

नमामि
गंगे

VIBRANT GANGA 

glimpses
of

AMNIA

THREATENED
AQUALIFE OF
GANGA RIVER



भारतीय वन्यजीव संस्थान
Wildlife Institute of India





glimpses
of

GANGA

THREATENED
AQUALIFE OF
GANGA RIVER

PART II



Part II
Threatened Aqualife of Ganga River

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Freshwater biodiversity is in a state of crisis, an outcome of decades of humans exploiting rivers with large dams, water diversions and pollution. Consequently, freshwater species are declining rapidly and the Living Planet Index substantiates this by showing an average decline in the abundance of monitored freshwater populations by 81% between 1970 and 2012. This decline has serious consequences on ecosystem processes and human well-being.

The Ganga River is one of the largest river systems in the world encompassing diverse habitat characteristics. It harbours numerous endangered species of conservation concern at the international and national platforms, whose survival is depends on the ability of the river to maintain its natural flow. However, the river's existence in terms of clean and continuous flow is threatened due to the intensity of human activities. Some of these threats include over-exploitation, river-bed agriculture, sand mining, construction of dams and barrages and pollution.

Restoration of the Ganga River is important for not only the conservation of biodiversity, ecosystems and ecosystem processes but also for the 40% of India's population that the river supports - economically, socially and culturally. The Wildlife



PREFACE

Institute of India through the Biodiversity Conservation and Ganga Rejuvenation project funded by the Ministry of Water Resources, River Development and Ganga Rejuvenation has been working towards the conservation of freshwater species through various platforms as a part of its goal to formulate a comprehensive strategy to restore the biodiversity value of the Ganga River. The aim is to ensure significant reduction of threats to the biodiversity of the river by garnering societal support through sensitization of the masses.

With this background, 'Glimpses of Ganga', under the 'Vibrant Ganga' series, has been conceptualised as an information booklet for a glance into the fauna of the Ganga River. Glimpses of Ganga - Part I, published in 2017 provided information on 13 species of conservation concern. This second part of the series provides information on another 13 species of conservation concern. Described species consist of 2 mammalian, 3 birds, 4 reptiles, 2 amphibians and 2 fish species. For each species, information on their taxonomy, conservation status, distribution, description, habitat, reproduction and major threats has been provided. This publication can be used by a wide array of stakeholders from the scientific community to the local people. For ease of use and identification of species by amateur users, visual aids in the form of photographs have been provided for each species. Distribution maps and key references have also been provided for the species described here.



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EURASIAN OTTER

Lutra lutra

Vernacular name:
Udbilav (Hindi),
Udberal (Bengali)

Taxonomy:

- Class:
Mammalia
- Order:
Carnivora
- Family:
Mustelidae
- Genus:
Lutra
- Species:
L. lutra

Key identifying features

It has long lithe body with a thick tail and short legs, sleek, brown, very dense and short fur, webbed feet and 'vibrissae' in snout. The total body length varies between 92-120 cm. Female weighs 6-12 kg and male weighs around 7-17 kg.

Habit & Habitat

The piscivorous species is generally described as territorial and solitary, elusive and highly sensitive to human disturbances. Primarily nocturnal the species lives in a wide variety of aquatic habitats, including highland and lowland lakes, rivers, streams, marshes and coastal areas.



Reproduction

Breeding occurs during March to July. After a gestation period of about 60 to 70 days, a litter of 4 pups is born. Weaning occurs at 3 months. The pup's eyes open after one month and they begin to leave the nest after two months.

Major Threats

Dams, canalization, reclamation of wetlands, removal of riparian vegetation, aquaculture, persistent pollutants, agricultural encroachment on river banks, reduction in prey biomass, poaching and incidental killing are major threats to this species.





