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Status of ornamental fish diversity in Jhang - A wet land of Kusheshwar sthan chaur

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Abstract
Kusheshwar Sthan located in North Bihar has one of the World's unique biodiversity and international importance. It is the 2nd largest protected area for birds since pre dependence for its large diverse congregation of birds. It is the largest wetland of Bihar having its own socioeconomic importance. The present study highlights the diversity of ornamental fish in Kusheshwar Sthan wetland. A total number of 36 species representing 16 families of class Actinopterygii were identified from Kusheshwar sthan wetland the various species of order Perciformes and Cypriniformes dominated inside the wetland followed by order Siluriformes, Mastacembeliformes Osteoglossiforms, Beloniformes and Tetraodontiformes respectively. During study period it was observed that highest number ornamental fishes were found in *jhang area* of northern and central sector of wetland. These ornamental fishes have high economic value .The study was conducted to explore the wild variety of ornamental fish and realise its importance as a livelihood option for local fisher folk.

Keywords: Kusheshwar Sthan**,** Ornamental fishes, jhang, biodiversity

1. Introduction
The Kusheshwar Sthan Wetland is located 65 km from Darbhanga town (MSL49m) in Biraul subdivision including the block Biraul Ghanshyampur. The low lying areas of these blocks are dotted with perennial ponds and lakes. During monsoon the flood water from nearby river Kosi fills the lake and water level of the lake rises more than 10,000 ha. It becomes inundated and join with Simri jheel & Kabar taal (AN IBA) (yahya 1995). Large no of local people have been dependent on this wetland for fishing and for some aquatic crops such as Makhana *(Euryale ferox)*

Ornamental fishes are characterized by a wide diversity of colour pattern which is keeping in aquaria to relive pressure on day to day materialistic life. The ornamental fish keeping is a popular hobby which is gradually replacing outdoor leisure activities and it is the second most hobbies after photography Sing and Dey (2006). According to psychiatrists, placing aquaria with ornamental fishes in the patient's vicinity could treat certain types of mental disorders Swain (2008). Ornamental fish called as ***living jewels*** due to its colours pattern & natural beauty. Bihar is a landlocked state where ornamental fishes are not paid much attention except a few species. Several ornamental fishes are yet to become popular. Bihar having natural resources in the form of wetlands, River, Maun's, Tanks, Oxbow lakes, etc., in which many ornamental fishes are inhabited .The wetlands of North Bihar is enriched in wild resources of the indigenous ornamental species. Bihar having rich aquatic resources, but due to its poor management only 40 % water bodies are used as a traditional aquaculture & remaining 60 % are of undeveloped. Kusheshwar Sthan is known as the winter capital of migratory birds. It is one of the best waterfowl habitats in India Kusheshwar sthan is famous for its Lord Shiva temple and is an important site for religious tourism. The Kusheshwar Sthan wetlands are famous for the fresh water food fish and ornamental fish. Most of the wetland ponds are covered with water hyacinth (*Eichhornia Crassipes*). The local fisherman bind water hyacinth together in small pocket of water bodies for fishing by a special technique known as ***jhang*** fishing. ***Jhang*** is artificial assemblage of wild fish after constructing of ***jhang*** left over for 10-20 days to aggregate fish and after that press net (chatty jaal) is used for catching of wild fish. The North Bihar, specially the Darbhanga district has endowed with large fresh water resources in the form of rivers and their tributaries, Ponds, tanks, wetlands (Chaurs), and canals.

Wetland is one of the prime aquatic resources of this district supporting a rich aquatic biodiversity.

