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## A preliminary survey of River Yamuna from Bhareh confluence to Betwa confluence at Hamirpur District U.P. India

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### Abstract

A detailed exploration of river Yamuna was carried out between Bhareh confluence (N 26° 27' 19.1 E 079° 15' 01.7) to Betwa confluence (N 25° 54' 56.0 E 080°13 '45.8) Hamirpur District U.P. The entire study area is covering about 192Km from Bhareh confluence Etawah to Betwa confluence Hamirpur. The survey was conducted between 5 October 2015 to 8 October 2015. The study stretch was surveyed by motor boat and sometimes on foot for documented important land marks and various activities. The general achievements were-

- At Bhareh confluence (Chambal with Yamna) water was found less polluted due to mixing water of Yamuna water.
- Avian fauna was satisfactory.
- Gharial population is higher than mugger.
- Dolphin population is 7 in entire study area.
- Jackal population is satisfactory.
- Deforestation fishing sand mining are main anti conservation activities.
- River bank condition is much concern.
- A number of invertebrates noticed like as Annelids, Molluscs and Arthropods.
- Introduction of new species as Ban gai.

**Keywords:** preliminary survey, River Yamuna, Bhareh, Betwa

### 1. Introduction

The Chambal is Perennial River, having its origin from Vindhya range near Mhow District of MP. It flows in a North and east direction through Rajasthan U P and M P and also make boundaries. This River join with Yamuna near Bharah, District Eatawh in U P. Chambal declared as protected area as under Gharial conservation in 1978 up to Pachnada. Downstream from Pachnada River Yamuna is unprotected area. At present most of the researchers are involved to study wild species in their natural habitat in River Chambal. Downstream from Pachnada to Hamiepur has totally unexplored stretch only a very few little information has been available about wild species of this stretch

The researchers are confined to laboratories. Investigation of the real natural sites of species are very few and rare (Rao and Behra, Rao and Hussain, Sherma and Singh, Singh, singh et. al) [1, 2, 3, 4, 5].

Very little think have been given to conservation of wild species and maintenance of ecosystem and biodiversity which resulted elimination of most of the wild species such as Dolphin Gharial, Mugger, Turtles Birds and other species inhabiting in study area.

The aim of this study is to explore real status of wild species of river Yamuna where they live, feed and breed. Through this study we are find noteworthy observations and given valuable suggestions for enhance and boost the efforts of conservation of wild species such as Dolphin Gharial Muggers, Turtles, Birds and other terrestrial anima ls Like as Antelopes, Jackals, Monitor lizards, Wolf, Hyena, Porcupine Pangolin etc.

### Methodology

The survey has been conducted between 5 October 2015 to October 2015 from Bhareh to betwan confluence covering area about 192 km, in River Yamuna l. This study area situated between (N 26° 27' 19.1 E 079° 15' 01.7) E longitude and L latitude (N 25° 54' 56.0 E 080°13

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'45.8). The status survey of river Yamuna was conducted by motor boat or on foot. The all observations in relation to important landmarks were recorded on field sheet, A binocular was used for visual aids and A 10 x Sony camera used to photographic evidences.

Occurrence of major species which over ½ kg in weight were recorded by direct sightings. Sightings of Mugger and Gharials were noted to basking sites. Occurrence of dolphin were recorded according to their leaping and surfacing. Migratory bird's information of habitat and whole year occurrence recoded according to local people, fisherman and forest Departments. And ant conservation activities like as fishing, sandmining, cremation and deforestation seasonal cultivation noticed according to direct observation.

### Results and discussion

A detailed map of the study stretch is given here. Photographic plates are also mentioned which show real structure of the sanctuary the whole study area is divided in to four zones.

ZONE 1 Bhareh confluence to Shergharah

ZONE 2 Sherghrah to Kalpi

ZONE 3 Kalpi to Katri

ZONE 4 Katri to Hamirpur confluence of Betwa

S. No	Zone	Quaardinates	Covering Area In Km
1	Bhareh to Shergharah Auraiya	N 2600 27' 19.1 E 079 015'01.7	50
2	Shergharah to Kalpi	N 260 24 7802 E 079 29 2.71	60
3	Kalpi to Katri	N 260 07 075 E 079 45 362	47
4	Katri to Betwa confluence	N25 <sup>0</sup> 57' 41.3 E 080 <sup>0</sup> 09' 63.0	35

#### 1. Investigation from Bhareh to Sher gharah Bridge Auraiya

Water Colour light blackish

Water Temperature 17 C<sup>0</sup>

River bank condition muddy sandy on both sides.

