



Turtles &
Tortoises
along
GANGA
Basin



भारतीय वन्यजीव संस्थान
Wildlife Institute of India

NAME
GANGE



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Published by

Ganga Aqualife Conservation Monitoring Centre (GACMC)
Wildlife Institute of India, Chandrabani, Dehradun, 248001 Uttarakhand, India



भारतीय वन्यजीव संस्थान
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ISBN: 81-85496-45-5

April 2019

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<http://www.wii.gov.in/nmcg/national-mission-for-clean-ganga>

Photo Credits

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Citation

Talukdar A., Mallapur, S., Sengupta, D., Bajaj, A., Hussain, S.A. Malik, P.K. and Nigam, P. 2019.
Turtles and Tortoises along Ganga Basin, Wildlife Institute of India, Dehradun. Uttarakhand, India.
WII-NMCG. Pp18



Preface

Due to diverse range of chelonians inhabiting the Ganga Basin, proper identification of these species are much needed to avoid confusion between individual of similar appearance and for having species specific protocol in handling and management.

I have great pleasure in presenting the document titled “Turtles and tortoises of Ganga Basin”, which will help in identifying chelonians along Ganga basin.

This document provides concise and practical information regarding species description, distribution, natural history, diet and legal status based on IUCN, WPA and CITES.

I compliment the effort of team in producing the document and hope that this document is a value addition to the actions at field level.

(Dr. V.B. Mathur)





Introduction

The sacred Ganges, a center of many social and religious traditions also supports more than 25,000 species and serves as a lifeline for the population of several hundred million people. The aquatic wildlife of the Ganga basin, including the main stem Ganga River, is now under threat due to diverse anthropogenic pressures. There is also a growing concern for the subtle decrease in the biodiversity value of the River Ganga.

Freshwater turtles are ecological engineers as they maintain aquatic macrophytes in a suitable balance. Further, soft-shell turtles are important scavengers and contribute to maintaining clean aquatic ecosystems. Tortoises are primarily herbivorous and therefore play a role in vegetation control in ecosystems. Freshwater turtles and tortoises face an enormous threat from illicit trade other than the ecosystem pressures.

Most of the freshwater turtles and tortoises are protected under the Wildlife (Protection) Act 1972 and their international trade is governed by Convention for International Trade in Endangered Species of Wild Flora and Fauna (CITES) to which India is a signatory since 1972.

Considering the overall lacunae in information about these species along Ganga Basin as well as in India there is an immediate need to create awareness among the populace at large regarding conservation and protection of freshwater turtles and tortoises.

The aim of this compilation is to showcase the freshwater turtle diversity along the Ganga basin and share science-based information with various Stakeholders.



The background of the entire page is a close-up photograph of a turtle, likely a Galapagos tortoise, resting on a sandy surface. The turtle's head and front leg are visible on the left side, with its scutes showing a pattern of yellow and brown. The rest of the image is a soft-focus background of sand and some green foliage.

Species Account

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Northern River Terrapin

Batagur baska (Gray, 1830)

Diet : Omnivore

Clutch size : 13-14

Shell type : Hardshell

Species Description

Carapace is uniformly olive grey to olive brown. Head is small to moderate with an up-turned pointed projecting snout. The adult shell is smooth, lacking the marginal spines and vertebral keel, which is present only in juveniles.

Natural History

Nesting season: December-March

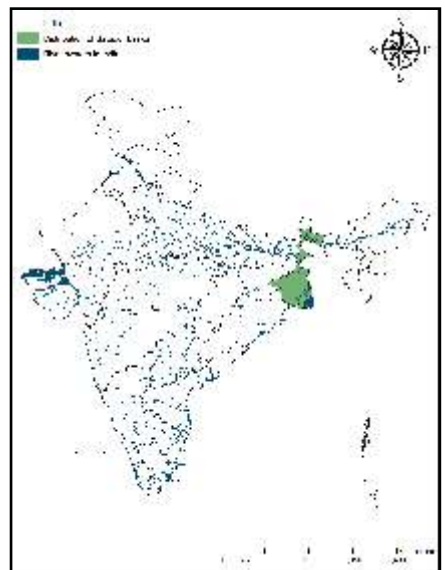
Hatching: February-May

Habitat

Large, deep, flowing rivers.

Diet

Feed on fruits, rhizomes and leaves of mangrove species as well as certain mollusks, crustaceans and fish.



