

## CONSERVATION AND MANAGEMENT OF ENDANGERED RIVER TERRAPIN *BATAGUR BASKA* (GRAY-1831) IN WEST BENGAL

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### Introduction

*Species general distribution* : The turtle *Batagur baska* distributed among the tropical countries of South East Asia e.g. Sundarbans of India, Bangladesh, Burma, Indonesia, Malaysia, Thailand, Vietnam, Sumatra. This terrapin inhabits the lower reaches of major rivers over the said tropical mainland of Asia. On the Perak river of Malaysia, Batagur conservation initiated in 1967 (Whitakar, 1982) and Perak hatchery has released 20,000 young ones into the wild during 1982-83.

*Distribution in West Bengal* : The Hooghly river in West Bengal and heavily exploited, its numbers rapidly dwindled since early 1900s. Now found at Bagmara and Mechua Char of Sundarban Tiger Reserve.

*Batagur baska* has been one of the most exploited estuarines and is listed as endangered in IUCN Red Data Book. This river terrapin is moderately large; web-footed and is distinctive in having four clawed toes on the fore-limb. This fresh water turtle is largely vegetarian in feeding habits. Annual harvesting of eggs and an over increasing slaughter of turtles for eating and changes in the river environments are the reasons for population decline.

### Conservation efforts in West Bengal

#### *Initiation of Programme and Objectives* :

During 1973 discovered its existence in a private pond in pet condition near Bagna Forest Range Office of Sundarban Tiger Reserve. 32 eggs were discovered on 25th February, 1988 at Bagmara-8. 3rd March, 1988, 19 Nos. eggs were located at the same Char and subsequently 37 eggs were collected out of which 36 hatching came out. In 1989 also 114 eggs were collected from the same Char. In 1990, 330 eggs were collected from the "Mechua Char" at junction of Bay of Bengal and Bagmara Block of Sundarban National Park and out of which 170 hatched at Pakhiralaya hatchery.

As per programme artificial hatchery at Pakhiralaya will provide the adequate number of Batagurs for releasing in selected ponds. Subsequent programme of releasing them in selected places of Hooghly river where they were found in abundance during mid 19th century (Table 1).

#### *Nest (morphometry) details* :

1. Location - Bagmara-8 Char; Estuary of Mechua Khal and Bay of Bengal.
2. Date of collection - 10.3.90 at 5 p.m.
3. Approximate data of laying eggs - 9.3.90.
4. Distance from maximum tide water mark - 50m.
5. Temperature - 26°C at night .

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**Table 1**

Location	Date of collection	No. of eggs collected	Distance from maximum tide water mark & temperature below 35°C
Mechua Sea Beach (Bagmara Block of Sundarban Tiger Reserve)	25.02.88	32	25 m 26°C
-do-	03.03.88	19	80 m 28°C
-do-	03.03.88	37	158 m 29°C
<b>Total</b>		<b>88</b>	
Mechua Sea Beach (Bagmara Block)	February & March '89	114	25-35 m 25°C-27°C
Bagmara-8	25.02.90	28	60 m 27°C
Bagmara-6	26.02.90	174	50 m 26°C
Bagmara-8	10.03.90	67	40 m 25°C
Bagmara-6	11.03.90	27	10 m 22°C
Bagmara-8	14.03.90	42	30 m 22°C
<b>Total</b>		<b>338</b>	
Mechua Char	25.02.91	31	40 m 26°C
-do-	26.02.91	25	30 m 24°C
Bagmara Char	02.03.91	29	20 m 25°C
-do-	02.03.91	20	25 m 26°C
<b>Total</b>		<b>105</b>	

**Table 2**

No. of eggs	Depth of top (cm)	Depth of the egg layer (cm)	Dimensions of egg chamber (cms)
28	30	12.5	i) 12.5 x 12.5 - top ii) 25 x 15 - bottom
26	30	22.5	i) 17.5 x 12.5 - top ii) 25 x 15 - bottom
41	10	14	i) 20 x 17.5 - top ii) 20 x 20 - bottom
25	10	16.5	i) 18 x 20 - top ii) 22.5 x 18 - bottom
34	11	14	i) 18 x 20 - top ii) 18.5 x 17 - bottom

6. Depth of the top layer of egg - 35 cm.
7. Width of the nest - 25 cm x 18 cm.
8. No. of eggs - 4 - 8 - 11 - 12 (total 35)  
(Layerwise distribution)
9. Average weight of eggs - 55 gms.
10. Average length of eggs - 7.5 cm.
11. Average circumference - 12.5 cm.

**Hatchery incubation techniques :** The eggs were laid in artificial hatchery at Pakhiralaya in the same orientation as was in the field and temperatures and depth of sand with moisture content were maintained as were in the field during collection. During 1990 at Pakhiralaya Nest dimensions were as given in Table 2.

**Egg Biometry :** Unlike the eggs of Olive Ridley which looks like ping-pong ball; the eggs of *Batagur baska* are symmetrically elliptical in shape and colour of eggs is almost white (Table 3).

