

## Studies on ichthyofaunal diversity of partapur barrage at Dakra, Makhdumpur, Jehanabad, Bihar, India

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### Abstract

The present investigation deals with Ichthyofaunal diversity of Partapur barrage in Jehanabad district. Total 39 species were listed belonging to 21 genera, 11 families and 5 orders during study period from June to March 2013 and 2014 respectively. Due to seasonal in nature, high temperature, pesticides pollution and diseases are the major threats of fish diversity of this selected area.

**Keywords:** ichthyofaunal diversity, partapur barrage, jehanabad

### 1. Introduction

India has rich resource of inland fresh water fish fauna with about 940 species which constitute about 38% Indian ichthyofauna and are of considerable economic and scientific value. Biodiversity is an important ecological factor for the homeostasis of an ecosystem. The fishes which constitute 25% of all vertebrates and are cheap and chief source of proteins and minerals. The fresh water fishes are an important of global biodiversity (Reid *et al.* 2013) [6]. India is one of the leading mega biodiversity country in the world and occupies in the ninth position in terms of fresh water mega biodiversity (Mittermeier *et al.* 1997) [5]. The state of Bihar is one of the important aquatic biodiversity richness especially for fish fauna in both lotic and lentic water.

#### 1.1 Study Area

The study were done in a stretch of approximately 3 Km lush green area above and below at Partapur barrage in Jehanabad district. Its geographical co-ordinates are 25°13'0" N latitude and 84°59'0" E longitude. The barrage is constructed meant for irrigation and is seasonal and water lodge nine to ten months. The water receive from the channel of Phalgu River and passes through these study area and enter into Punpun River and finally falls into the Ganga River. This area has a potential of fish landing avenue due to suitable breeding and feeding ground.

### 2. Materials and Method

Fish samples were collected weekly during the study period with the help of local tribe called Bhuyian by using modus operandi like cast net, gillnet, trap net, bag net, hook and lines and by manually hand trapping. The collected fish specimens were preserved in 10 % formalin. The preserved fish specimens were identified by using standard literature of Day (1958), Jhingran & Talwar (1991), Jayram (2010) and Hamilton (1822).

### 3. Results and Discussion

The total 39 fish species were observed belonging to five orders including cypriniformes, siluriformes, ophiocephaliformes, synbranchiformes and clupeiformes at Partapur barrage during the study period. The most dominant species were recorded in order of cypriniformes and least in order of synbranchiformes (Table -1 & Fig. 1).

In the present investigation the fish faunal diversity of Partapur barrage were comprised of 5 orders, 11 families, 21 genera & 39 species. In terms of order wise percentage cypriniformes contributed 48.71%, followed by siluriformes 28.20%, ophiocephaliformes 10.25%, clupeiformes 7.69% and synbranchiformes 5.15%. In cypriniformes *Puntius* and *Labeo* were reported in large number (Fig. 1).

In terms of family wise distribution, Cyprinidae contributed 46.20% followed by Bagridae 19.0%, Channidae 10.25 %, Engulidae 6.4%, Mastacembelidae 5.5%, Siluridae 4.5%, Cobitidae 2.51%, Claridae 2.3%, Schilbeidae 1.7%, Heteropneustidae 1.50% and least Notopteridae 1.29% (Table-2 & Fig. 2).

In the present study 12 genera & 19 species were recorded in order of cypriniformes, 6 genera & 11 species in siluriformes, 1 genera & 4 species in ophiocephaliformes, 2 genera & 3 species in clupeiformes and 1 genera & 2 species in synbranchiformes.

Family cyprinidae was represented by three species of genus *Labeo*, four species of genus *puntius*, two species of *Cirrhinus*, two species of *Salmostoma* and one species of each of *Amblypharyngodon*, *Catla*, *Pseudogaster* and *Esomus* respectively. The family Bagridae represented by five species of genus *Mystus*. Channidae showed four species of genus *Channa* and Mastacembelidae showed two species of genus *Mastacembelus*. In Notopteridae one genus *Notopterus* and its two species were recorded. Siluridae represented two genera *Ompak* & *Wallago* and possessed two and one species respectively. The family Engulidae, Cobitidae, Schilbeidae, Claridae and Heteropneustidae showed one genus each including *Setipinna*, *Lepidocephalus*, *Alia*, *Clarius* & *Heteropneustus* respectively and they also showed one species each.

Sharma (2008) [8] reported 87 species under 36 genera belonging to Cyprinidae family from fresh water of Nepal. Shinde (2009) [9] reported 11 species under 10 genera belonging to cyprinidae family from Harsul Savangi dam in the district of Aurangabad (Maharashtra). Sakhare (2001) [7] reported 23 species belonging to 7 orders where cyprinidae family was dominant with 11 species from Jawalgaon reservoir of solapur district of Maharashtra. Khedkar & Gynanath (2005) [4] reported 37 species from Issapur dam in district Yavatmal where cyprinidae family was dominant with

20 species. In the present investigation cyprinidae family was dominant and similar to above findings. The pollution by agro farming of adjoining area, less water content and intense hot climate condition affected the growth

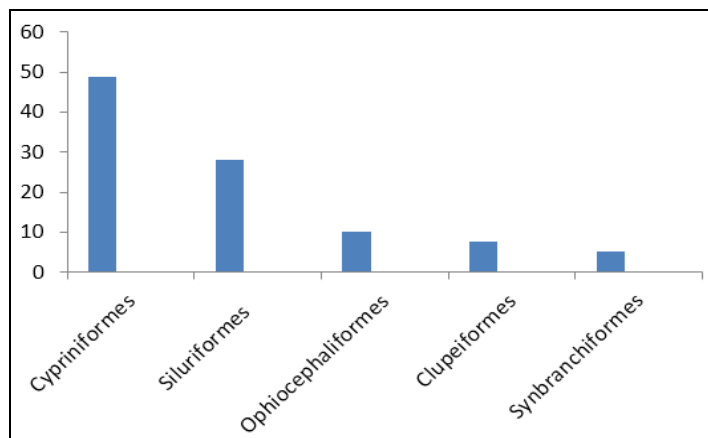
and distribution of fish fauna. The species having more adaptive capabilities showed in more quantities than those which are non-adaptive in nature.