IUCN: Critically Endangered
WPA: Schedule I
CITES: Appendix I



Red Crowned Roofed Turtle

Batagur kachuga (Gray, 1831)

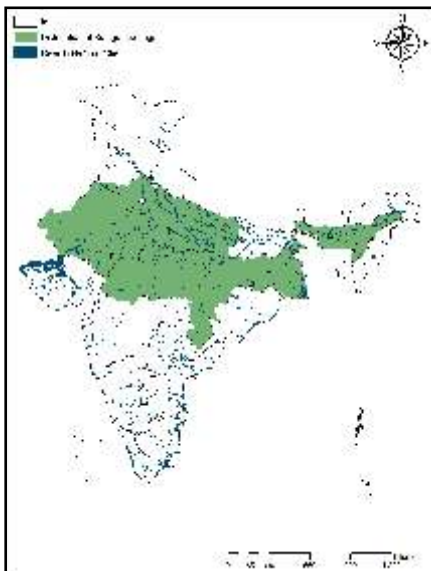
Diet : Omnivore

Clutch size : 22-25

Shell type : Hardshell

Species Description

Elliptical carapace which is widest in the middle, carapace rim is mainly smooth with a slightly serrated posterior rim. There may be a vertebral keel which diminishes with age. The plastron is long and narrow and is entirely orangish-yellow.



Natural History

Nesting season: March-April

Hatching: May-June

Habitat

Deep, flowing rivers.

Diet

Feed on aquatic greens and fruits. The young have a more omnivorous diet.

IUCN: Critically Endangered
WPA: Schedule I
CITES: Appendix II



Three Striped Roofed Turtle *Batagur dhongoka* (Gray, 1832)

Diet : Omnivore

Clutch size : 20-25

Shell Type : Hardshell

Species Description

Elliptical carapace which is widest behind the middle, depressed and has a smooth posterior rim. The plastron and bridge are yellow. The head is moderate in size with a projecting pointed snout. Lateral jaw rims are serrated.

Natural History

Nesting season: February-April

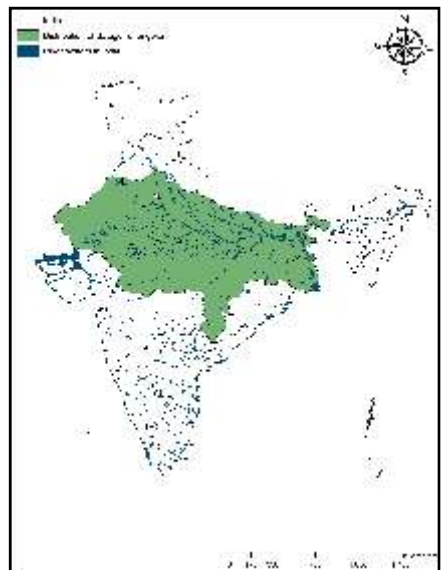
Hatching: May-June

Habitat

Large, deep, flowing rivers.

Diet

These turtles prefer a wider diet range and are omnivorous. They enjoy freshwater mussels and various aquatic vegetation.



IUCN: Endangered
WPA: Not Listed
CITES: Appendix II



Crowned River Turtle

Hardella thurjii (Gray, 1831)

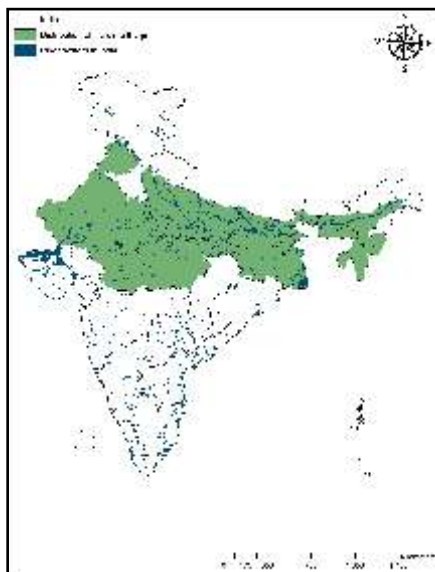
Diet : Herbivore

Clutch size : 12-16

Shell type : Hardshell

Species Description

Shell is thick and heavy in adults, moderately depressed with a single weak vertebral keel. The carapace is more serrated and the vertebral keel is more pronounced. The head is large with a projecting but short snout.