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ASIAN SMALL- CLAWED OTTER

Aonyx cinereus

Vernacular name:
Udbilav (Hindi),
Udberal (Bengali)

Taxonomy:

- Class:
Mammalia
- Order:
Carnivora
- Family:
Mustelidae
- Genus:
Aonyx
- Species:
A. cinereus

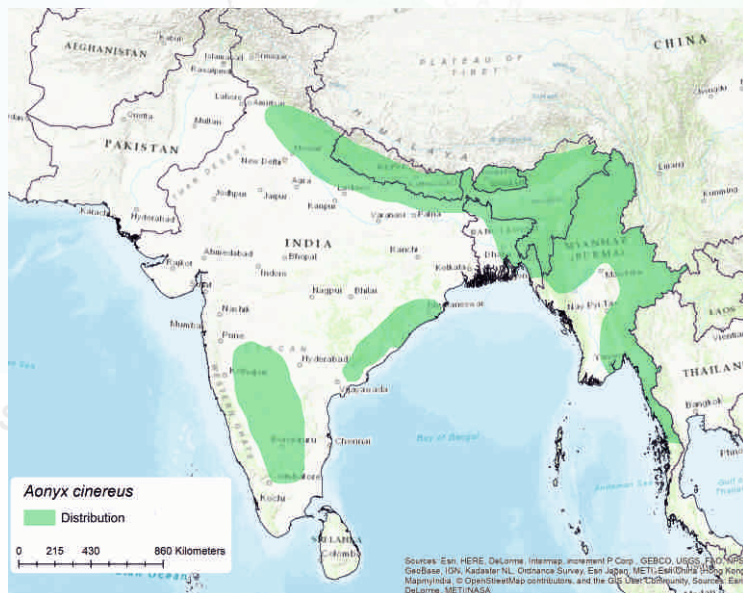
Population Trend:
Decreasing

Conservation Status:

- IUCN Red List:
Vulnerable
- CITES:
Appendix II
- IWPA, 1972:
Schedule I

Distribution

The species is distributed in South and South-east Asia. In India, the species is reported from West Bengal, Odisha, Assam, Arunachal Pradesh, southern Indian hill ranges of Coorg (Karnataka), Ashambu, Nilgiri and Palni hills (Tamil Nadu) and Kerala. It is recorded from upper and lower stretches of the Ganga River and its Himalayan tributaries.



Aonyx cinereus

Distribution

0 215 430

Key identifying features

The species is the smallest of the three other species and is distinguished by narrower feet, with more emarginated webs, which do not extend along the digital pads and are sparsely covered with short hair. The total length of the body is 40-63 cm and weight ranges between 2.7-5.4 kg.

Habit & Habitat

The species is nocturnal, crepuscular and monogamous. They mostly eat crabs, insects and small fish. They live and forage in groups of upto 12 to 13 individuals. It inhabits meandering rivers, floodplain wetland systems such as swamps, mangroves and tidal pools.



Reproduction

The species has a continuous breeding cycle. A litter of upto 6 pups is born after a gestation period of about 60 days.

Major Threats

Dams, canalization, loss of hill streams, reclamation of wetlands, removal of riparian vegetation, water ways, aquaculture in intertidal wetlands, persistent pollutants, agricultural encroachment of river banks and reduction in prey biomass are major threats to this species.





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PAINTED STORK

*Mycteria
leucocephala*

Vernacular name:
Kanth saras, Janghil,
Kankri (Hindi),
Ranga manikjor
(Bengali)

Taxonomy:

- Class:
Aves
- Order:
Ciconiiformes
- Family:
Ciconiidae
- Genus:
Mycteria
- Species:
M. leucocephala

Key identifying features

The stork is 93-100 cm in height, has a pure white body with black wing coverts and pink tail. Head of the adult is bare and orange or reddish. The bill is long, yellow-orange and broad at the base. The species has long legs and semi-palmated feet.

Habit & Habitat

Forages in flocks during daytime and feeds on small fish, frogs, crustaceans and occasionally snakes. Occurs in freshwater marshes, lakes and reservoirs, river banks and wetland areas.



Reproduction

Breeding occurs during mid-August in Northern India. The species nests in colonies on tree often with other species. A clutch of 3-4 eggs is laid, and chicks hatch after 30 days.

