FRESHWATER TURTLES AND LAND TORTOISES OF DHUBRI DISTRICT

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Turtles are one of the oldest reptiles of the world, which evolved around 200 million years ago. Interestingly, they remained practically unchanged in their basic characters since the time of their evolution. But there are several species and subspecies within the group. They belong to the order Chelonia which include hardshells (tortoises, terrapins) and softshell turtles. Turtles differ from other reptiles by having their vital organs encased in shell.

In India, the region wise distribution of turtles can be demarcated into five regions, namely, (i) Gangetic plains (ii) dry land and plains of Indus (iii) the hill country and moist forest of Northeastern India (iv) the rain forests of Western Ghats and (v) hill ranges and riverine plains of east coast. Gangetic plains include the plains of Northern India, Brahmaputra Valley and Mahanadi.

The great diversity of aquatic turtles alongwith the largely semi-aquatic and hill dwelling species in the north eastern and eastern plains are found within the flood plains of Brahmaputra, Ganges and the Mahanadi. Vast stretches of riverine and lake systems of these plains form ideal habitats for turtles.

About 55 kinds of turtles of 46 species representing 25 genera are found in the Indian region (Encyclopedia of Indian Natural History, BNHS).

Although quite a good number of studies have been done on Indian turtles (Das 1985, Daniel 1983, Bhupathy *et al* 1992, Chaudhury & Bhupathy 1993) yet the Northeast region have not been explored adequately and many districts like Dhubri and few others have remained untouched.

Turtles survey was conducted in Dhubri district from 1994 to 1997. Survey method includes spot verification and identification of species either from living one or from shells collected from forests, hills and river banks. Some information contained in this article have also been gathered from the well experienced fishermen and tribal communities who have authentic first hand knowledge on the subject.

Dhubri district is located at the extreme west of Assam and is approximately within the latitude 25°28' N to 26°22' N and longitude 89°28' E to 90°12' E. The district is surrounded by West Bengal and Bangladesh on the west, Goalpara district and Meghalaya on the east, Kokrajhar district on the north and Meghalaya and Bangladesh on the south.

The river Brahmaputra flows through the middle of the district in an east to west direction. Tributaries of the Brahmaputra, namely, Gadadhar, Gangadhar, Silai, Jinjiram, Kallo, Tipkai and Gaurang also meander through the district.

Dhubri district has an unique topography of rivers, wet lands, river valleys, lakes, highlands and hill forests. Important hill forests are Chakrashilla, Sonamukhi, Tokrabandha, Dudhnath and Chandardings.

Because of these diverse environmental areas of moist forests, wetlands, rivers and hills, the district provides ideal niches for different species of turtles.

SOFTSHELL TURTLES

Six species of softshell turtles are found in India (Das 1985). Three species of softshell turtles were located in Dhubri district during the present study.

Narrowheaded softshell turtle *(Chitra indica)*

This species was identified by me on the south bank of Brahmaputra near Fakirganj ferry ghat.

The turtle was caught by fishermen in the river Brahmaputra. It was a medium size Narrowheaded softshell turtle with carapace length 75 cm. It is an aggressive turtle and tried to bite anybody approaching within the range of its protruding neck.

Its carapace was oval and not much raised. The colour was greenish black and full of designs with different shades of greenish black. The head of the species was small and elongated. The eyes were prominent and situated closer to the nostrils. A "V-shaped" mark was present on the neck and the plastron was white.

It is a vulnerable species as per the Wildlife Protection Act Schedule-IV.

Indian peacock softshell turtle *(Trionyx hurum)*

This species is also found in the river basin of the Brahmaputra and its tributaries in Dhubri district. I have seen this species in several markets inspite of the fact that the species has been listed in Wildlife Protection Act Schedule -I.

The salient features of these turtles are their oval and low carapace around 58 cm. in length. Head is comparatively large and coloured dark green with numerous yellow spots which are prominent behind the eyes. There are four eyelike markings on the carapaces with light yellowish shade. This species is also aggressive when taken out of the water.

Indian softshell turtle *(Trionyx gangeticus)*

This is the most common species of softshell turtle available in the Brahmaputra as well as its tributaries and in the wetlands of the district.

It is an aggressive species having low oval carapace with long snout on a comparatively larger head. Its carapace length was about 60 cm. and it had greenish with black and yellowish marks. One of the prominent features of this species is the presence of conspicuous black marks on the upper surface of the neck. It is a carnivorous species fond of rotten fish and flesh. Its eggs are spherical measuring around 2.2 cm. in diameter. Softshell turtles of this district have been com-

Nature's Beckon, Ward No.1, Dhubri, Assam.

mercially exploited with impunity till recently, but have largely been checked by the conservation activities of the NGOs.