Natural History

Nesting season: August-January

Hatching: July-August

Habitat

Slow moving water bodies including pools, ponds, canals and oxbow lakes with abundant aquatic vegetation.

Diet

Feed on aquatic plants and vegetative debris that fall into the water. It may occasionally feed on freshwater shrimp or small fish.

IUCN: Vulnerable
WPA: Schedule I
CITES: Appendix II



Indian Tent Turtle

Pangshura tentoria circumdata (Gray, 1834)

Diet : Omnivore

Clutch size : 4-12

Shell type : Hardshell

Species Description

Fine white lines run from the orbit to the base of the neck. In adults the neck is brightly coloured but the head is blackish and loses its markings. The marginal scutes are not serrated and are significantly wide at the posterior end. The carapace is brown to dark beige with a reddish or brownish vertebral line which runs along the central keel.

Natural History

Nesting season: February-March
(rarely September-October)

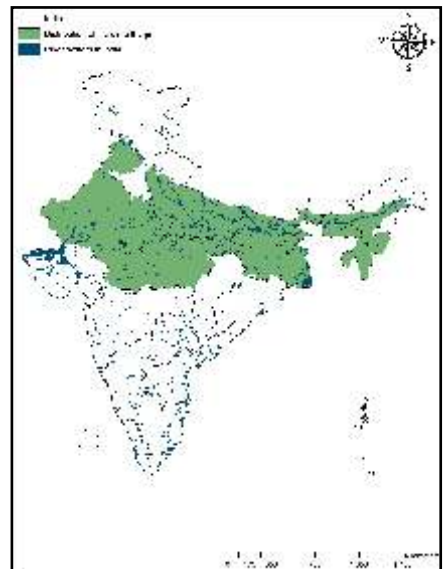
Hatching: June

Habitat

The species occurs in large rivers and may even be seen in smaller tributaries.

Diet

The turtle is primarily vegetarian and occasionally eats insects and animal protein. The juveniles are more carnivorous in their diet preference.



IUCN: Vulnerable
WPA: Not Listed
CITES: Appendix II



Spotted Pond Turtle

Geoclemys hamiltonii (Gray, 1830)

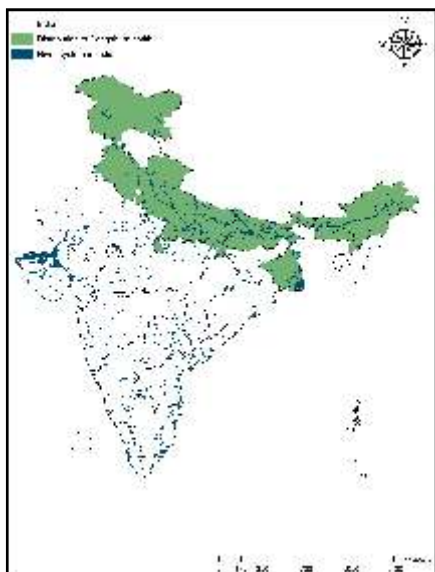
Diet : Carnivore

Clutch size : 3-12

Shell type : Hardshell

Species Description

Carapace is black, elongated and oval with three keels and is well domed. The skin has yellowish spots on a dark background. The plastron is yellow with numerous dark radiations. The snout is short and stubby.



Natural History

Nesting season: May-June

Hatching: July-October

Habitat

Main river channel but are sometimes seen in the forest lakes where the water is calm and well shaded and aquatic vegetation is dense. During summers they bask for a long time on emergent and floating wood while in winters they hide in burrows or under vegetation.

Diet

Typically carnivorous feeding on snails and other invertebrates and probably on fish and tadpoles.

IUCN: Vulnerable
WPA: Schedule I
CITES: Appendix I



Indian Black Turtle

Melanochelys trijuga (Schweigger, 1812)

Diet : Omnivore

Clutch size : 10-15

Shell type : Hardshell

Species Description

Their general colour varies from reddish brown to black. There are three prominent keels on the carapace that are often yellow. The head varies from brown to black and may contain orange to yellow coloured patterns at the temporal region. The hatchlings often have colourful spots on the head which disappear or become lighter with age.

