Chapter 06

Distribution and Status of the Endangered River Terrapin *Batagur baska* (Gray) in the Indian Sunderbans

Kaushik Deuti
Zoological Survey of India
Herpetology Division, 27 Jawaharlal Nehru Road,
Calcutta: 700016

Introduction

The River Terrapin (*Batagur baska*) has been one of the most exploited estuarine turtles over the centuries. This terrapin inhabits the lower reaches of the major rivers of tropical Asia and is reported from Vietnam, Cambodia, Sumatra (Indonesia), western Malaysia, Thailand, Myanmar, Bangladesh and eastern India.

Morphology and Taxonomical Characteristics

Common English Names

River terrapin, Batagur turtle, Four-clawed terrapin.

Vernacular Names

Bali katha (sand turtle), Bala katha (girl turtle), Boro katha (big turtle) and Ram katha (huge turtle).

Size

up to 600 mm.

Morphology

Head small, forehead covered with small scales, snout upturned, upper jaw notched. Carapace domed and heavily buttressed. Scutes smooth, marginals unserrated in adults. In juveniles, marginal scutes are modified into spine-like projections and shells are comparatively more flat. Fontanelles present in both carapace and plastron and carapace possesses a low interrupted keel, all of which disappear with growth. Vertebrals broader than long, nuchal small, broader than long. Plastron long, truncated anteriorly and notched posteriorly. Four claws on each forelimb.

Colour

Carapace olive-grey or brown, head of the same colour but lighter on the sides. Plastron yellow, unpatterned. When breeding, skin at the back of the head and on the forelimbs in the males turn bright red and the area around the nostrils turn pale blue (Das 1995).

Sexual Dimorphism

Females are larger, attaining 600 mm in carapace length, while males reach up to 500 mm. Females also have a proportionately higher shell, longer plastron and shorter tail besides being lighter coloured (Das 1995).

Habit and Habitat

Habitat

The river terrapin occurs at the mouths of large rivers (estuaries) (Plate 6A), canals and coasts near river mouths that are under tidal influence and are having some mangrove vegetation.

Diet

Fruits of *Sonneratia*, a mangrove plant is an important food item. Leaves, stems and fruits of other mangrove plants are also consumed besides pelecypod mollusks, crustaceans and fish. The double serrated beak on the upper jaw cuts up the plant materials and functions in the manner of a rachet to permit large leaves to be progressively moved into the oesophagus. Most feeding occurs at high tide when leaves and fruits from low-hanging branches become more readily accessible from the water (Das, 1995).

Reproduction

River terrapins nest on the sandy coast in the Sunderbans of India and Bangladesh and also in Myanmar due to the absence of sand banks up the course of the river. In Malaysia, these terrapins travel 80-95 km up river from foraging grounds to nest on sand banks and sandy islands where they nest in groups, 2-23 m from the river bank. A body pit is excavated, using both the fore and hind limbs and about 75 minutes is spent hiding the nest site (Moll 1980). Clutch size ranges from 5-38. However, in Myanmar river terrapins lay 50-60 eggs in three clutches between January to early March generally during full moon but sometimes during the day (Maxwell 1911). Eggs are elongated and brittle-shelled, averaging 65 X 40 mm and weighing 64g. Eggs take 66-81 days to hatch in Malaysia (Moll 1980). In the Indian Sunderbans, a clutch comprises 19-37 eggs, averaging 68 X 40 mm and weighing 70g. Eggs on the sandy beaches in the Sunderbans on the Bay of Bengal coast are laid between the end of February and early March in a flask-shaped nest 300-400 mm deep about 25-160 m from the high-tide line. The incubation period ranges from 61-68 days at 24-33ºC. Mean carapace length is 60 mm and weight of hatchlings is 45 g (Ghosh and Mandal 1990).

Distribution and Status

Distribution and Status outside India:

The distribution and status of this species outside India is not well known. In Malaysia, this terrapin is found only at the mouth of large rivers. The decline in its population in Perak rivers was documented by Loch (1950), Mohd Khan (1964), Moll (1980) and Siow and Moll (1982). Habitat destruction is a very important factor for the decline of this terrapin in Malaysia. Wirot (1979) pointed out that the Thailand population is heavily exploited and possibly extinct now. Maxwell (1911) reported its numbers as declining at the mouth of the Irrawaddy River in Myanmar where it is presumed to be extinct now. In Bangladesh, the species was discovered much later in 1982 (Khan 1982).

