheries is giving some attention to conserving the Painted terrapin populations in certain states. At present there are five small hatcheries that buy Painted terrapin eggs from the collectors: Two in Terengganu and one in Melaka, Pahang and Kedah respectively (Sharma, 1994b).

During a survey in 1989, Moll (1990) visited the *Callagur* hatchery in Pulau Besar (Melaka) which is located on an island some 9 km E of Melaka town and hatches eggs of three species including Painted terrapin. He found five *Callagur* nests marked in the enclosure and was told that most of the *Callagur* eggs collected are from near Kuala Sungei Baru and the Sungei Linggi area. Besides, partial records from the Fisheries Department for this area state that in 1988, 54 nests containing 574 eggs and in 1989, 74 nests containing 787 eggs were taken. The hatching success at the hatchery was reported to be very low (<15%) probably due to the long distance which the eggs must be transported. However, all of the hatchlings were placed in sea water and all died (Moll, 1990).

In 1978 Moll (1990) worked with the Terengganu Fisheries Department to set up a hatchery for *Callagur* and *Lepidochelys* at Manok near where the Setiu River enters the South China Sea. This hatchery functioned until the early 80’s but problems with obtaining eggs from the local license holders caused it to be closed. However, in the 90’s this hatchery has been reestablished and is still functioning today. At the Turtle Sanctuary Advisory Council meeting in November 1996, the
proposal by the Department of Fisheries to not license out the Setiu nesting beach was approved. Thus, in 1997 all eggs laid will be collected by the Department and placed in the hatchery for incubation (Sharma, 1996a).

At the recent National Seminar/Workshop on Marine Turtle and Terrapin Management, which took place in October 1996 and was co-organized by WWF Malaysia, the establishment of a National Marine Turtle and Terrapin Trust Fund was proposed and agreed by the seminar as a resolution. The primary object is to support the State Governments in their efforts to meet competing market prices in buying terrapin eggs for the hatcheries. Furthermore, at the same seminar a resolution which calls for the national ban on the commercial exploitation (harvest, sale and consumption) of Painted terrapin eggs has been considered (Sharma, 1996a).

Thailand: As mentioned above the population on the Klong La-ngu is to be found in an enclosure at the Inland Fisheries Research Station and thus well documented. If management is improved, this captive population has great potential as a nucleus for reintroduction of the species. As several mangrove forests have been legally protected, reintroduction of Callagur should be possible (van Dijk, 1996b).

4.3 Control measures

4.3.1 International trade:

There is no information available regarding measures in place, in addition to CITES, to control the movements of specimens of Callagur across international borders.

4.3.2 Domestic measures:

There is little known regarding controls in the range states to ensure a sustainable harvest from the wild of Painted terrapin. Nevertheless Moll (1990) pointed out that Malaysia is today one of the world leaders in the conservation of freshwater turtles. He reported e.g. that to obtain the census of egg collectors on Perak River, Department of Wildlife personnel visited each collector daily throughout the nesting season to check the numbers of eggs collected at each beach.

5. Information on Similar Species

Callagur borneensis is sometimes confound with Batagur baska (River terrapin). As Batagur has only four claws on each forelimb whereas Callagur has five, this is a significant difference. Further, Callagur borneensis differs from the genus Kachuga by the elongated neural bones and narrow jaw surfaces. (Wermuth and Mertens, 1961; Pritchard, 1979). Characteristics to separate Callagur borneensis from Orliitia borneensis are the large, blunt head of Orliitia (as opposed to the rather small, narrow and strongly pointed head of Callagur) and its mushroom-shaped vertebral scutes (square or fused without a trace of their original shape) (van Dijk, 1996b).
6. Other Comments

All range states of *Callagur borneoensis* had been contacted on 18 June 1996. Besides, a copy of the 1. draft of the proposal have been sent on 24 September 1996. Up to 16 December 1996 replies have been received from Brunei and Indonesia. Accordingly, Brunei appears as a co-proponent of the present proposal and Indonesia supports it (see annex).

7. Additional Remarks

Assumed to be the main consuming parties, the following countries had also been contacted on 18 June 1996: China, Japan and Korea. Furthermore, the Agriculture & Fisheries Dept. of Hong Kong had also been consulted. On 25 September 1996 a copy of the first draft of the proposal has been sent to the afore-mentioned assumed consumer parties, as well. Replies have been received from Hong Kong, Japan and Korea (see annex).


Sharma, D.S.K. (1996a). In litt. to S.A. of F.R.G.


Yuwono, F. (1994). In litt. to S.A. of F.R.G.
Thank you for your letter of 8 October 1996, inviting us to comment on your draft proposal on listing *Callagur borneoensis* on Appendix II of CITES.