Natural History

Nesting season: January-December

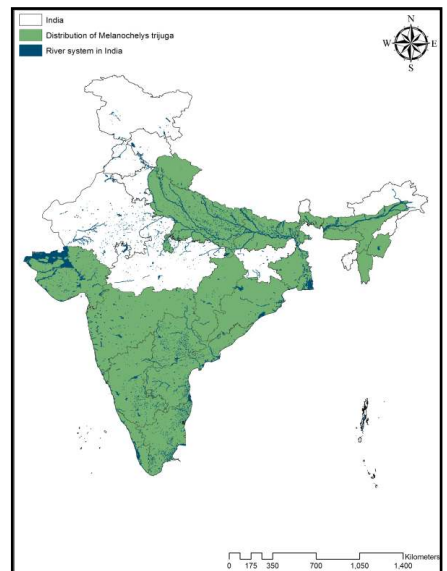
Hatching: January-December

Habitat

These turtles inhabit ponds, streams, rivers as well as marshes and lakes.

Diet

Feed on plant and animal matter often scavenging when the opportunity presents itself.



IUCN: Near Threatened

WPA: Not Listed

CITES: Appendix II



Indian Roofed Turtle

Pangshura tecta (Gray, 1830)

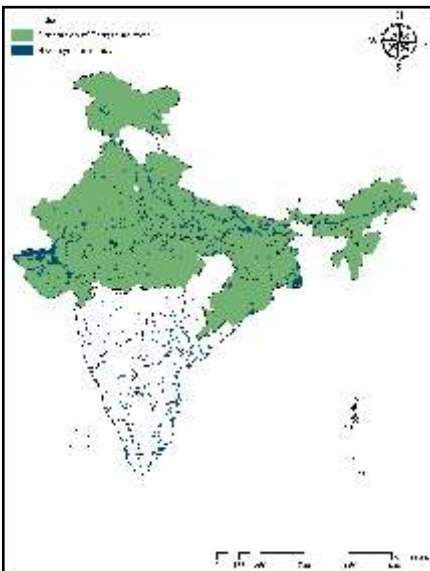
Diet : Herbivore

Clutch size : 3-12

Shell type : Hardshell

Species Description

Carapace shows a roof-like or tent shaped formation. It is elliptical and wider towards the rear. The plastron and bridge are yellow with at least one black elongated blotch on each scute. Dorsally the head is black with a large crescent shaped orange to yellowish blotch on each temple.



Natural History

Nesting season: February-March

Hatching: May-June

Habitat

Streams, canals, oxbows, ponds, and manmade water tanks. A soft bottom and abundant aquatic vegetation are preferred by the species.

Diet

Primarily vegetarian and occasionally eats insects, carrion and snails.

IUCN: Vulnerable
WPA: Schedule I
CITES: Appendix I



Brown Roofed Turtle

Pangshura smithii (Gray, 1863)

Diet : Omnivore

Clutch size : 5-8

Shell type : Hardshell

Species Description

Carapace is tan to brown with a dark medial stripe. It is elliptical and wider towards the rear. The head is yellowish grey or pinkish grey with a reddish brown spot on the temple and a slightly elevated dark snout. Neck is grey with yellow stripes. The plastron is yellow with black spots.

Natural History

Nesting season: September-November

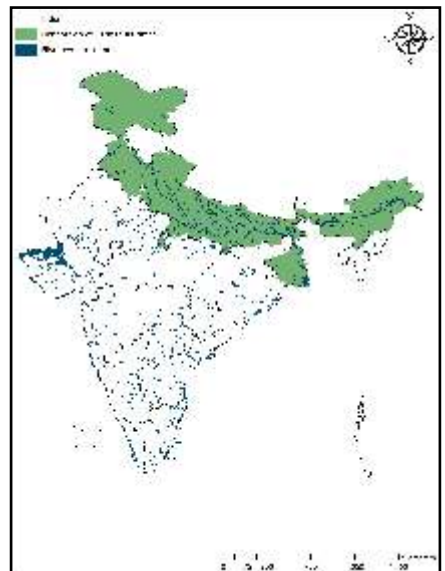
Hatching: November-January

Habitat

River channels, large canals and occasionally lakes, ponds connected to rivers. They are also noted in muddy waters with slow current where there are logs and other protruding objects for basking.

Diet

Omnivorous but generally prefers vegetable matter.



