

STUDIES ON FISH DIVERSITY OF ROOP SAGAR TALAB, DISTT. SATNA (M.P.) INDIA

Vaheedunnisha

Asst. Department of Zoology , Govt. Maharaja P.G. College Chhatarpur, M.P, India.

Abstract:

The present faunastic studies include a through search of fishes from Roop Sagar Talab of Mukundpur (M.P.) from July 2013 to June 2014 Distt. Satna. The data of Physico-chemical and biotic components in present Talab indicates its suitability for fish culture. 13 fishes species identified in study period in Talab. They were as follows- Notopterus chitla, Notopterus notopterus, Catla catla, Labeo rohita, Labeo calbasu, Cirrihina mrigala, Puntius sorara, Puntius sphore, Mystus seenghala, Clarias batrachus, Nandus nandus, Anabas testudineus, Wallago attu. The numerical trend of fish production in closely related with abiotic and biotic components of the ecosystem. The several species of fish belonging order Clupiformes, Cypriniformes, Siluriformes and Perciformes. In which maximum seven species belonging to the order Cypriniformes. Some species of fishes like Cirrihinus, Colisa fasciatus, Labeo bata, etc. showed a declining trend in this stretch. The fish species diversity was decreasing. Diversity Index was lowest 0.43 in March and was highest 0.86 in October in the year 2013-2014.

KEY WORDS:

Fish diversity, Roop Sagar talab.

INTRODUCTION

Roop Sagar Talab is an important and extensive reservoir. It preserves a large quality of useful, water, along with innumerable aquatic lives. It is a known fact that water is the essence of life and life is a shadow of ecology. Aquatic animals in a aquatic ecosystem, have been considered to play a few important role. Ecology then is deeply related with existence, life cycle reproduction and health of all living beings. Aquatic organism an important aspect for the study of pisciculture because other terrestrial organism can live under xerophytes condition but a fish can never live because water is the synonyms of fish life. Fishes are cold blooded animals typically with gills and fins, and are primarily dependent on water as a medium in which to live fishes are the most numerous of the vertebrates and making important contributions to the world protein supply. For countries like Japan, they are essential for survival. All of the fish's vital function of feeding digestion, assimilation, growth, responses to stimuli and reproduction are dependent on water. For the fish, the most important aspects of water are dissolved oxygen, dissolved salts, light penetration, temperature, tonic substances, and concentration of disease organisms and opportunity to escape enemies. The various scientists have been reported 23,000 fish species in the world out of these 2546 species are dwell in India (Chakraborty, 2004). Due to irrational fishing practices, environmental aberrations like reduction in water volume, increased sedimentation, water abstraction and pollution etc. are the major factors responsible for declining the aquatic diversity. Several researchers like Kottalt (1996), Molur (1998), Kataria et. al. (1996), Sakhare (2006), Bhakta and Bandhyopadhyay (2008), Chaudhuri (2010), Thirumala et al (2011); etc studied the fish diversity.

Please cite this Article as : Vaheedunnisha , "STUDIES ON FISH DIVERSITY OF ROOP SAGAR TALAB, DISTT. SATNA (M.P.) INDIA" : Academic Sports Scholar (Dec ; 2014)

This can be utilized for fishery development to improve the socio-economic condition of human beings in order to develop fishery industry; the proper study would prove a pioneer one in this direction.

MATERIAL & METHODS:

Fishes were collected by small mesh sized gillnet, cast net, dragnet with the help of local persons and fisherman. The collected fishes were preserved in 5% formalin and brought to laboratory for further investigation. Fish were identified up to species with the help of "The fishes of India" by F. day (1994 ed.). All the fishes collected from the research sites are listed according to their taxonomic status in the thesis.

Diversity of fishes are measured by the following methods-

$$\text{Species Diversity} = \frac{\text{No. of Species} \times 100}{\sqrt{\text{Total Number of individuals}}}$$

RESULT AND DISCUSSION:

Man had an interest in fish production because of its food as well as medicinal values since the time of immemorial fish can be profitably grown in inland waters depending upon its physico-chemical characteristic species of different fish fauna were observed during the present investigation, During present study, good quality of fishes like *Labeo rohita*, *L. calbasu*, *Catla catla* and *Cirrhina mrigala* were found.

The present study of the author revealed that carps were the dominant, fish *Labeo rohita* was a major contributor among carps. Carps are fast growing fishes and popularly preferred from point of view of their suitability. Following species were noted to be suitable for Roop Sagar Talab, *Labeo rohita*, *L. Calbasu*, *Catla catla*, *Cirrhina mrigala* and *Pontius Soraha* etc. The numerical trend of fish production is closely related with abiotic and biotic components of the ecosystem.

Thirteen Species of fish belonging to four orders and included under five families were collected in Roop Sagar Talab (table-1). Perciformes contributed by 1 species, while rest species were from Clupiformes, Siluriformes and Cypriniformis (2, 3, and 7 species respectively). Species Diversity The monthly species diversity of the fishes were recorded as: September 0.82, October 0.86, November 0.76, December 0.47, January 0.78, February 0.84, March 0.43, April 0.57, May 0.68, June 0.62, July 0.45, August 0.49 (table- 2 and Graph-1). The detailed monitoring and thorough comparisons of old collection and observations data with more recent ones showed that many species of fish in the Roop Sagar Talab are declining and some have been disappeared. The present study reveals that at least 13 species, in comparison to the study of 4 are at decline and can be considered as threatened species or endangered species.