Major Threats

Loss and degradation of riverine riparia, wetland drainage, water pollution, disturbance to breeding colonies resulting from hunting of adults and collection of eggs and nestlings are major threats to the species.





© P. Gangaimaran

GREAT THICK- KNEE

Esacus recurvirostris

Vernacular name:
Pchamach baza
(Hindi)

Taxonomy:

- Class:
Aves
- Order:
Charadriiformes
- Family:
Burhinidae
- Genus:
Esacus
- Species:
E. recurvirostris

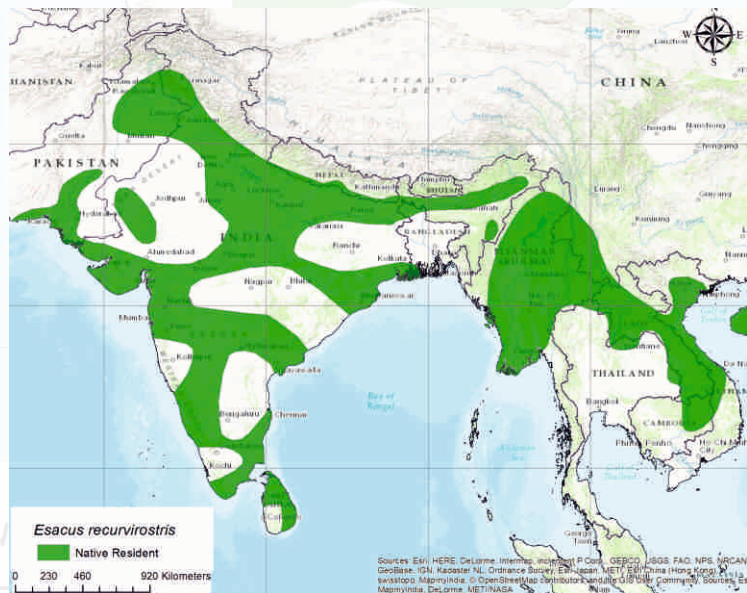
Population Trend:
Decreasing

Conservation Status:

- IUCN Red List:
Near Threatened
- CITES:
Not listed
- CMS:
Not listed
- IWPA, 1972:
Schedule IV

Distribution

It is a resident breeding bird widespread throughout India. It occurs in upper, middle and lower stretches of the Ganga River.



Esacus recu

Native Resident

0 230 460 920 Kilometers

Sources: Es
GeoBase, I
swissstopo, M
MapmyIndia

Key identifying features

Adults are 49-55 cm in height with large head, long thick leg, heavy upturned yellow and black beak, big yellow eyes and peculiar black and white facial patterns.

Habit & Habitat

The species is crepuscular and nocturnal. Feeds on crabs and molluscs. Mainly found in sandy river banks, mid-river islands, shingles and rocky out-crops in large rivers and mud-flats of wetlands.



Reproduction

Breeding occurs during February to June. It is a ground nesting species and nests in exposed sandbanks and mid-channel islands of large rivers as a small depression on sand.

Major Threats

Altered river hydrology by dams and impoundments, nest depredation, disturbances in nesting beach and islands and opportunistic harvesting are major threat to this species.





© P. Gangaimaran

RIVER TERN

Sterna aurantia

Vernacular name:
Dariyai tehri (Hindi)
Pan paira (Bengali)

Taxonomy:

- Class:
Aves
- Order:
Charadriiformes
- Family:
Laridae
- Genus:
Sterna
- Species:
S. aurantia