Flow of Water fast

Vegetations Jolly flora, calocasia, Jhao, Ranunuclous and Dabs grass.

Fishes climbing peach, cat fishes, Rohu and Tor tor.

Reptiles two adult Gharials (*Gavialis gangeticus*).

Aves Grey heron, Black Winged Stilt, Ospray, River Lapwing, Egyptian Vulture, Demoiselle Crane, Black Ibis, Wooly Necked Stork, Paria Kite, Cormorant Painted Stork, Pied kingfisher, Gull, and Ring plover.

Mammals 1 adult Dolphin (*Platanista gangetica*)

Invertebrates Dragonfly, Butterfly, Crab, Uni valves and bivalves.

Anticonservation activities Water lifting Pumping, Seasonal Cultivation, Deforestation and cremation activities.

Fishing boats 80 fishing Boats observe after Pacnada to Sherghrarh Due to unprotected area.5 JCB Machine and sand mining at high level.

#### 2. Investigation from Shergarah to Kalpi

Water Colour light blue

Water Temperature 17C<sup>0</sup>

River bank condition muddy sandy

Flow of Water slow to medium

Vegetations Neem, Jolly flora, Dab grass, Ranunuculous, Calocasia, Sheesham.

Fishes Climbing perch Anabas, Tilapia mosambicus.

Reptiles soft shell turtle and Hard shell shell turtles 1 Gharial Juvenile Monitor Lizard and Viskhaper.

Aves Sarus Crane, Flamingo, White Ibis, Black ibis, Black Necked Stork, Grey Heron, Spotted duck, Pretincole, Francolin, Lesser coucal, Black winged Stilt, Plover, Open bill, Pied kingfisher, River lapwing, painted stork, Red witted lapwing, Cormorant, Egyptian vulture, White necked stork. Egret Long Egret. Swift.

Mammals Dolphin 2 adult and one calf( N 26 20 8 37 E 079 31 878) 10 Jackals 1 wolf, Invertebrates Dragon fly, Damsel fly, Cricket Balostoma, Gryllotalpa, Butterfly, Moths, Crab, bivalve and uni valves.

Anti-conservation activities Water lifting Project, Sand mining, Fishing and seasonal cultivation.

Fishing boats 77

#### 3. Investigation from Kalpi to Katri

Water Temperature 17 C<sup>0</sup>

River bank condition Muddy sandy

Flow of Water High and medium

Vegetations Jolly flora, Calocasia Dab grass, Neem, Sheesham and Calotropis procera. Etc.

Fishes Anabas, cat fishes and Tilapia.

Reptiles Indian soft shell turtle, Monitor Lizard and Calot.

Aves

Pretincole, Grey Heron, Long Necked stork, Egret, Pond heron, Black belly turn, Egyptian vulture, River Lapwing, Open bill, Painted stork, Cormorant, Flamingo, and Black winged stilt.

Mammals 1 adult Dolphin +1 calf dolphin, (2604144 E 079 58874) Jackal and wolf

Invertebrates Dragon fly, Damsel fly, Butterfly, Crab, Water beetle and Bellostoma.

Anticonservation activities fishing agricultural Practices, Cremation, Sandmining Water lifting Projects.

Fishing boats 100 fishing boats

#### 4. Investigation from Katri to Betwa confluence

Water Colour Blue

Water Temperature 16 C<sup>0</sup>

River bank condition Muddy sandy

Flow of Water medium

Vegetations Calocasia, jolly flora, Dab grass Ber, Raunj, kareel Neem Sheesham etc.

Fishes Tilapia, Cat fishes and Anabas.

Reptiles Katahwah Three Gharial hatchlings,( N2604120 Eo80 05120)

Aves Grey heron, Black necked stork, Cattle Egret, Pond heron, Egyptian vulture.

Mammals Jackal, wolf Neel gai, Deer occurrence information.

Invertebrates Dragon fly, Butterfly, Moths, Ants Cricket.