Thus, with the foregoing discussion, the author is of the opinion that the physico-chemical, geological and biotic conditions as well as bio-indicators of Roop Sagar Talab are quite convincing and favorable for fish production, but due to the presence of predatory and weeds fishes, the fish production is greatly affected. Roop Sagar Talab has normal level of pH, DO, Free CO₂, alkalinity, total solids, total hardness, phosphate contents and conductivity in its water. On the whole it may be concluded that water of Roop Sagar Talab can be used for the purpose of fishery.

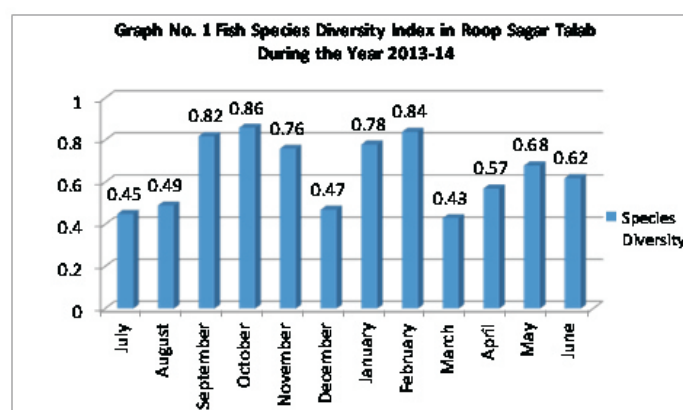
The data of physico-chemical and biotic. Component or in present talab indicate suitable conditions for fish culture.

Table-1: List of fishes recorded in Roop Sagar Talab during 2013 -2014

Taxonomic position					
S.No.	Order	Family	Genus	Species	Local Name
1.	Cyperiniiformes	Cyprinidae	<i>Labeo</i>	<i>rohita</i>	Rohu
2.			<i>Labeo</i>	<i>calbasu</i>	Karauchhar
3.			<i>Cirrhinus</i>	<i>mrigala</i>	Mrigal
4.			<i>Cyprinus</i>	<i>carpio</i>	Common carp
5.			<i>Catla</i>	<i>Catla</i>	Catla
6.			<i>Puntius</i>	<i>sarana</i>	Pardi
7.			<i>Puntius</i>	<i>Ticto</i>	Barber
8.	Siluriformes	Siluridae	<i>Wallago</i>	<i>Attu</i>	Padin
9.			<i>Mystus</i>	<i>seenghala</i>	Tengara
10.		<i>bimaculatus</i>	<i>Clarias</i>	<i>batrachus</i>	Magur
11.	Preciformis	Anabantidae	<i>Anabas</i>	<i>testudineus</i>	Kaoi
12.	Clupeiformes	Notopteridae	<i>Notopterus</i>	<i>notopterus</i>	Patola
13.			<i>Notopterus</i>	<i>chitala</i>	Patola

Species Diversity of Fishes in Roop Sagar Talab (2013- 14)

Months	Species Diversity
July	0.45 (Low Diversity)
August	0.49
September	0.82
October	0.86 (high Diversity)
November	0.76
December	0.47
January	0.78
February	0.84
March	0.43 (Low Diversity)
April	0.57
May	0.68
June	0.62



CONCLUSION:

The results indicate that reduction in the overall abundance of fish fauna in recovery compared to reference is a clear indication of the effect of habit destruction. Simultaneously, it was also revealed that the river has not recovered in the studied stretch. There is definitely some kind of disturbances in the river which is causing reduction in the abundance of fish fauna. The disturbances visibly seen were local fish harvest by traditional means of fish catch or unseen means like illegal use of electrical appliances or poisoning of the fish fauna using plants herb extraction by the local people. An urgent need exists for studying the life history traits and demography of the most important threatened fishes, as lack of information on these aspects have significantly affected conservation efforts.

ACKNOWLEDGEMENT:

Authors are highly thankful to the Dr. Vinodini Nigam, Govt. Girls College Rewa (M.P.) for completion of this work.

REFERENCES

1. Bhakta JN, Bandyopadhyay PK. India International Journal of Environmental Research 2(3): 255-260,(2008).
2. Chaudhuri Sabuj Kumar; Fresh water fish diversity information system as a basis for sustainable (2010).
3. Chakraborty S (2004) Biodiversity. The Diamond Printing Press, Jaipur, India 136.
4. Day F (1994) The fauna of British India including Ceylon and Burma. Fishes 2 vol. Taylor and Francis, London.
5. Kottelat M Whitten T ; Freshwater Biodiversity in Asia with special reference to fish. World Bank Technical Paper No. 343. Washington, 59 29 (1996).
6. Kataria HC, Iqbal SA, Chandilya (1996) Indian J. Environmental Protection 16 (11)|
7. Sakhare V.B. Journal of Aquatic Biology 16 (1&2) , 31-33 fishery. Department of Library and Information Science, Jadavpur University (2006).
8. Thirumala,S.,B.R.Kiran and G.S.Kantaraj: Fish diversity in relation to physic-chemical characteristics of Bhadra reservoir of Karnatka,India. Adv.Appl.Sci.Res.2(5):34-47 (2011).