**Table 1:** Diversity list of fish fauna of partapur barrage at dakra, Jehanabad.

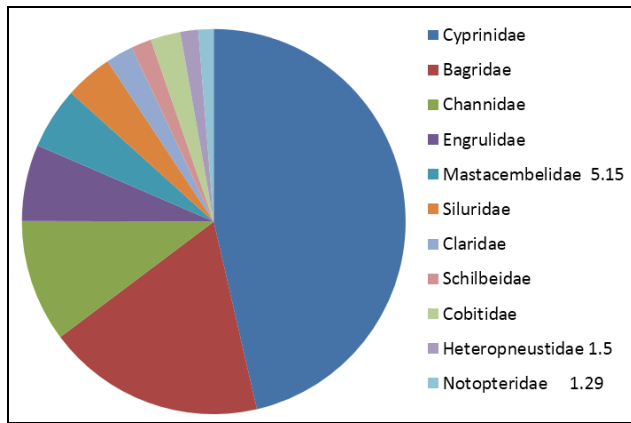
S. No.	Order % Contribution	Family	Scientific Name	Frequency	
1	Cypriniformes 48.71	Cyprinidae	Puntius sarana (Ham.)	Penty	
			Puntius sophor (Ham.)	Plenty	
			Puntius ticto (Ham.)	Plenty	
			Puntius chola (Ham.)	Plenty	
			Labeo rohita (Ham.)	Average	
			Labeo bata (Ham.)	Minimum	
			Labeo fimbriatus (Bloch.)	Minimum	
			Catla catla (Ham.)	Minimum	
			Cirrhinus mrigla (Ham.)	Minimum	
			Cirrhinus reba (Ham.)	Minimum	
			Salmostoma bacaila (Ham.)	Plenty	
			Salmostoma clupeioides (Bloch.)	Average	
			Rasbora daniconius (Ham.)	Average	
			Pseudogaster gora (Ham.)	Minimum	
			Esomus danricus (Ham.)	Minimum	
			Amblypharyngodon mola (Ham.)	Average	
			Aspidoparia morar (Ham.)	Average	
			Brachydanio rerio (Ham.)	Minimum	
			Lepidocephalus guntia (Ham.)	Minimum	
2	Siluriformes 28.20	Bagridae	Mystus bleekeri (Day)	Penty	
			Mystus cavasius (Ham.)	Plenty	
			Mystus vitatus Bloch.)	Plenty	
			Mystus aor (Ham.)	Minimum	
		Siluridae	Mystus seenghala (Sykes)	Minimum	
			Ompak bimaculatus (Bloch.)	Rare	
			Ompak pabda (Ham.)	Rare	
		Schilbeidae	Wallago attu (Bloch.)	Average	
			Alia coila (Ham.)	Average	
		Claridae	Clarius batrachus (linn.)	Average	
			Heteropneustidae	Heteropneustes fossilis (Bloch.)	Minimum
3	Ophiocephaliformes 10.25	Channidae		Channa marulius (Ham.)	Plenty
			Channa punctatus (Bloch.)	Plenty	
			Channa striatus (Bloch.)	Plenty	
			Channa orientalis (Bloch.)	Average	
4	Synbranchiformes 5.15	Mastacembelidae	Mastacembelus armatus (Bull.)	Average	
			Mastacembelus Pancalus (Ham.)	Average	
5	Clupeiformes 7.69	Notopteridae	Notopterus chitala Ham.)	Rare	
			Engraulidae	Notopterus notopterus (Pallas)	Rare
				Setipinna phasa (Ham.)	Average

**Table 2:** Family wise percentage distribution of fish fauna of partapur barrage at dakra, Jehanabad.

S. No	Family	Percentage (%)
1	Cyprinidae	46.20
2	Cobitidae	2.51
3	Notopteridae	1.29
4	Engrulidae	6.40
5	Mastacembelidae	5.15
6	Channidae	10.25
7	Bagridae	18.70
8	Siluridae	4.0
9	Schilbeidae	1.7
10	Claridae	2.3
11	Heteropneustidae	1.5
Total	11	100



**Fig 1:** Order wise Percentage distribution of fish fauna of Partapur Barrage at Dakra, Jehanabad. % orders.



**Fig 2:** Family wise percentage distribution of Fish fauna of Partapur Barrage at Dakra, Jehanabad.

#### 4. Conclusion

The pollution by agro farming of adjoining area, less water content, intense hot climate condition during summer and sudden outbreak of diseases affected the growth and distribution of fish fauna of this area. The species having more adaptive and disease resistant capabilities showed in more quantities than those which are less adaptive and disease resistant in nature.

#### 5. Acknowledgement

We are thankful to tribal people for providing fishes time to time and we are also thankful to principal for providing facilities for study, regular encouragement and proper motivation.

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