Pond turtles *(Emydidae)*

Pond turtles belong to the group of hardshell turtle. The characteristic features of this group are that their shells are covered with scutes and the head and limbs are retractable. The sides and posterior part are made of shields and the top of the head has a lining of smooth skin, limbs are clawed and webbed. The neck is usually shielded and the digits are variable and paddle shaped. They survive on diet of small plants and animals. Their name pond turtle does not confine them to ponds only. They live in rivers, wetlands and hill streams as well.

Indian roofed turtle *(Kachuga tecta)*

This species is identified by the elevated carapace with flat striped neck and yellow spots on the limbs and neck. Digits are well webbed. Carapace length is approximately 22.9 cm. and is blackish brown, with a red keel. The plastron is pinkish.

These species are generally found in typical habitats (Oxbow lakes) in Dhubri district which we are formed by the change course of rivers. These habitats are flooded during monsoon and have growth of shrubs in shallow water. I have located them in the Makrijhara, Panbari and Bagribari area of Dhubri district. A shell collected from Makrijhara had a straight carapace length of 6.3 cm., carapace with 5.1 cm and shell height 3.5 cm.

Crowned river turtle *(Hardella thurjii)*

This species is generally found in river bays where the river is almost stagnant, or in isolated river lagoons, undisturbed by humans. The plastron with black blotches, black head with orange yellow stripes and yellow margin on the sides of the carapace immediately make them known as crowned river turtle. They subsist on aquatic vegetation and are non aggressive in nature.

Brown roofed turtle *(Kachuga smithii)*

This species is generally found in rockey riverine habitat having clear water. I have observed them in Brahmaputra along the foothills of Chandardinga hills of Dhubri district.

I have found two carapaces of brown roof turtles near Chandardinga. The absence of plastron indicated that they were killed by fisherman.

Measurements of two carapaces were, length 18.5, 9.4 cm. and width 15.4, 7.0 cm. respectively.

Brown roof turtles are recognised by their blackish brown keel on the carapace and similar spot on the head near the eyes. Confirmatory identification mark is the presence of bottle neck-shaped fourth vertebral scute. This species survives chiefly on insects although under compulsion they feed on vegetations as well.

Three-striped Roof Turtle *(Kachuga dhongoka)*

This turtle was found in Gangadhar river at Golokganj town of Dhubri District. Gangadhar river is known as Sonekosh in Kokrajhar District which is the northern boundary of Dhubri district. The river Sonekosh originates in Bhutan and flows over Kokrajhar and Dhubri district to unite with the Brahmaputra near Dhubri. This turtle is brownish black with three black stripes one on the vertebral area and one on each side. The carapace length of the adult turtle varies from 26 to 39 cm. Plastron is yellow reddish in adults. The carapace of these turtles are not much raised but the median keel is prominent. They have brownish head with white stripes on each side.

Tricarinate hill turtle *(Melanochelys tricarinata)*

This turtle has not been seen by the writer in Dhubri district, but by seeing the colour photographs of this turtle, tribal villagers of the district have reported that they were sufficiently available in the past and a few are still surviving. Importance may be given to their reports because there are abundance of deciduous hill forests which are ideal habitats for Tricarinate Hill Turtle. Moreover I have seen a carapace of this turtle in the collection of curios of Shreemati Nilima Barua, Rajkumari of Gauripur state which is adjacent to Dhubri town.

Asian leaf turtle *(Cyclemys dentata)*

This species is conspicuous by having a tail about one and half inches in length. It has a flattened carapace with slight keel and brown in colour. Radiating black lines are present below in each scute. Digits are unwebbed and bandlike scales are present on the forelimbs. Top of the head is brown but the neck is grey. Upper jaw is hooked.

During the course of our survey at Chakrashilla Wildlife Sanctuary one of the team members Sri Kulojyati Lahakar found it. Further study of its habitats revealed that a good number of these turtles have found their niches in one of the perennial springs of Chakrashilla known as Mauriajhora.

They were found loitering on the edge of the spring, with growths of green vegetation, and eating rotten figs which accumulated on the edge. One specimen was measuring straight carapace length 8 cm., carapace width was 7.4 cm. and shell height 3 cm., and it has a 2.3 cm. tail.

TORTOISES (TESTUDINAE)

Tortoises have strikingly convex carapace covered with scutes. Their heads are covered with shields. Head and limbs are retracted as defensive mechanism. Limbs are scaled digits remain from and are provided with strong nails.