North Bihar is still a virgin sector for exploitation of wild ornamental fish. The state is endowed with rich aquatic flora and fauna. The fish fauna compromises some of the important ornamental fish viz. *Colisa spp* (Khesra/Khosti/kotri), *Colisa lalia* (Khosti/stripped gourami), *Colisa chunna* (Honey gouramy), *lepidocephalus thermalis* (Sand loach/striped loach), *Botia derio* (Nekti loach), *Botia almorhae* (Tiger loach /striped loach), *Noemochilus triangularis* (Banded loach), *Eresthistes triangularis* (Galpuulani), *Glossogobius giuris* (Bulla), Alia coila (Banspatta),*Esomus danivica*(Flying barb), *Chanda nama* (Chanari), *Chanda baculius* (Chanari), *Chanda ranga* (Indian glass fish/chanari), *Xenantodon cancila* (Kawua), *Mastacembelus oatesii*(Gaichi), *Mastecembelus panculus* (Katgaichi/Spiny eel),etc having excellent export value. These are mostly available in local chaurs, manus, natural reservoirs, oxbow lakes, etc. and no specific gear is employed to catch them. Fishermen not aware about its export potential as an ornamental value and categorized them into weed fishes. The large quantity of ornamental fish are available in the north Bihar, especially in Mithilanchal region i.e., Darbhanga, Madhubani, Samastipur, etc., The ornamental fish is being sold in the local market @ Rs. 90-110 /kg & consumed by local people as a food fish.

2. Materials and Methods:

The water-spread area of the Kusheshwar Sthan chaurs (26 ° 10′N 86° 02′ E) varies from 100 to 10000 ha during the summer and monsoon respectively. A significant part of the freshwater and silt input to the chaurs comes from the Koshi river. Based on its physical and dynamic characteristics, the Kusheshwar Sthan chaurs is divided into two sectors. The northern sector receives discharge of the flood waters from the rivers. The southern sector is relatively smaller. The entire study was undertaken mostly in the morning hours. The fishes are collected at 15 days intervals with the help of local skilled fishermen. Fisherman bind the water hyacinth left over for 15 - 30 days and Press net are used for collection of fish. From each jhang 100-500 kg fish is collected from each jhang. A individual fish are collected and kept in a bucket with an battery operated aerator and transported to the laboratory. They are initially acclimatized to the tank environment. The healthy fishes were transferred to the aquarium for further studies. The fishes were identified by using standard literature Talwar *et al.,* (1992), Talwar and Jhingran, (1991), Fish Base (2003).

Ornamental Fishes of Kuseswarsthan Chaur

1. *Notopterus notopterus*

2. *Notopterus chitala*

3. *Labeo calbasu*

4. *Puntius ticto*

5. *Puntius conconius*

6. *Puntius Sarana*

7. *Chela laubuca*

8. *Oxygaster bacaila*

9. *Amblypharyngodon mola*

10. *Botia Dario*

11. *Noemacheilus botia*

12. *Esomus danricus*

13. *Lepidocephalichthys guntea*

14. *Somileptes gangota*

15. *Bagarius bagariu*

16. *Ompak bimaculatus*

17. *Aorichthys seenghala*

18. *Mystus vittatus*

19. *Ailia coilia*

20. *Channa punctatus*

21. *Channa striatus*

22. *Channa gachua*

23. *Channa marulius*

24. *Macrognathus aculeatus*

25. Mastacembelus pancalus

26. Mastacembelus armatus

27. *Colisa fasciatus*

28. *Chanda nama*

29. *Chanda ranga*

30. *Colisa chuna*

31. *Nandus nandus*

32. *Glossogobius giuris*

33. *Tetradon cutcutia*

34. *Xenentodon cancila*

35. *Amphipnous Cuchia*

Field Photograph of Kuseswarsthan Chaur (Wet Land)

Fig 1: Disco Net Used for Capture of Ornamental Fish

Fig 2: Trap net

Fig 3: JHANG in Kusheshwar Sthan Chaurs

Fig 4: Fish Collection in Jhang Area

Fig 5: Migratory Bird in Kusheshwar Sthan Chaur.

3. Results and Discussion

A total number of 35 species were recorded during the study period from the Kusheshwar Sthan Wet land (in Laril, Mahisath, Dabadih, and Kamaldha chaur). The order Perciformes and Cypriniformes has emerged as most dominant group and next to Siluriformes order among these diverse coloured fish communities. The maximum numbers were recorded during pre-monsoon and post-monsoon period of the wetland of Kusheshwar Sthan Chaur.

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