IUCN: Near Threatened

WPA: Not Listed

CITES: Appendix II



Tricarinate Hill Turtle

Melanochelys tricarinata (Blyth, 1856)

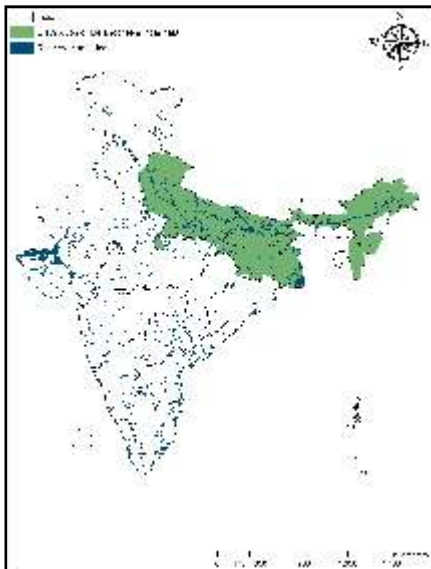
Diet : Omnivore

Clutch size : 3-9

Shell type : Hardshell

Species Description

Carapace is dark olive grey, grey black or reddish brown with pale yellow keels. There are three ridged keels (tricarinate), the vertebral keel being the most prominent. The plastron is yellow or orange and usually as long as the carapace and notched posteriorly. The head and neck are grey black.



Natural History

Nesting season: November-February

Hatching: February-May

Habitat

Turtle is terrestrial and mainly inhabits deciduous and evergreen forests and riverine grasslands of the Northern Indian Sub-continent. Its habitat includes the Terai region (foothills of the Himalayas).

Diet

These turtles consume insects, carrion, berries and fruits.

IUCN: Vulnerable
WPA: Schedule I
CITES: Appendix I



Indian Eyed Turtle

Morenia petersi (Andersoni, 1879)

Diet : Herbivore

Clutch size : 6-10

Shell type : Hardshell

Species Description

The overall coloration is olive to dark brown or black. The carapace is slightly domed and has a relatively low keel and an unserrated posterior rim. The head is olive with yellow stripes on each side. The plastron is uniformly yellow though there may be some dark blotches on the bridge and the underside of some marginals.

Natural History

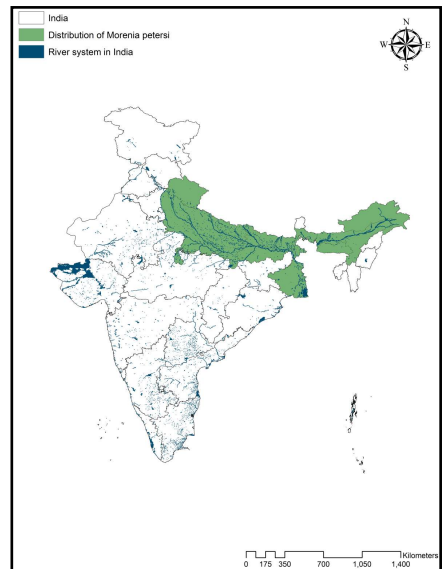
Nesting season: December-January

Habitat

Sluggish rivers, swamps and lakes.

Diet

Feed on floating macrophytes.



IUCN: Vulnerable
WPA: Not Listed
CITES: Appendix II



Elongated Tortoise/ Yellow Tortoise *Indotestudo elongata* (Blyth, 1853)

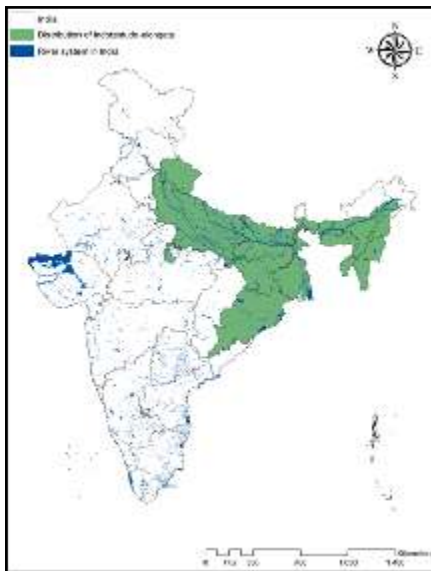
Diet : Omnivore

Clutch size : 2-3

Shell type : Hardshell

Species Description

The carapace may be depressed along the 3rd or 4th vertebral scute. The plastron is well developed and has a deep anal notch. The plastron and bridge are yellow and usually lack any pattern. The snout has a weakly hooked tricuspids upper jaw.