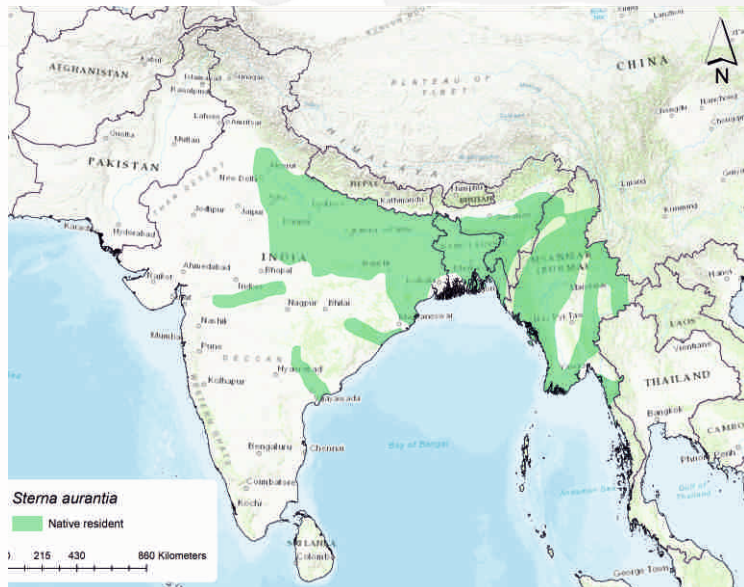
Population Trend:
Decreasing

Conservation Status:

- IUCN Red List:
Near Threatened
- CITES:
Not Listed
- CMS:
Not Listed
- IWPA, 1972:
Not Listed

Distribution

River tern occurs across Indian Sub-continent, Myanmar, Thailand, Laos, Cambodia, Vietnam and southern China. It is a resident breeding bird widespread throughout India. It is found throughout the Ganga River.



Key identifying features

The species is 38-43 cm in height. It is a white bird with pointed bright yellow bill, fluviate pale grey, deeply forked swallow tail and short red legs.

Habit & Habitat

It predominantly feeds on fish, small crustaceans and insects. It prefers sandy beaches and mid-river islands of large perennial rivers.



Reproduction

The species is a colonial breeder, and breeds during March to June. Shares nesting site with other terns, pratincoles and plovers. Nest is small depression scraped in sand on sand banks, sandy mid-river islands. Clutch consists of 3-4 eggs, which hatch after an incubation period of 30 days.

Major Threats

Alteration and degradation of habitats through the construction of dams, over-fishing, sand mining, agriculture, grazing and pollution from agricultural and industrial chemicals, nest destruction by unpredicted water release from dams, egg depredation by corvids, stray and domestic dogs are major threats to this species.





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ESTUARINE CROCODILE

Crocodylus porosus

Vernacular name:
Kumhir (Hindi),
Kumir (Bengali)

Taxonomy:

- Class:
Reptilia
- Order:
Crocodylia
- Family:
Crocodylidae
- Genus:
Crocodylus
- Species:
C. porosus

Key identifying features

Adult males can reach up to 6-7 m in length, while females do not generally exceed 3 m. The head is very large and a pair of ridges run from the eyes along the centre of the snout. A gap is also present between the cervical and dorsal shields. They have salt glands to osmoregulate.

Habit & Habitat

Estuarine crocodiles are territorial, non-fastidious and an active hunter. They generally spend the tropical wet season in freshwater swamps and rivers, moving downstream to estuaries in the dry season, and sometimes travelling far out to the sea.



Reproduction

Estuarine crocodile breeds during November to March. Breeding grounds are established in freshwater. About 20-60 eggs are placed in mound nests made of mud and plant material. Offsprings are hatched after an incubation period of 55-75 days.

Major Threats

Destruction of mangrove swamp and upstream freshwater nesting areas, encroachment in nesting beaches, nest depredation by *Varanus salvator* and illegal poaching are major threats to this species.





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THREE- STRIPED ROOFED TURTLE

Batagur dhongoka

Vernacular name:
Dhor (Hindi),
Sadakatha (Bengali)

Taxonomy:

- Class:
Reptilia
- Order:
Testudines
- Family:
Geoemydidae
- Genus:
Batagur
- Species:
B. dhongoka