**Table 3**

Length and circumference	Weight (gm)
7.5 x 13	75
7.2 x 12	75
7.5 x 12	75
7.2 x 12	65
7.2 x 12	70
7.2 x 13	70
7.0 x 12	75
7.2 x 12	70
7.2 x 12	70
7.0 x 12	65

Average weight of the eggs - 70.75 gms

Average diameter of the eggs - 3.907 cms.

**Incubation period and survival per cent :** The average incubation period here at Sundarban Tiger Reserve has been found to be 60 days (Table 4 and 5).

**Early care of hatchlings :** Just after hatching takes place no food is required by them because they possess food sack below their plastron. They are to be kept in a cistern and water is to be changed regularly. 1% Mercurierome solution bath is beneficial. After 7-8 days they are found to eat hibiscus flower petals and the tips and leaves of ipomea, potato and dry small fishes. In the rearing cistern some amount of fresh sand in heaps is required at sites for their resting. Once they grow bigger i.e. more than 100 gms in weight they are better released in ponds with ipomea creepers etc.

**Releasing data of 1990 hatchlings :**

Pakhiralaya pond	47 Nos.
Sajnekhali pond	10 Nos.
Calcutta Zoo	10 Nos.
At Rearing Cistern	3 Nos.
Dead	22 Nos.

**Present weight of 1990 hatchlings :**

Data of weight taken	15.07.91
Data of collection	25.02.90
Data of hatching	08.05.90
Average weight after 20 hours of hatching	40 gms
Average weight after 1 year 66 days	600 gms

**Discussion**

**Egg laying season and collection :** Egg laying season at Mechua Char and Bagmara Block is in between 2nd week of February and 3rd week of March. Since marine turtle lay their eggs just before or after new and/or full moon days, though it could be easily seen from the table that due to probable

**Table 4**  
*Year 1990*

Date of collection	Hatching date	Place of collection	Number of eggs collected	Hatched	Still born	Unfertilised
25.02.90	08.05.90	Bagmara-8	28	20	2	6
26.02.90	03.05.90	-do- 6	26	18	-	8
-do-	04.05.90	-do- 6	41	16	5	20
-do-	07.05.90	-do- 6	48	9	18	21
-do-	10.05.90	-do- 6	25	23	1	1
-do-	08.05.90	-do- 6	34	26	4	4
10.03.90	09.05.90	-do- 8	35	4	9	22
-do-	13.05.90	-do- 8	32	20	4	8
11.03.90	04.05.90	-do- 6	27	19	2	6
14.03.90	14.05.90	-do- 8	42	15	5	22
Total			338	170	50	118

(Percentage of Hatching 50.3%)

**Table 5**  
*Year 1991*

No. of pit	Date of collection	Place of collection	No. of eggs collected	Hatching date
1	2	3	4	5
1.	25.02.91	Mechua	31	26.04.91
2.	26.02.91	-do-	25	28.04.91
3.	02.03.91	Bagmara	29	26.04.91
4.	02.03.91	-do-	20	26.04.91
Total			105	

  

Living hatchling	Dead inside the eggs	Unfertilised	Dead inside side the pond	No. of days for hatching
6	7	8	9	10
9	3	17	2	61
7	5	11	2	63
5	7	13	4	56
5	4	10	1	56
26	19	51	9	

(Hatching success 25%)

privacy during new-moon days laying of eggs is facilitated, besides average temperature also works out to be 25° C but the range during full moon days is 6° C and during new moon days is also 6° C; collection may be effected accordingly i.e. a day before or following the probable time of laying could be 12/14 hours before collection times. At an average of 30 cm to 35 cm below the sand dunes (loose) the eggs are collected.

*Hatchling movement following hatching :* Just after hatching the hatchlings move very fast towards water and swim upstream from the estuarine towards the less saline and sweet water river.

*Future programme :* Future programme comprises of setting of a Project for Conservation of Batagur with permanent set up and protection of its habitat.

### Acknowledgements

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### SUMMARY

*Batagur baska* the tropical marine turtle a threatened species at the estuary of the Ganges largely due to eco-ego complexities, has at the Sunderban Tiger Reserve shown certain phases of its life during hatching. Preliminary studies about their laying habitat, physical dimensions of eggs, the condition of the hatchlings etc are reported for the first time in details.

विलुप्ति खतरे में आए नदी जल कछुए बाटागुर बास्का (ग्रे-1831) का पश्चिम बंगाल में संरक्षण एवं प्रबंध  
सुकुमार सेठ

### सारांश

गंगा के मुहाने में अधिकांशतः परिस्थित - व्यष्टिकी जटिलताओं के कारण विलुप्ति खतरे में फंसे उष्ण देशीय जल कछुए बाटागुर बास्का के सेये जाने के दौरान सुन्दरबन बाघ संरक्षित क्षेत्र में उसकी कुछ जीवन प्राकस्थाएं दिखाई पड़ी हैं। अंडे देने के प्राकृतावास, अंडे के भौतिक नाप-जोख, सेये गए अंडों की दशा इत्यादि को विस्तार से प्रथम बार इस अभिपत्र में सूचित किया जा रहा है।

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