Anticonservation activities Water lifting Project Maha zal Jhonga Zal, Cremation and Seasonal cultivation activities.

Fishing boats 29 fishing Boats



Flamingo *Phoenicopterus ruber* Photo By C. P. SINGH

Plate 1: Flamingo at Pankighat GPS N 26<sup>0</sup>09' 0.08 E 079<sup>0</sup> 57' 83.4





Painted Stork *Mycteria leucocephala* Photo By C. P. SINGH  
Painted stork Flock at Juheekha GPS (N 26° 25' 34.4 E 079° 13' 52.4)



Rober fly  
Survey team At Shergharah Bridge Auraiya GPS (N 26° 24' 78.2 E 079° 29' 27.1)



Demoiselle Crane *Grus virgo*  
Photo by C.P.SINGH  
Demoiselle Crane at Juheekha GPS (N 26° 25' 34.8 E 079° 13' 52.4)



Black necked stork *Ephippiorhynchus asiaticus*  
Photo by C.P.SINGH  
Black Necked Stork at Bhadora sandbar Gps (N 27° 22' 24.08 E 079° 29' 94.4)



Basking Gharial *Gavialis gangeticus* at Bhareh confluence  
Photo by C.P.SINGH  
Basking Gharial at Bhareh Confluence GPS (N 26° 27' 19.1 E 079° 15' 01.7)



Grey heron *Ardea cinerea* at Betwa confluence  
Photo by C.P. SINGH  
Flock of Grey heron at Betwa confluence GPS (N25° 57' 41.3 E 080° 09' 63.0)



Plate 1: Flamingo at Pankighat GPS N 26° 09' 0.08 E 079° 57' 83.4

During our survey we found that Yamuna River provide natural habitat for a number of aquatic animals as well as terrestrial species. The area is monitored by us where wild fauna are free to move, breed, feed and attained their necessities for survival. This area is good for wild animal diversity Mishra and chauhana 1995 C P SINGH AND CHAUNA 2012. The population of Birds was found Satisfactory. Black winged stilt (*Himantopus himantopus*) observed in flocks of about 80 to 90 numbers and sit on near dirty water for searching of food so it a good indicator of water pollution. Prettincole also found in flocks of 200 to 300. Grey heron populations good they observed in each zone. but Open bill, Flamingo Black necked

stork white ibis open bill and spoon bill were found in less numbers population of Egyptian vulture is average. Neelgai increase on wide range. They cause serious damage of crops and siltation. The new species also introduced in this area known as Bangai, they also nuisance for farmers. But the population of Porcupine and pangolin is much concerned due to poaching and Habitat destruction and environmental conditions. In carnivores the population of Jackals is increasing on wide range but on other hand the absence of Leopard in the study area. In our survey we have noticed two Wolf in River basin area.

7 dolphins were recorded in study area in zone 2<sup>nd</sup> and 3<sup>rd</sup> and 6 gharials, Hatlings and one adult Mugger near Pachnada and the population of soft shell turtle is higher than hard shell turtle.

In each zone 50 fishing boats have been observed in average number about 200 boats were recorded so this indicates that highly fishing activities and serious threats for wild species mainly for gharial and dolphin and turtles.

Four water lifting projects have set up in river Yamuna for irrigation this creates slow water current and lack of water causes habitat fragmentation of pools living creatures in river system. Sand mining occurred at Beejalpur and Kalpi on wide scale about 10 jcb machines were found and 30 loaded trucks of sand.

### Recommendations

Based on the results of this study, the following suggestions are provided for future use.

1. This area should be declared as protected area under Chambal Sanctuary.
2. Regular interval surveys should be conducted for monitoring of wild species both aquatic as well as terrestrial species.
3. There should be a ban on fishing, sand mining and deforestation in this abode of creatures.
4. There is a great need of organization of wild life task force for conservation of wild animals and their natural abode.
5. It can be possible to reintroduce leopard for maintenance of food chain which also will help in controlling of increasing population of Neelgai which causes serious damage of crops so that is a concern for farmers.
6. Awareness programmes should be organized among the local communities, this will enhance and boost the efforts of conservation programmes of river biodiversity.
7. Most of staff members are uninterested about wild life so there is a great need to educate them about nature.
8. A new strategy should be prepared for water lifting project which regulates excess utilization of water.

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