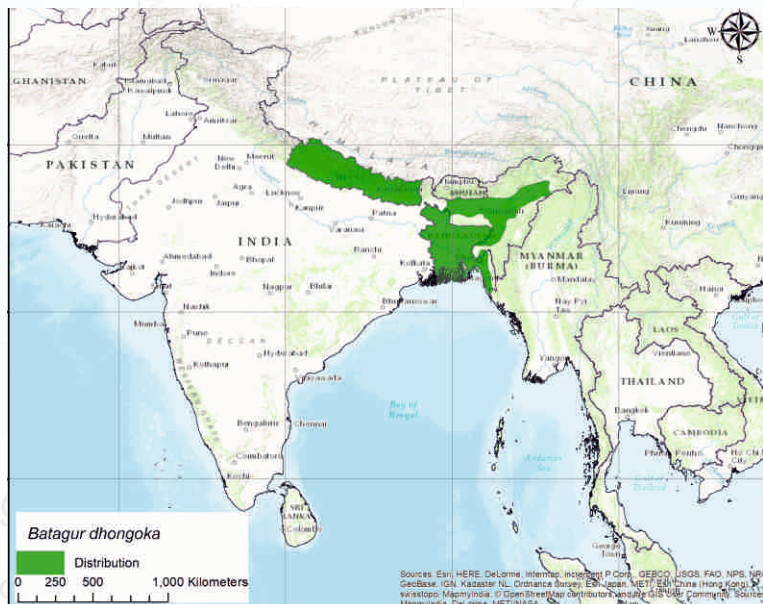
Population Trend:
Unknown

Conservation Status:

- IUCN Red List:
Endangered
- CITES:
Appendix I
- IWPA, 1972:
Not Listed

Distribution

Three-striped roofed turtle occurs in India and Bangladesh. It is reported from the Ganga-Brahmaputra basin and occurs in the middle and lower stretches of the Ganga River.



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRC, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, MapmyIndia, © OpenStreetMap contributors, Swisstopo, Mapbox, © MapmyIndia, DeLorme, METI/NASA

Sources: Esri, GeoBase, Intermap, Swisstopo, MapmyIndia, DeLorme, METI/NASA

Key identifying features

This hardshell species has an oval and elevated carapace, dorsally brownish grey with three dark brown stripes. A yellow stripe is present on the head and neck from tip of snout and over eyes. It attains a carapace length upto 60 cm.

Habit & Habitat

The species inhabits large rivers with sandy banks. It is herbivorous, controls invasive aquatic weeds and maintains aquatic plant population.



Reproduction

The turtle breeds during March to April. Sandy banks and river islands are preferred nesting sites. A clutch of upto 35 eggs are laid and offsprings are hatched in about 56-89 days.

Major Threats

Sand mining, poaching, accidental mortality in fishing nets, nest inundation or desiccation, xenobiotic compounds from agricultural fields and industries are major threats. Besides, altered natural flow regime due to dams and barrages causes habitat loss and destruction.





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SPOTTED POND TURTLE

Geoclemys hamiltonii

Vernacular name:
Kala kachhua (Hindi),
Kalo/ Bhut katha (Bengali)

Taxonomy:

- Class:
Reptilia
- Order:
Testudines
- Family:
Geoemydidae
- Genus:
Geoclemys
- Species:
G. hamiltonii

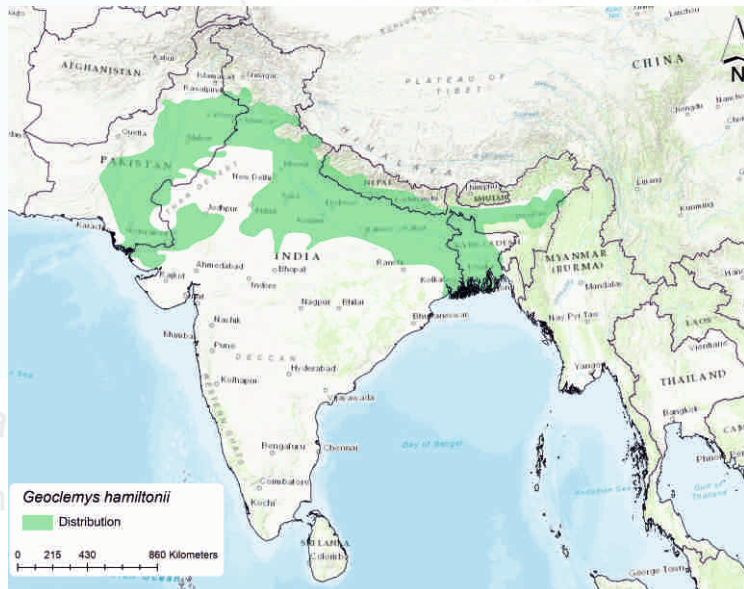
Population Trend:
Unknown

Conservation Status:

- IUCN Red List:
Vulnerable
- CITES:
Appendix I
- IWPA, 1972:
Schedule I

Distribution

Spotted pond turtle is distributed in India, Bangladesh, Nepal and Pakistan. It occurs in the drainage basins of Ganga, Brahmaputra and Indus. It is reported from throughout the Ganga River.



Key identifying features

This hardshell turtle has a black body with yellowish streaks or spots and wedge-shaped marks. Its head is black with yellow spots, while grey neck and black forelimbs have white spots. Vertebral I is longer than broad, vertebral II and III are broader than long in juveniles or as long as broad in adults; plastron is deeply notched posteriorly. Females are larger than males.

Habit & Habitat

The species inhabits freshwater wetlands, ox-bow lakes and rivers. It is an omnivorous species and feeds on snails, insect larvae, aquatic vegetation, fruits and leaves.



Reproduction

Spotted pond turtle breeds during April to May. Silty or clayey river banks and shoreline with vegetation are chosen as nesting site.

A single clutch of 18-30 eggs is laid in the nests, however a second clutch may occur in a year. The offsprings are hatched after 23-76 days, during May to June.

Major Threats

International pet trade and consumption, local poaching and harvesting of eggs, alteration in hydrology of river by dams and barrages and river-bed agriculture are major threats to this species.





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INDIAN TENT TURTLE

Pangshura tentoria

Vernacular name:
Pachera (Hindi),
Majhari katha (Bengali)

Taxonomy:

- Class:
Reptilia
- Order:
Testudines
- Family:
Geoemydidae
- Genus:
Pangshura
- Species:
P. tentoria

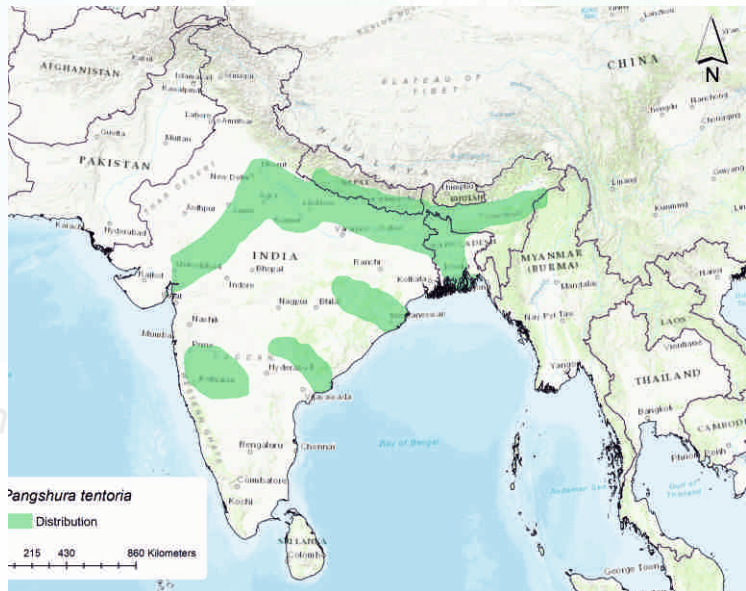
Population Trend:
Unknown

Conservation Status:

- IUCN Red List
Least concern
- CITES:
Appendix II
- IWPA, 1972:
Not Listed

Distribution

Indian tent turtle occurs in Central and Northern India, Western Bangladesh, and Southern Nepal. It is reported from the middle and lower stretches of the Ganga River.