Natural History

Nesting season: July - October

Habitat

They live in humid tropical evergreen and deciduous forests on hills, mountains or plateaus. Although partial to cooler humid forests, this tortoise may also be found in rocky and moderately dry habitats.

Diet

Fruits form a large portion of their diet. They also feed on flowers, leafy greens, worms, slugs and carrion.

IUCN: Endangered
WPA: Schedule IV
CITES: Appendix II



Indian Narrow Headed Softshell Turtle

Chitra indica (Gray, 1830)

Diet : Carnivore

Clutch size : 50-178

Shell type : Softshell

Species Description

The carapace is dull olive or bluish-grey with a complex pattern of wavy reticulations. The head is very small, and the neck is slightly conical and quite thick at the shoulders. The eyes are small and located close to the snout. The plastron is cream or pale pink.

Natural History

Nesting season: August-September

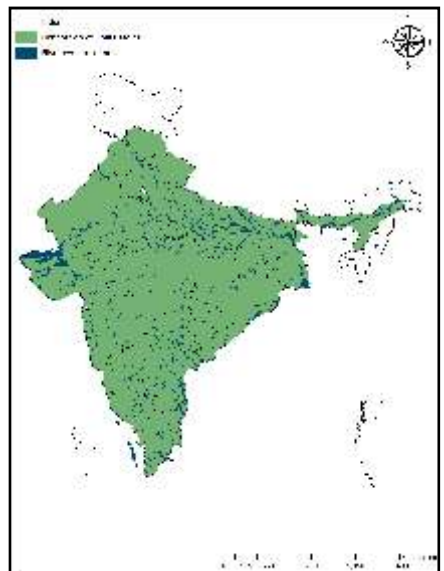
Hatching: October

Habitat

Optimal habitat is medium to large rivers, with low turbidity and sandy bottoms. The species is highly aquatic.

Diet

Eats fish, mollusks, crabs, shrimp and, on some occasions, aquatic plants and vegetables.



IUCN: Endangered
WPA: Schedule II
CITES: Appendix II



Indian Softshell Turtle

Nilssonia gangetica (Cuvier, 1825)

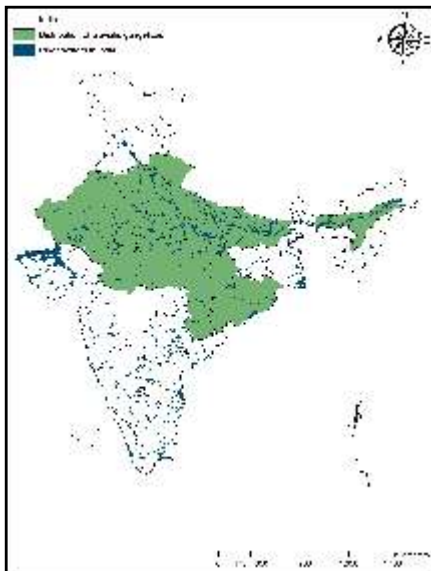
Diet : Carnivore

Clutch size : 30-35

Shell type : Softshell

Species Description

The carapace is round to oval and is olive or green, with or without black reticulations and is modestly domed. There are several longitudinal rows of tubercles in juvenile which smoothen out in the adult stages. The plastron is grey to white with well-developed callosities.



Natural History

Nesting season: August-November

Hatching: July-August

Habitat

This large softshell inhabits deep rivers, streams and large canals with muddy and sandy floors.

Diet

The diet includes insects, aquatic vegetation, mollusks, fishes, frogs and even small aquatic birds.

IUCN: Vulnerable
WPA: Schedule I
CITES: Appendix I



Indian Peacock Softshell Turtle

Nilssonia hurum (Gray, 1830)

Diet : Carnivore

Clutch size : 20-30

Shell type : Softshell

Species Description

The carapace is characterized with several longitudinal rows of tubercles and a series of enlarged blunt tubercles occur above the neck on the anterior marginal rim. The plastron is light brown or grey and includes five well developed callosities (a thickened piece of skin).