Please be kindly informed that it seems that the trade volumes of food turtle imported to Hong Kong between 1993 and 1995 in your proposal, which were supplied by the Agriculture and Fisheries Department of Hong Kong, exclude turtles designated for the pet market.

Statistics obtained from the Census and Statistics Department of Hong Kong are attached to this letter for your reference (two pages: one is figures of import to and re-export from Hong Kong by value (Hong Kong dollar); the other one is the same but by weight (kilogram)).

Some of the preliminary analysis of the aforementioned statistics, which may be relevant to your proposal, is as follow:

- Live turtles imported to Hong Kong from various countries, including Indonesia and Thailand (both range states for *Callagur borneoensis*), is increasing. When comparing the figures of 1993 and 1995, an eleven-fold increase is seen. Imports of live turtles from Indonesia to Hong Kong between the same period had a five-fold increase.

- While China is the major destination for re-export of some of live turtles imported to Hong Kong, Hong Kong itself is the largest consumer.

It would seem that more documentation is needed to confirm the assumption that China and Hong Kong are the main consuming countries of *Callagur borneoensis*.
MINISTRY OF ENVIRONMENT

Government Complex II, Kwacheon 427-760, Republic of Korea
Phone: (22-2) 504-924 Fax: (22-2) 504-9206 Internet: envirot@knet.co.kr

Dr. Blanke
Head of German Scientific Authority to CITES
Böllstr., Konstantinstr. 110
53177 Bonn
Germany
Tel: (0228) 9543-440
Fax: (0228) 9543-470

August 27, 1996

Dear Dr. Blanke:

Regarding your letter of June 18, 1996 on the proposal to include Callagur borneensis (origins from Indonesia) in the Appendix II of CITES, the Republic of Korea support this proposal in principle.

The species is classified as endangered by IUCN and, in recent years, exports of the species are increasing for food consumption. In this regards, we fully recognize the needs to protect the species and also would like to inform you of the fact that we have no data about the trade of this species.

However, when considering your proposal, we suggest you to consider views of the countries such as Malaysia, Indonesia, and Thailand.

Sincerely yours,
Jae Yoon, Ko
Director
Global Environment Division
Dear Dr. Blanke,

Thank you for your telefax and the mail-dated June 18, 1996.

We enquired the members of our Scientific Authorities regarding this issue. Regrettably, we do not possess any specific data on the species Callagur borneensis (Painted terrapin), either biological or trade wise, and hence are not in a position to provide you with any further information.

Further, the Government of Japan has decided to decline requests to support proposals to amend CITES Appendices before it sees detailed supporting statements to those proposals, unless it has, at the time of receipt of such requests, substantial information on the species concerned and is convinced that the listing of such species would meet the new criteria (Resolution Conf. 9.24).

We would also prefer to see such requests to support amendment proposals coming from range States rather than from States not directly involved in the trade in species concerned. Incase where such a direct proposal from the range States are not possible, we would at least like to see the evidence that the range States have been contacted (Resolution Conf. 8.21) and that they are in agreement with a third party submitting the proposal.

Consequently, the Government of Japan cannot become a co-proponent of the proposal. Nevertheless we are ready to support the proposal at the time of discussion during the next COP meeting if the data in the supporting statement justify the listing of the species in CITES Appendix II under Resolution Conf. 9.24.

We thank you for bringing the subject to our attention.

Sincerely,

Shinji HIRUTA (Mr.)
Assistant Chief
Import Division, MITI

C.C. : CITES Management Authority of Brunei Darussalam
      CITES Management Authority of China
      CITES Management Authority of Indonesia
      CITES Management Authorities of Malaysia
      CITES Secretariat
Proposal to include callagur borneensis in the Appendix II of CITES

Thank you for your letter of 18 June 1996. I am sorry for the delay in this reply as I have just got hold of a copy of the TRAFFIC Report mentioned in your letter.

According to our record, the main sources of food turtle are Indonesia (mainly Cuora ayamaka and Chelydridae grandis) and Thailand (Trionyx castaneus and T. sinensis). However, there was no record of importation of Callagur borneensis from Indonesia. In addition, it seems that there is no solid information of the “large scale export for food” of Callagur borneensis in the TRAFFIC report and that the animal is subjected to heavy unsustainable exploitation for commercial purposes. Such information would be necessary if a proposal to list the turtle in CITES Appendix II is to be made.

