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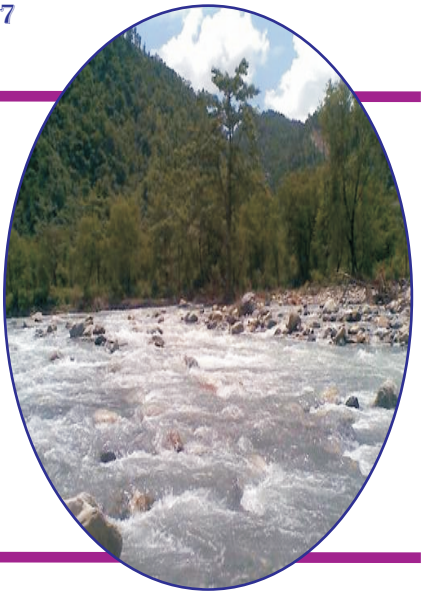

STUDY ON FISH DIVERSITY STATUS OF SONG RIVER, DOON VALLEY, UTTARAKHAND

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ABSTRACT :

An attempt was made to study biodiversity of fish fauna present in the Song River, Doon Valley, Uttarakhand. Fishes were collected with the local fisherman by using different local gears from 2015-16. The collected fishes were identified with the help of standard literature. The result of the present study depicted the occurrence of 25 species of fishes belonging to 6 order, 18 genera of 6 families.

KEYWORDS : *Fish Fauna, Song River, Diversity.*

INTRODUCTION:

For the exploitation and scientific development of aquaculture knowledge of existing fish fauna of the Song river is a prerequisite knowledge of fish diversity in particular region is essential not only for rational management of Icthyofauna of that region but also for their conservation strategies. Biodiversity is a term that has recently been widely used. It is the variety and variability among living organisms and the ecological complexes in which they occur. Nelson (1984) stated only 21723 fish species in the world. Day (1889) enlisted 1390 species of fish from British India. Talwar and Jhingran (1991) described 742 specis from freshwater in India. The family Cyprinidae contains maximum number of endemic fish (97 species) followed by the family Balitoridae (46 species) and the family Sisoridae (21 species) in India.

A notable contribution on the Indian freshwater fish systematic is credited to Hora (1920-1956). His works includes extensive survey of different parts of the country and report of many new species of from the Indian sub-continent. The study of fish fauna of Garhwal Himalaya have been initiated by Menon (1962, 1974) reported chick list of the fishes of Himalaya. Badola and Pant (1973) with reporting of 18 species from Uttarkashi district. Later Badola (1975) and Badola and Singh (1977 a, b, c) recorded 43, 28 and 33 species from Pauri, Chamoli and Tehri districts respectively. Hora and Mukherjee (1936) were first to publish a systematic list of fishes of Doon Valley. Later on the fish fauna of Doon valley attracted the attention of Lal and Chatterjee (1962), Singh (1969), Grover (1971), Grover et.al. (1994), Uniyal et.al. (2002) and Rauthan et. al. (2014) who contributed only in giving the systematic list of some fishes. Present investigation were thus started due to the fact that Icthyofauna of any region is dynamic is nature and what obtained yesterday may not be available today. The alternations in the nature of water bodies, introduction of exotic species by man rapid changes in the ecological conditions all conduct to marked changes in the freshwater ecosystem and thus effect the Icthyofauna.

MATERIALS AND METHODS

The Doon Valley is an unusually wide, long valley within the Shivalik hills in the lower Himalayas, in the

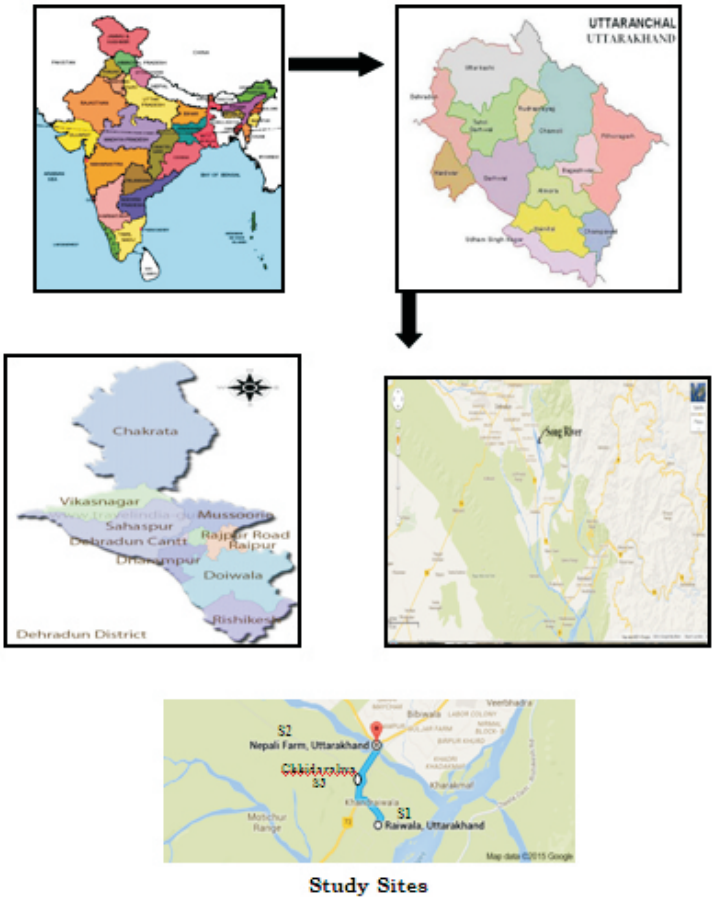
state of Uttarakhand and Himanchal Pradesh, India. Within the valley lies the city of Dehradun, the capital of Uttarakhand state.