Distribution and Status in the Sunderbans of Bangladesh and West Bengal:

The River Terrain is restricted to the estuary of the Ganga and Brahmaputra, which forms the largest mangrove swamp in the world – the Sunderbans. It nests in the southern part of Chandpai and Sarankhola Ranges of Bangladesh Sunderbans, on the Sipsah, Katka and Kaga creeks and on Kalichar and Passur Island. The species is also suspected to occur in the Inani area of Teknaf, Cox Bazar district (Khan 1982). Specific localities in the Indian Sunderbans where the species nests are the sandy beaches along the West Bengal coast: Kalash, Mechua, Kedo, Nagbarachar, Chaimari and Narayantala (Das 1995 and personal observations). The species also occurs in the Bhitarkanika area (Brahminy-Baitarani delta) and at the mouth of the Subarnarekha River in Orissa (Das 1995).

Threats and Conservation Value

River terrapins are caught for food in the Sunderbans of Bangladesh and India. In Bangladesh, they are caught during the monsoons from May to August using hooks baited with *Sonneratia* fruit. The Hindus consume the flesh, since Muslims consider the flesh of all amphibious vertebrates as 'haram' (unclean). A big terrapin over 15 Kg will sell for up to Rs 500. However, the eggs are relished by all communities and predation of the nests in the Sunderbans is a major threat to the species. In the Sunderbans of West Bengal, the river terrapin is caught in 'bagda jal' (tiger prawn nets). These are long, funnel-shaped nets, the wide mouths of which are strung between two long poles anchored in the river bed and facing the direction of the current. Sometimes, these turtles are kept as pets and survive on a variety of plants for over 20 years (Das 1995).

Batagur turtle was formerly abundant at the mouth of the Hooghly / Ganga river (Gunther 1864) but they were captured in large numbers in the mid 19th Century and transported to Calcutta for making turtle soup as a substitute for sea turtles especially in those months of the year when sea turtles were not available. Previously, the fat was in much demand for the manufacture of soap.

Presently the species is listed as critically endangered (www.iucnredlist.org) in the IUCN Red Data Book, protected under Schedule I of the Indian Wildlife (Protection) Act, 1972 and included in Appendix I of CITES indicating that all forms of exploitation is banned.

Research and Management Requirements

Very little surveys and research have been done on the Batagur terrapin in the Indian Sunderbans. The first survey was done by Indraneil Das in the 1980s and then again by S. Bhupathy in 2000. The West Bengal Forest Department personnel however got three nests of this River terrapin while collecting eggs of Olive Ridley sea turtles on the sandy beaches along the coasts of the Sunderbans between the end of February and early March, 1988. They reared these eggs in their hatchery at Sajnekhali in the Sunderbans. The incubation period ranged from 61-68 days at 24-33ºC.

As this terrapin species has become very rare, there is urgent need of further research both in the wild and in captivity. Hatcheries need to be constructed in the Indian Sunderbans where the species should be reared and later released into the wild to build up a viable population in future.

Concluding Remarks

The species has become endangered due to exploitation for its flesh and fat, collection of its eggs for human consumption and loss of nesting beaches.

Although there is no record available regarding the population density and abundance of this species in the entire Sunderbans, over-consumption has led to the rapid decline of the Batagur River Terrapin in the Indian Sunderbans to the point that they are hardly sighted now.

References

Das, I. 1995. *Turtles and Tortoises of India*. Oxford Univ Press, Bombay. 174 pp.

Ghosh, A and N.R. Mandal. 1990. Studies on nesting and artificial hatching of the endangered River Terrapin, *Batagur baska* (Gray) in the Sunderbans Tiger Reserve, West Bengal. *J. Bombay Natural History Society* **87 (1):** 50-52.

Gunther, A. 1864. *Reptiles of British India*. Robert Handwicks, London. 452 pp.

Khan, M.A.R. 1982. Chelonians of Bangladesh and their conservation. *J. Bombay Natural History Society* **79 (1):** 110-116.

Loch, J.H. 1950. Notes on the Perak River turtle. *Malaysian. Nat. J.* **5:** 157-160.

Maxwell, F.D. 1911. *Reports on inland and sea fisheries in the Thongwa, Mayaungmya and Bassein districts and the turtle banks of the Irrawaddy division*. Government Printing Office, Rangoon. 57 pp.

Mohd Khan, B. 1964. A note on *Batagur baska* (The River Terrapin or Tuntong). *Malaysian. Nat. J.* **18:** 184-189.

Moll, E.O. 1980. Natural history of the river terrapin, *Batagur baska* (Gray) in alaysia (Testudines: Emydidae). *Malaysian. Nat. J.* **6:** 23-62.

Siow, K.T. and E.O. Moll. 1982. *Status and conservation of estuarine and sea turtles in West Malaysian waters*. pp. 339-347. *In*: Biology and Conservation of sea turtles. K. Bio randal (Ed.). Smithsonian Press, Washington D.C.

Wirot, N. 1979. *The Turtles of Thailand*. Farm Zoological Garden, Bangkok. 42 pp.

Plate 6

(A)

(A) *Batagur baska* on a beach. Photo by Dr. Indraneil Das