With best regards,

Yours faithfully,

(P.M. So)
for Director of Agriculture & Fisheries

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By air mail

AGRICULTURE & FISHERIES DEPARTMENT
Canton Road Government Offices
939 Canton Road
12th floor
Kowloon, Hong Kong

23 August 1996

R BENNESAM FUR NATURSCHUTZ
German Scientific Authority for CITES
Postanschrift
B.P. Konstantinoven, 110, 53179 Bonn
Germany

Dear Sir,

Information on Asian turtle species

Thank you for your enclosure letter dated 14 December 1994 concerning the captioned subject.

As Callagur borneensis has not yet been listed under CITES we have no specific information about the extent of trade in this species of painted terrapin.

As far as Hong Kong is concerned all food turtles are imported by air and 90% of these are imported from Indonesia. The recorded and recent extent of this trade is outlined in enclosure I. Although we don't have the exact figures most of the turtles are then re-exported or transhipped to China by motor vehicles or by air.

According to my information the turtles are mainly used to make a tonic soup for human consumption.

The trade has always existed except that the trend has increased in late in line with the opening up and increased affluence in China, particularly Southern China.

It is not possible to provide you with the addresses of the major Chinese importers. A list of the licensed food turtle traders in Hong Kong is however copied at enclosure II.

I hope that this information may be of some help to you.

Yours faithfully,

(R.B. Boonfield)
for Director of Agriculture & Fisheries
Dr. Blanke
Head Scientific Authority to CITES
Bundesamt für Naturschutz
BFN, Konstantinstr. 110, 53179 Bonn
Fax: 0228-9543-470

Dear Dr. Blanke,

Thank you for your letter of September 24th, 1996, with your draft proposal and your letter of November 11th, 1996. We are sorry for this late answer of your inquiry due to waiting information from other agencies.

In principle we are agree to support your proposal for inclusion of Collagur borneensis in the Appendix II of CITES. This is because although we have no scientific data we got oral information from Ms. Bonadi and some other fellows that there is tendency of increasing trade/export without limitation. Since this is due to the increasing demand from a big country (China) with highest population, the trade should be under control. The best way is by inclusion in the Appendix II of CITES.

Anyway as co-proponent we will collect data to support your proposal for CITES conference.

Sincerely,

Sudjana Wirjoatmodjo
Director

AGRICULTURE & FISHERIES
DEPARTMENT
Canton Road Government Offices
393 Canton Road
Kowloon, Hong Kong

17 October 1996

Dr. Blanke
Head of German Scientific Authority to CITES
Bundesamt für Naturschutz
BFN, Konstantinstr. 110, 53179 Bonn
Germany
(Fax: 228-9543-470)

Proposal to include Collagur borneensis in the Appendix II of CITES

Thank you for your letter of 23.9.1996.

We consider that there should be solid information, which clearly indicates existence of unsustainable exploitation of C. borneensis for international trade, to substantiate your proposal to list the species in CITES Appendix II. It appears that in your proposal, such information is not available.

Further, we share the view of M.K. of Japan that support for amendment proposals should be solicited from range countries rather than those not involving in the trade in species concerned.

Yours faithfully,

CY. K. CHAN
Director of Agriculture & Fisheries

All replies must be addressed to Director of Agriculture & Fisheries
MINISTRY OF FORESTRY OF THE REPUBLIC OF INDONESIA
DIRECTORATE GENERAL OF FOREST PROTECTION AND
NATURE CONSERVATION
Gedung Pusat Kabupaten Manggala Wanabakti Blok IV Lt. 8 Jl. Jend. Gatot Soebroto Jakarta Pusat 10270
Tel. (021) 5770112, 5770113, Fax. (021) 5774818 Telex: 45996 DEPHUT IA

Jakarta, November 1996

To: Dr. Blanke

German CITES Scientific Authority
Bundesamt fur Naturschutz
Konstanstr. 110, 53179 Bonn
Fax No.: (228) 9541470

RE : Proposal to include Callagur borneensis in the CITES Appendix II.

I am writing in referring to your proposal to include Callagur borneensis in the CITES Appendix II. I am sorry for the delay of the reply.

Despite the lack of scientific information on the species, our believe is that the population status of this species is very rare. It is due to the fact that according to the traders, it is getting more difficult to obtain the specimen from the wild.

It is believed that the population is declining because of the capture from the wild and may be degradation of the habitat. We are now proposing this species to be included in the protection status by Indonesian law. Because of the declining population, Indonesia supports its inclusion in CITES Appendix II.

While still looking for other supporting information on this species, Indonesia supports the proposal and invites the German CITES Management Authority to go ahead with its proposal, taking into account comments from other range states.

I hope this short information can be of some use.

Yours sincerely,

Dwiastmo Siswomartono
CITES Management Authority of Indonesia.

Cc: - Puslitang Biologi LIPI (Scientific Authority)