Key identifying features

This hardshell species has a tent-like brown carapace with amber or hazel stripes in the first three vertebrae. It has olive or brownish head, and red post-ocular spot. The plastron is yellow with black blotches.

Habit & Habitat

The males and juveniles are carnivorous, while females are usually herbivorous. The turtles are active swimmers. Primarily, they are riverine species found in both small and large fast-flowing rivers.



Reproduction

The species breeds during November and December. Nests are holes dug in sandy shore and mid-river islands. Clutch size varies from 3-12, which hatch during April-May.

Major Threats

Pet trade, poaching and harvesting of eggs, alteration in hydrology and river-bed agriculture are major threats to this species.





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CASCADE FROG

Amolops formosus

Taxonomy:

- Class: *Amphibia*
- Order: *Anura*
- Family: *Ranidae*
- Genus: *Amolops*
- Species: *A. formosus*

Key identifying features

The frog is green in colour, with dark brown or black spots. It grows upto 75 mm in length.

Habit & Habitat

The species is associated with streams and riparian vegetation. They are obligate stream dwelling species.



Reproduction

It breeds along fast flowing streams. Tadpoles have ventral suckers which attaches them on rocks in fast flowing streams.

Major Threats

Loss of habitat due to deforestation and changes in river hydrology through dams and shifting climatic patterns are the major threats.





MARbled TOAD

*Duttaphrynus
stomaticus*

Taxonomy:

- Class: *Amphibia*
- Order: *Anura*
- Family: *Bufo*nidae
- Genus: *Duttaphrynus*
- Species: *D. stomaticus*

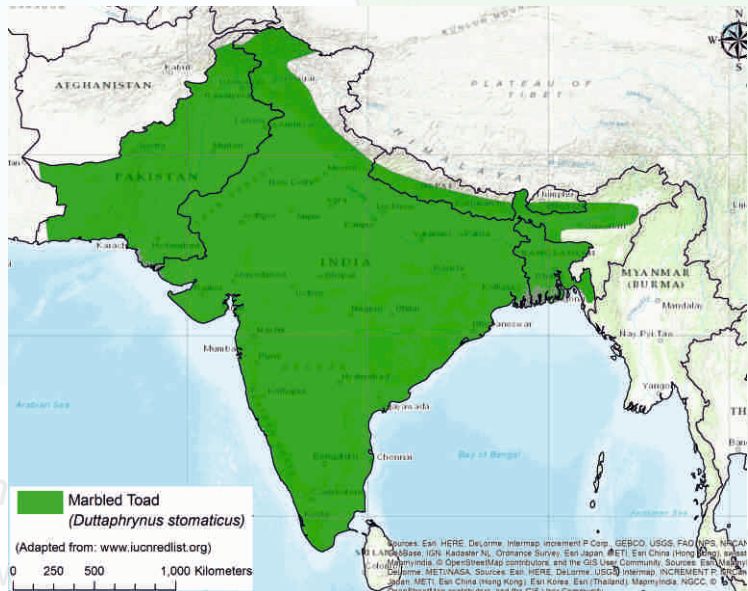
Population Trend:
Stable

Conservation Status:

- IUCN Red List
Least Concern
- CITES:
Not listed
- IWPA, 1972:
Not listed

Distribution

The Marbled toad has been reported from India, Bangladesh, Nepal, Bhutan and Pakistan. It is found throughout the Ganga River.



Key identifying features

The species is a moderately large bodied toad, reaching upto 76 mm. The body is light brown with numerous warts or marbling. A large parotid gland is present behind the eye.

Habit & Habitat

The species is found in open plains, grassland, scrubland, forest, agricultural land and human habitations.



Reproduction

It breeds in permanent and seasonal pools, seasonal streams and slow-flowing streams.

Major Threats

Loss of habitat, use of pesticides and herbicides in agriculture, water pollution and overall shifting climatic patterns are major threats to this species.





