



Fish Faunastic Diversity in Kosi River at Supaul, Bihar

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ABSTRACT

The present study was conducted on some stretches of Kosi River in Supaul, Bihar. It is an important tributary of the Ganga river system and serves as a basis of livelihood and employment for many surrounding fishing communities. Despite of its fisheries and agricultural importance, studies concerning the ichthyofaunal diversity, eco-fishery status and ecology are limited. The present communication deals with ichthyofaunal diversity in this river. The fish fauna of this stretch of Kosi River is comprised of 25 species, which belongs to 8 families. Wanton fishing methods such as fish poisoning, uses of restricted fishing gear and small mesh sized fishing net were also observed.

Key Words: Fish diversity, Fishing community, Kosi River, Livelihood, Wanton fishing.

INTRODUCTION

Kosi River is an important tributary of mighty Ganga River system. It originates from Himalaya, Nepal and flow through the different districts of Bihar and meets the Ganga River system at Kursela, Katihar, Bihar. It harbours rich diverse fauna of many commercially important fishes. India is blessed with vast water resources in the form of sea, estuary, rivers, canals, reservoirs, streams and associated wetlands. Rivers are playing an important role in the country's inland fish production and thereby helping the country to meet the challenges of nutritional security of the people, besides providing opportunities for livelihood and new employment generation. Despite this fact, rivers are one of the most threatened habitats. Inland fish production as well as fish diversity is decreasing because of pollutions, wanton fishing methods and other anthropogenic activities. However, scientific and eco-friendly approaches of development, coupled with an integrated management plan are the right options for increasing fisheries production of the country. India is one of the mega biodiversity hotspots in the world and stands on the ninth position in terms of freshwater mega

biodiversity (Mittermeier *et al*, 1997). A study of the ichthyofaunal diversity of the river Kosi at Almora district of Uttarakhand during January 2013 to December 2013 revealed 12 species of fish, which belongs to families Cyprinidae and Botinae (Selakoti, 2018). Pinkey (2016) conducted surveys during August 2015 to January 2016 to predict the diversity of the fishes in Koshi Barrage; species diversity was found to be higher in winter (1.47) than in rainy season (1.18).

Koshi River and their catchment area serves as an important source of fish, irrigation that supports the livelihood and employment for many surrounding fishing communities. Despite its fisheries importance, studies about the ichthyofaunal diversity, eco-fishery status and ecology are limited. The present communication deals with ichthyofaunal diversity in this river at Supaul district of Bihar.

MATERIALS AND METHODS

The some stretches of Kosi River in the district Supaul, Bihar were selected for the study of fish diversity for a period of one year from June 2019 to May 2020. Fish samplings were carried out through

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Table 1. Fish species available in Kosi River, Supaul, Bihar

Sl. No.	Family	Species
1	Cyprinidae	<i>Catla catla</i> (Hamilton-Buchanan)
2		<i>Labeo rohita</i> (Hamilton-Buchanan)
3		<i>Cirrhinus mrigala</i> (Hamilton-Buchanan)
4		<i>Cirrhinus Reba</i> (Hamilton)
5		<i>Puntius sophore</i> (Hamilton-Buchanan)
6		<i>Puntius conchoni</i> (Hamilton-Buchanan)
7		<i>Puntius phutunio</i> (Hamilton-Buchanan)
8		<i>Puntius terio</i> (Hamilton-Buchanan)
9		<i>Puntius sarana sarana</i> (Hamilton-Buchanan)
10		<i>Amblypharyngodon mola</i> (Hamilton-Buchanan)
11		<i>Parluciosoma daniconius</i> (Hamilton-Buchanan)
12		<i>Esomus danricus</i> (Hamilton-Buchanan)
13	Clupidae	<i>Gudusia chapra</i> (Hamilton-Buchanan)
14	Bagridae	<i>Mystus vittatus</i> (Bloch)
15		<i>Aorichthys seenghala</i> (Sykes)
16		<i>A. aor</i> (Ham-Buch)
17		<i>M. cavasius</i> (Ham-Buch)
18	Schilbeidae	<i>Pseudeutropius atherinoides</i> (Bleeker)
19		<i>Eutropiichthys vacha</i> (Hamilton,)
20	Siluridae	<i>Wallago attu</i> (Schneider)
21		<i>Ompok bimaculatus</i> (Bloch)
22	Mastacembelidae	<i>Mastacembelus armatus</i>
23	Belonidae	<i>Xenentodon cancilla</i>
24	Cobitidae	<i>Lepidocephalichthys guntea</i>
25		<i>Botia lohachata</i>

the cast net as well as gillnet as per suitability of the location. The fishes were collected personally by above said method and also collected from the local fish market too. The collected samples of fishes were identified based on standard taxonomic literature (Jayaram, 1981; Talwar and Kacker, 1984; Talwar and Jhingran, 1991) and categorised based on their family.

RESULTS AND DISCUSSION

The fish species found in the river during the entire study period were categorized based on

family and listed in table 1. Seasonal variations in water level were observed in the river. Water level was maximum during monsoon season because of heavy rain during the rainy season. Kosi River is an important source of fish catch for the local fishermen and also the good source of irrigation for different agricultural crops in the district. Still, these are underutilized as far as fishery development is a concern. Capture fishery is prevalent in the river where natural seed grow from natural fish food organism present in the water body. The Kosi River had some native fish species of adjacent rivers, the

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fish fauna is comprised of 25 species, which belongs to 8 families. Kumar and Joshi (2008) reported the presence of 23 species from 7 families in the different wetlands of Uttar Pradesh. The catch was seen to be low from January to May. During these months, fishing frequency is less and mainly done by gillnet and caste net.

Wanton fishing methods such as fish poisoning, use of small mesh sized fishing net and application of restricted fishing gear were also observed in Kosi river at Supaul district of Bihar. These wanton fishing methods are very harmful for the existing fish population in this particular River, adversely affected the fish abundance and recruitment process. Mesh size regulation and monsoon fishing ban must be practised to ensure the fish recruitment process (Chandra and Saxena, 2013). Fisheries recourses are experiencing alarming pressure of extinction due to combined effect of environmental degradation, overexploitation, un-judicial use various crop protection pesticides, different type of aquatic pollution and lack of proper management (Chandra and Saxena, 2014).

Srivastava (2013) researched fish diversity and conservation perspectives of Gandak River in Uttar Pradesh, India and found 54 commercially important species of fishes in this tributary of the Ganga river system. Estimation of fish genetic diversity is essential for the conservation of fish population in a particular water body and molecular marker is an excellent tool for such purposes (Chandra *et al* 2010).



Photographs: Fishes of Kosi River, Supaul, Bihar, India.

CONCLUSION

The mentioned stretch of Kosi River, Supaul, Bihar, India is rich in fish biodiversity and source of livelihoods for the residing fishing community. Besides, it a source of quality fish protein for neighbouring populations thus helpful in providing nutritional security. However, the fish populations are decreasing day by day and cause a serious threat to the ecology of riverine ecosystem. Pollutions, overexploitation and indiscriminate fishing methods have been observed throughout the study period, which has resulted in a drastic decrease of fish populations. Awareness of fishing community and enforcements of inland fishing rule and regulations is very much important for the conservation of these valuable fish recourses. Further research about reproductive biology, bionomics and genetic diversity of inhabiting fishes is essential for effective utilization and conservation of fisheries resources of this river.

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