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## Threatened and endemic ichthyofauna of the river Kharkai, Jharkhand with suggestion for their conservation

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**Abstract :** The freshwater fish fauna of Kharkai River (Jharkhand) has been reviewed in respect of the threatened and endemic freshwater fishes of our country. At present forty four species belonging to thirty six genera, fifteen families of freshwater fishes are known to occur in this river. It has been found that this river contains forty three threatened and one endemic freshwater fishes of India. Since for several reasons a large number of freshwater fishes of our country has been designated as the threatened species, it is therefore, their conservation measures should be immediately adopted to protect them. A number of factors are responsible for the present position of the freshwater fishes, of our country causing concern for their existence and survival. Some of the factors are like overfishing, pollution, deforestation, habitat alteration primarily due to construction of dam across rivers, intensive aquaculture, competition from the exotic species etc. Some conservation measures have been described in this paper.

**Key words:** Freshwater, Fish, Threatened, Endemic, Conservation

### INTRODUCTION

The river Kharkai originates from Mayurbhanj district of Orissa near Badampahar region. It comes from plateau land as small narrow canals, then take wide shape gradually and meet the Subarnarekha river at Domahani (River Meet) near Sonari, Jamshedpur river tributary Kharkai is the main tributary of the river Subarnarekha. Discharge from many small and medium scale industries of Jamshedpur are seen to flow into Kharkai which empties into Subarnarekha at Domahani. The river spate during rainy season. It houses many kinds of limnafauna. One of the most important group of these limnafauna is the fishes. The account of the fishes of the river are found in the work of Bose *et al* in (1974-76) Mahata & Gorai (1976-77) Mishra (1978). The detail account of fishes found in river, is still wanting

and therefore a thorough investigation in this aspect is required. However in the present paper the works of the above workers have been reviewed as well as also studied fish resource places like fish markets of nearby places of the river. A list of vulnerable, endangered, rare and endemic species of India found in the river Kharkai is prepared for information and knowledge of all concerned.

### MATERIALS AND METHODS

The available published literature on the fishes of river Kharkai and field study in different fishes resource places of the river are made during this investigation (February 2011-January 2012) to prepare the list of vulnerable, endangered, rare and endemic species of fishes. In this regard opinions of the fisherman, fish catchers and other rural people who are fond of fishes are consulted for the present study.

### OBSERVATION

The fish species found in river Kharkai which were

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recorded vulnerable, endangered , rare and endemic species are as listed below:-

**Table 1:** The fish species found in river Kharkai

<b>A) Vulnerable Species :</b>	
<b>Name of Species</b>	<b>Family</b>
1. <i>Gudusa chopra</i> (Ham.)	Clupeidae
2. <i>Notopterus notopterus</i> (Pallas)	Clupeidae
3. <i>Oxygaster phulo</i> (Ham.)	Cyprinidae
4. <i>Barilius bola</i> (Ham.)	Cyprinidae
5. <i>Barilivs bendelisis</i> (Ham.)	Cyprinidae
6. <i>Danio acqipinnatus</i> (Mc.Clelland)	Cyprinidae
7. <i>Chela laubuca</i> (Ham.)	Cyprinidae
8. <i>Amblypharyngodon microlepis</i> (Bleeker)	Cyprinidae
9. <i>Cirrhinus reba</i> (Ham.)	Cyprinidae
10. <i>Garra gotyla gotyla</i> (Gray)	Cyprinidae
11. <i>Garra mullya</i> (Sykes)	Cyprinidae
12. <i>Labeo calbasu</i> (Ham.)	Cyprinidae
13. <i>Labeo gonius</i> (Ham.)	Cyprinidae
14. <i>Puntius chonchonius</i> (Ham.)	Cyprinidae
15. <i>Puntius chola</i> (Ham.)	Cyprinidae
16. <i>Lepidocephalichthyes guntia</i> (Ham.)	Cyprinidae
17. <i>Noemacheilus rupicola</i> (Mc.Clelland)	Cyprinidae
18. <i>Rita rita</i> (Hams.)	Bagridae
19. <i>Mystus vittatus</i> (Bloch)	Bagridae
20. <i>Mystuc Oar</i> (Ham.)	Bagridae
21. <i>Mystus seenghala</i> (Sykes)	Bagridae
22. <i>Alia coila</i> (Ham.)	Schilbeidae
23. <i>Clupisoma garua</i> (Ham.)	Schilbeidae
24. <i>Pangasius Pangasius</i> (Ham.)	Pangasidae
25. <i>Bagarius bagarius</i> (Ham.)	Sisoridae
26. <i>Clarias batrachus</i> (Linn)	Claridae
27. <i>Heteropneustes fossilis</i> (Bloch)	Heteropneustidae
28. <i>Channa orientalis</i> (Bloch)	Channidae
29. <i>Rhinomugil corsula</i> (Ham.)	Mugilidae
30. <i>Anabas testudineus</i> (Bloch)	Anabantidae
<b>A) Endangered Species:-</b>	
<b>Name of Species</b>	<b>Family</b>
1. <i>Anguila bengalensis</i> (Grey)	Anguillidae
2. <i>Amphipnous cuchia</i> (Ham.)	Amphipnoidae
3. <i>Notopterus chitala</i> (Ham.)	Notopteridae
4. <i>Barilius bola</i> (Ham.)	Cyprinidae
5. <i>Tor tor</i> (Ham.)	Cyprinidae
6. <i>Tor puntitora</i> (Ham.)	Cyprinidae
7. <i>Ompok bimaculatus</i> (Bloch)	Siluridae
8. <i>Ompak pabda</i> (Ham.)	Siluridae
9. <i>Glyptothorax nelsoni</i> (Ganguli <i>et al</i> )	Sisoridae

## Srivastava & Singh: Threatened and endemic ichthyofauna of the river Kharkai, Jharkhand with suggestion for their conservation

### CONSERVATION STRATEGIES

The problems of protection and conservation of the fishes of river Kharkai are very similar to that of other rivers of the state Jharkhand as well as of the country. The fish population of this river and flowing water level of it is day by day decreasing on. Indiscriminate fishing in the river, deforestation of forest on the banks of both side of the river and discharge of effluents from various sources has decreased the fish population of the river. Considering these factors some suggestion for protection and conservations of the fishes are furnished below :-

- 1) Deforestation along the course of the river should further be avoided because it causes soil instability that increases turbidity of the water bodies. It also increases the temperature of the breeding ground as well as also increases the food availability of the fishes. Replantation is needed on both sides of the bank of the river, where vegetation has been destroyed, to avoid the soil erosion, to maintain the clear water and to maintain the required temperature of the spawning ground of the fishes as well as sufficient availability of food to fishes.
- 2) Pesticides and agricultural fertilizers along the water courses should be used very carefully. The fisherman and local people employed in fishing should be advised to use only rapidly degradable types of pesticides.
- 3) Effluents from industries should be released into the river systems after proper treatment to remove toxic materials. It is necessary for flourishing growth of planktons and to increase oxygen content of the river's water which are very essential for fish population and many other limno fauna.
- 4) Indiscriminate harvesting of fishes is another meanse to the whole fish population. This should be controlled

or monitored during the spawning period. Immature species should be protected by banning the use of very small mesh sized nets so that juveniles are not captured.

- 5) The vulnerable, endangered, rare and endemic fishes should not be captured while fishing the fishes the river for food purposes. The knowledge on the aspects should be conveyed to the fishermen and local people who usually capture fishes from the river for food and commercial purposes and this could be done through public awareness programme by the state fishery development concerned

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