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BATA

Labeo bata

Vernacular name:
Asaila (Hindi),
Bata (Bengali)

Taxonomy:

- Class:
Actinopterygii
- Order:
Cypriniformes
- Family:
Cyprinidae
- Genus:
Labeo
- Species:
L. bata

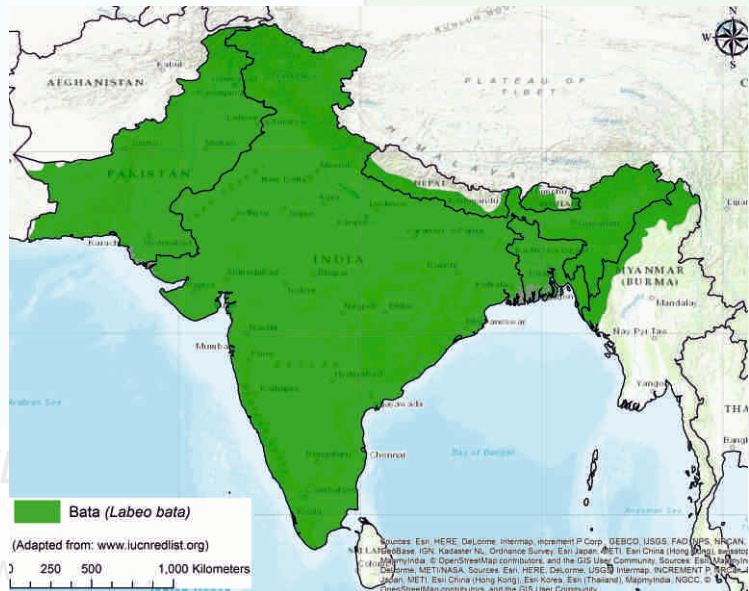
Population Trend:
Unknown

Conservation Status:

- IUCN Red List
Least concern
- CITES:
Not listed
- IWPA, 1972:
Not listed

Distribution

This species is distributed throughout India, Bangladesh and Pakistan, upto an elevation of 500m. It occurs throughout the Ganga River.



Key identifying features

This fish species has an elongate body. The snout is slightly projected beyond the mouth, and is often studded with pores.

Habit & Habitat

The species is benthopelagic and potamodromous. It is herbivorous and column feeder. The species inhabits fast flowing large rivers and are often found in floodplain wetlands.



Reproduction

Spawning occurs during July and August. Spawning success depends upon the access of gravid fish to a suitable spawning ground.

Major Threats

Loss of habitat and overexploitation.





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SNOW TROUT

*Schizothorax
richardsonii*

Vernacular name:
Asaila (Hindi),
Ngaka (Bengali)

Taxonomy:

- Class:
Actinopterygii
- Order:
Cypriniformes
- Family:
Cyprinidae
- Genus:
Schizothorax
- Species:
S. richardsonii

Population Trend:
Decreasing

Conservation Status:

- IUCN Red List
Vulnerable
- CITES:
Not listed
- IWPA, 1972:
Not listed

Distribution

Snow trout is widely distributed in the rivers of the Himalayan foothills in India, Nepal, Bhutan, Pakistan and Afghanistan. In the Ganga River, the species is confined to the upper stretch, from Gangotri to Pauri Garhwal. It is generally found within an elevation range of 1000-3500m.



Key identifying features

The body is streamlined and scales are very small. Mouth is inferior, with fleshy and flat lower lip, covered with a set of raised papillae forming the sucker. Lower jaw has hard, horny and sharp edge. It has two pairs of short barbels, maxillary and rostral. Dorsal spine is strong and serrated posteriorly.

Habit & Habitat

This species inhabits mountainous streams and rivers, prefers river bed with boulders, and pebbles. It is primarily a bottom feeder and feeds on algal slimes, detritus and insects attached on the rocks.



Reproduction

It is a potamodromous species and breeds during April-May, before the monsoon floods the rivers and streams. The fry grows to such a size as to bear the rigour of the flood waters.

Major Threats

Introduction of exotic fish species, loss of habitat and habitat connectivity, loss of access to spawning ground, destructive fishing activities and over-fishing are the major threats to the species.



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Notes

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