Elongated tortoise *(Indotestudo elongata)*

Only one species of tortoise has been found by me in Dhubri district which is very interesting. In July 1995 I got a carapace on the forest floor of Chakrashilla Wildlife Sanctuary. This was a very unusual carapace which I had never seen before. On tallying with coloured photographs of tortoises it almost looked like Travancore tortoise *(Geochelone forstenii);* on careful observation of the carapace further revealed that the nuchal was absent (absence of nuchal is one of the identification mark of Travancore tortoise). Confusion arose because this species was said to be present only in the Western Ghats region of Kerala, Karnataka and Tamil Nadu. This species is an example of Malaya element in the fauna of Western Ghats. But considering the habitat of Chakshilla which is mostly sal

forest, there is a possibility of the carapace being that of an Elongated tortoise. The colour of the carapace tallies more with that of the Elongated tortoise but the black markings on the scutes and the pattern of the scutes are more akin to that of Travancore tortoise.

Dr. Indraneil Das of Centre for Herpetology, Madras Crocodile Bank Trust, on seeing a photograph of the carapace, confirmed that the carapace was that of an "Elongated Tortoise (now called *Indotestudo elongata*), which occasionally lack the nuchal (or cervical) scute, making them superficially similar to *I. frostenii*, the Travancore Tortoise".

After receiving above confirmation, two more shells of Elongated tortoise were located in the same forest which had nuchal scutes. One of the shells was very small with plastron attached to the carapace. The black blotches on the plastron further confirmed the species to be an Elongated tortoise.

Dr. Indraneil Das wrote : "*I. elongata* has been reliably recorded from North eastern India, but your new record is interesting, as it is the first one in over 50 years, plus from a new locality".

Some of the old tribal villagers of Chakrashilla told me that this species of tortoise was plentiful in the past. They used to hunt them for a sumptuous dinner. Villagers humorously mention them as pillows of porcupine because they often found the shell inside the burrows of porcupine. The fact is that the porcupine gnaws the shell of tortoise and bones of other animals for their calcium and time contents which help in the growth of their quills.

In July, 1996 I saw a few very young Elongated tortoises on the wet forest floor. One of these young tortoises had no black blotches on the carapace but on the plastron these were prominent. The straight carapace length was 7.5 cm., width 5.5 cm., height 3.3 cm., and the length of the plastron was 7 cm.

THE ROLE OF TURTLES IN THE ECOSYSTEM

Turtles are slow animals. They mostly feed on dead, injured or diseased animals and hardly harm healthy ones. Thus they play an important role of scavengers in the aquatic ecosystem. Soft shell turtles are useful carrion eaters. Turtles are one of the many species of reptiles which help in maintaining a healthy community of organisms by removing unhealthy ones from the ecosystem. Carnivorous turtles feed on snails and insects that spread disease in human beings and livestock and herbivorous turtles feed on weeds. Thriving on scrubland with poor quality forage, tortoises convert useless fodder into protein rich biomass making them available to the next carnivorous trophic level including the community of men.

CONSERVATION OF TURTLES IN DHUBRI DISTRICT

Even though some of the turtles species have been included in the schedules of Indian Wildlife (Protection) Act, 1972 yet the illegal turtle trade was going on in Dhubri district till the end of 1988.

Due to the intervention of Nature Beckon, a non governmental organisation (NGO) working for the conservation of Wildlife and sustainable community development, the turtle trade has been checked in the district to a great extent. But clandestine