The Doon Valley lies between two intermittent ranges of the Himalaya. It is bounded on cell rides by mountains, with one range running from the West to East (with Mussoorie at the centre) in a semi circular arc and one running at the South from Poanta Sahib to Haridwar. The valley also forms a watershed between the Yamuna and Ganges river systems.

The Song river is a river in Dehradun district that drains the central and eastern part of the Doon Valley. It originates as spring fed stream in the southern slopes of Mussoorie ridge of the Himalayan range and runs from Dhanaulti towards Narendra Nagar. As is common in hilly areas there are several streams running south from the mountains that merge into one river that emerges from the hills after Sahastradhara. Song is one of the largest river that drain the Doon valley, and its tributaries includes Kali Gad, Sahastradhara, Rispana river. The Song river is a river of Doon that drains the central and eastern part. The river chain flows through the forest of Chilla before its confluence with Ganga river at Raiwala.

FISH SAMPLING AND ANALYSIS

Fishes were collected with the help of local fisherman using different type of nets namely gill nets, cast net, drag nets, immediately photographs were taken with help of digital camera. Fishes were brought to laboratory and preserved in 8% formalin solution in separate specimen Jars according to the size of species. Small fishes were directly placed in the 8% formalin solution while large fishes were giving an incision in their abdomen and preserved. The meristic and morpho-metric characters were measured and identified up to the species level. With the help of standard keys and book Day (1889), Talwar and Jhingran (1991), Jayaram (1999), Bada (2009).



Study Sites

Table 1

Ecological status and diversity of Fish Fauna of Song river at Raiwala (S1), Nepali Farm (S2) and Chhiddarwala (S3) for the year September 2015 to August 2016

Fish Fauna	Song River			Ecological Status
	S1	S2	S3	
A: **Order Cypriniformes**				
1. Family – Cyprinidae				
1. *Barilius bola*	+++	+++	+++	Intermediate
2. *B. Vagra*	+++	+++	+++	Intermediate
3. *B. barna*	+++	+++	+++	Intermediate
4. *B. bendelisis*	+++	+++	+++	Intermediate
5. *Channa gauchua*	-	+	+	Rare
6. *Danio devario*	-	+	+	Rare
7. *Garra gotyla gotyla*	+++	+++	+++	Intermediate
8. *Puntius ticto*	+++	+++	+++	Intermediate
9. *P. sarna*	+++	+++	+++	Intermediate
10. *Labeo gonius*	-	+	+	Rare
11. *Labeo dero*	+	++	++	Intermediate
12. *Labeo dyochelius*	+-	+++	+++	Intermediate
13. *Tor tor*	-	++	++	Rare
14. *Tor putitora*	-	++	++	Rare
2. Family Schizothoracinae				
15. *Schizothorax plagiostomus*	-	-	++	Rare
16. *S. progastus*	-	+	++	Rare
B. Order – Beloniforms				
3. Family – Belonidae				
17. *Xenentodon cancila*	+++	+++	+++	Intermediate
4. Family – Cobitidae				
18. *Botia dario*	+	++	++	Rare
19. Nemachelius *savona*	+++	+++	+++	Intermediate
20. *Nemachelius rupicola*	+++	+++	+++	Intermediate
21. *N. botia*	+++	+++	+++	Intermediate
22. *Crossocheilus latius latius*	+	+++	+++	Intermediate
C – Order – Mastacembeliformes				
5. Family - Mastacembellidae				
23. *Mastacembelus armatus*	++	++	++	Intermediate
D. Order – Silurformes				
6. Family – Sisorida				
24. *Bagarius bagarius*	+	+	+	Rare
25. *Glyptothorax pectinopterus*	+	++	++	Rare

Abundant +++ Present ++
Common + Nil -

RESULT AND DISCUSSION

The fish fauna is an important aspect of fishery potential of a waterbody. Fish is one of the important components of the aquatic ecosystem and it also forms food for a variety of animals and human beings. (Naik and Kousar 2012). In present study a total of 25 species of fishes belonging to 4 order, 18 genera of 6 families were reported. The family Cyprinidae was dominant with 14 species; followed by family Cobitidae with 4 species family Sisoridae with 2 species and family Belonidae and Mastacembellidae with single species respectively. The vast stretch of Song river at Raiwala, Nepali Farm and Chhidarwala offer good score for fisheries. Song river has a rich fish fauna, however some species found in this region has started disappearing there is need to contemplate measures to protect the fish genetic resources. The main threat for the decline of various fish fauna may be due over fishing of juveniles industrialization, urbanization and destruction of natural environment. The evaluation of fish genetic resources found in the Song river reveals that there are 25 species of fishes belonging to 4 orders 18 genera of 6 families were depicted in table 1. Among the fish orders cypriniformes was dominant with 14

species i.e. Barilius bola, B. vagra, B. barna, B. bendelisis, Channa gachua, Danio devario, Garra gotyla gotyla, Puntius ticto, P. sarna & Labeo gonius, L. dero, L. dyochelius, Tor tor and T. putitora (Table No. 1).

CONCLUSION

Fishing operations go an throughout the year with low catches in Mosoon compared to high harvest in the post monsoon and pre monsoon seasons. It is suggested that the fishery authorities should investigate and practice the proper exploitation and management of this Song river resources according to ecological principal. They should recommended and determine the stocking density and reasonable introduction according to potential of fish productivity and characters of this water body. Scientific fishing standard and fishing quotas are to be worked out this will play an important role in protection of the river and its biodiversity. The fisherman's should make acquainted with proper fishing proper training facilities should avail to the fish farmer society. Fishing of the spawn larval fish and immature fish should be avoided.

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