Natural History

Nesting season: August-November

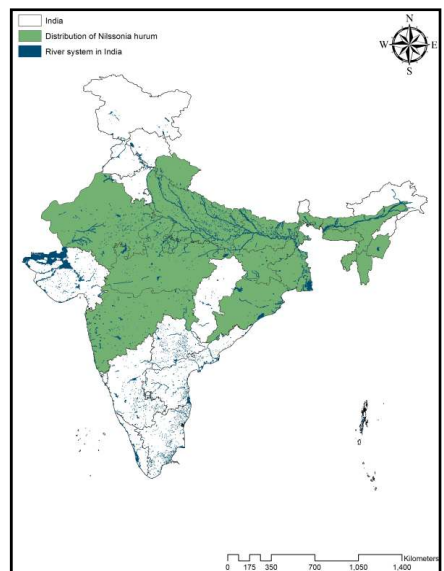
Hatching: June-July

Habitat

It is found in rivers and streams with mud or sand bottoms.

Diet

The diet comprises of snails. Specimens that have been kept in temple ponds for several years now have been noted to feed on rice, pancakes and other religious offering.



IUCN: Vulnerable
WPA: Schedule I
CITES: Appendix I



Indian Flapshell Turtle

Lissemys punctata andersonii (Lacepede, 1788)

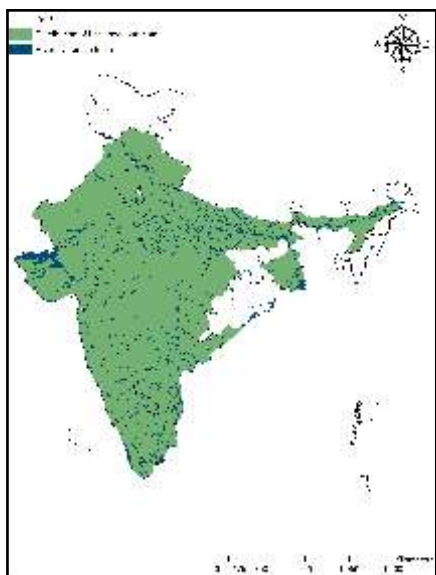
Diet : Carnivore

Clutch size : 20-30

Shell type : Softshell

Species Description

Adults have an oval domed carapace which is unique among soft shell turtles. It varies from uniform brown to dark green with small dark brown or large yellow spots (*L. p. andersonii*). Flaps are present on the plastron that gives the species its name. The plastron is cream colored.



Natural History

Nesting season: July-November

Hatching: May-June

Habitat

It lives in shallow calm and often stagnant waters of rivers, streams, marshes, ponds, lakes and irrigation canals with a muddy or sandy bottom.

Diet

This species feed on frogs, tadpoles, fish, crustaceans, snails, worms and sometimes aquatic vegetation.

IUCN: Lest Concern

WPA: Schedule I

CITES: Appendix II

Do's & Don'ts

Do's

- Do report cruelty or illegal sales of turtles and tortoises.
- Do participate in local community pond or river cleanups, these improve a turtle's habitat.
- Do write about conservation issues in newsletters, papers, blogs and any other media, which will increase awareness about turtles and their ecosystem.

Don'ts

- Don't remove turtles or tortoises from the wild.
- Don't buy a turtle or tortoise from a pet shop – it increases demand from the wild.
- Don't buy real tortoise shell products as barrettes, brushes, artifacts or jewelry.
- Don't forget that reptiles can transmit many diseases which can also affect human beings.

Identification Keys

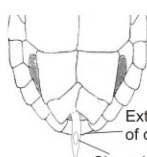
Hard Shell



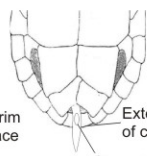
Carapace



Plastron



Male



Female

External rim
of carapace
Cloacal opening

External rim
of carapace
Cloacal opening

Soft Shell



Carapace



Plastron

*Sexing for softshell is difficult and requires services of professional

Hard Shell



Male (Plastron concave)



Female (Plastron flat)

Partners

Ministry of Water Resources, River Development and Ganga Rejuvenation
National Mission for Clean Ganga
Uttar Pradesh Forest Department
Nuclear Power Corporation of India
Narora Atomic Power Station (NAPS), Narora
Wildlife Institute of India

Special Thanks to

Mr. Manoj Khare, DFO, Kashi Wildlife Division
Mr. N.P. Upadhyay, DFO, Bulandshahar
Dr. Sandeep Bahra, Biodiversity Consultant, NMCG
Dr. Bilal Habib, Scientist - WII.
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Mr. Pyarelal, Ms. Jyoti, Mr. Pintu,
Mr. Rajkumar, Mr. Omveer