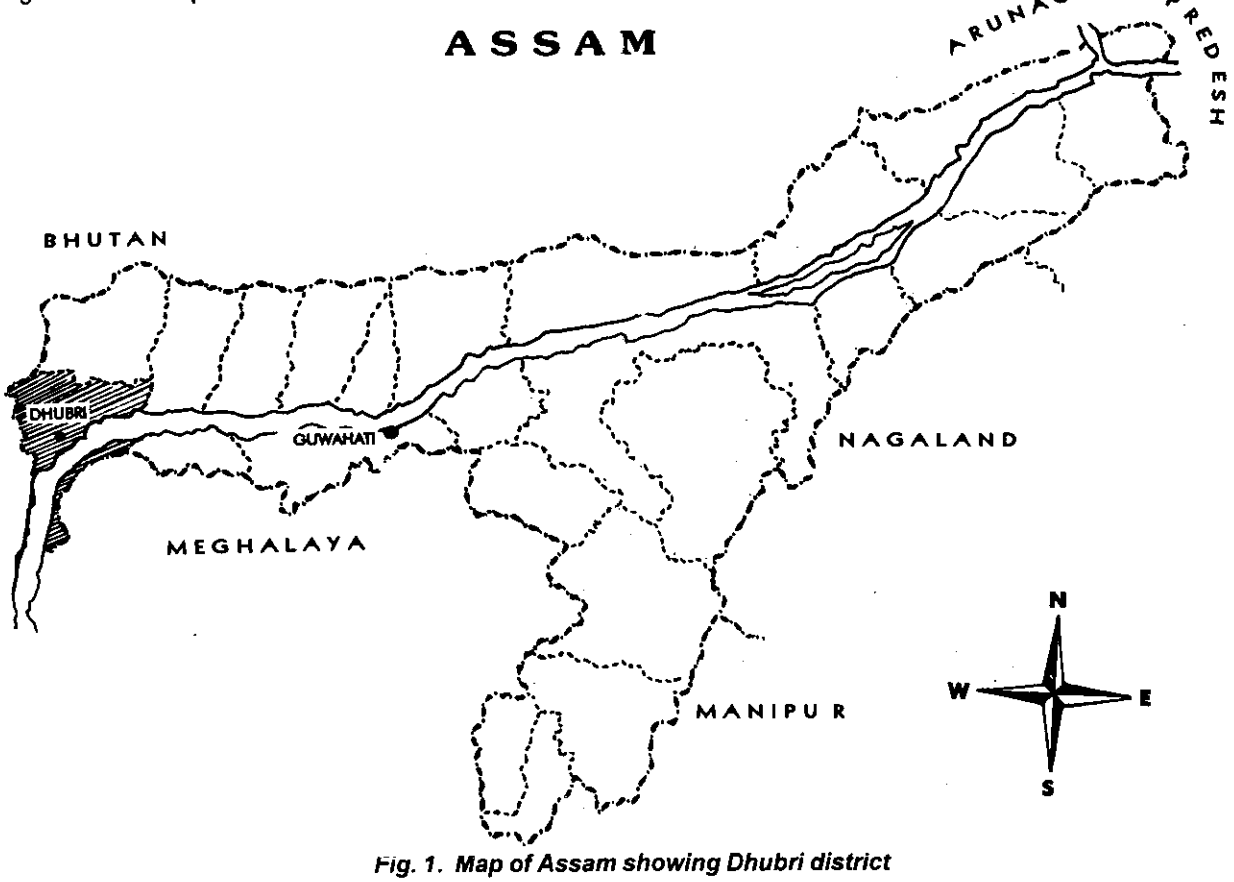

Fig. 1. Map of Assam showing Dhubri district

poaching and selling are prevalent in some interior villages due to enormous growth of fisheries operation in all kinds of water bodies, wherein turtles are considered detrimental to fish resources.

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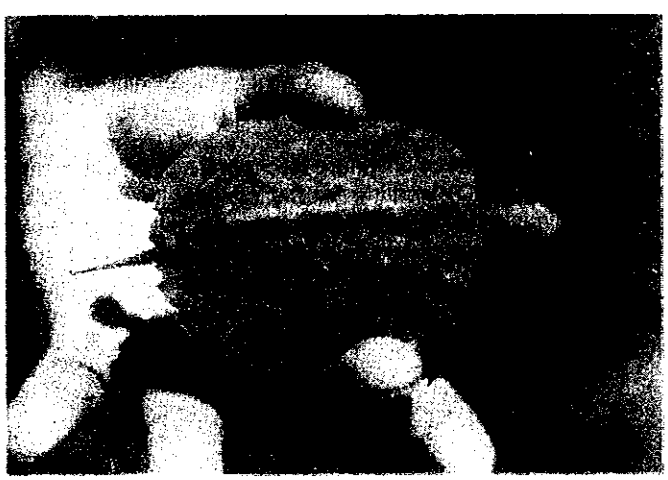
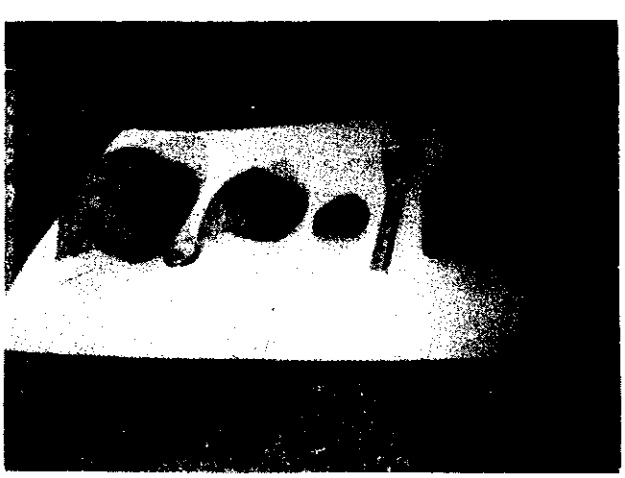
Indian soft shell turtles found at Dhubri district



A young Asian leaf turtle of Chakrashila Wildlife Sanctuary

Ventral view of a young Asian leaf turtle showing narrow radiating lines at Chakrashila Wildlife Sanctuary



Carapaces of Brown roofed turtle and Elongated tortoise found in Dhubri district

Two adult and one of young carapace (black blotches not developed on carapace) of Elongated tortoise