

# STATUS OF FISH FAUNA IN WAGHADI DAM OF YELABARA, GHATANJI REGION, MAHARASHTRA.

P.D. THAKARE<sup>1</sup>, P.P. JOSHI<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Zoology, S.P.M Science and Gilani Arts, Commerce College, Ghatanji

<sup>2</sup>Professor, Department of Zoology, Amolakchand Mahavidyalaya, Yavatmal

**Abstract:** Fishes are the most important part of the Aquatic ecosystem. Fishes provide many services for both humans and the ecosystem. We decided on 4 different stations from Waghadi dam. Yelabara. located at Latitude/Altitude: 20.2634854°N 78.3078003°E. During investigation of 4 months from August 2022 to November 2022 with regular visits with intervals in morning session reported 13 different species from 6 orders i.e Cypriniformes, Gobiiformes, Beloniformes, Synbranchiformes, Siluriformes, Cichliformes belonging to 7 family Cyprinidae, Oxudercidae, Gobiidae, Hemiramphidae, Mastacembelidae, Siluridae, Cichlidae. it was reported that species from order Cypriniformes are most abundant. Also, some fishes like Catlacatla, Cirrhinus mrigala, Oreochromis mossambicus are commercially most important fishes. The present study revealed that, as per IUCN Red List criteria out of the 13 fish species, 01 species belong to the Near Threatened (NT), and 11 species under Least Concerned (LC) category and 01 species belongs to (VC) category. At present study Shows that the status of fish fauna from Waghadi dam is good enough. In the coming days, we will focus on more stations and hope for fish diversity to continue increasing

**Keywords:** Diversity, Aquatic ecosystem, Fishes, Waghadi dam

## INTRODUCTION:

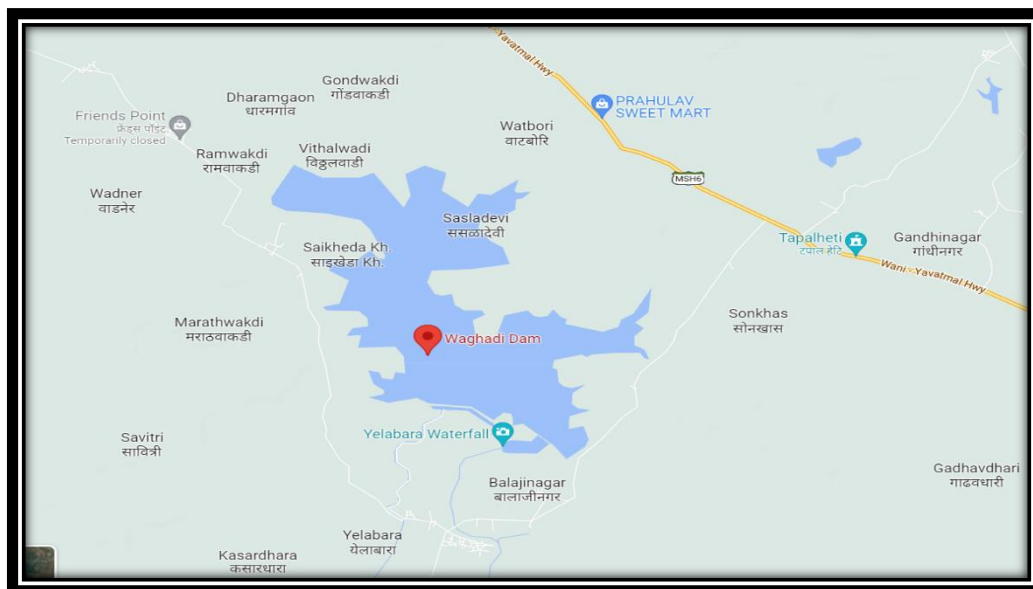
Water is the main source for life because all the evolutionary processes start from water, it begins from unicellular organisms to multicellular organisms. Animals evolved from aquatic habitat to terrestrial habitat. Also, water is a necessity for all life's So, the study of water bodies is always beneficial for novel and innovative results. Fishes are the most valuable organisms in aquatic ecosystems because it reflects the total behaviour of aquatic habitat. Fishes are the intermediate parts of Aquatic life with the population of fishes the ratio of particular habitat reflects its level. Fishes make a major contribution to their ecosystem: providing essential nutrients that support the whole ecosystem. Fish are excellent recyclers of the nutrients that algae and other bottom-level species need to survive that in turn support the remainder of the ecosystem According to FishBase about 34,800 species of fish had been described as of February 2022, which is more than the combined total of all other vertebrate species: mammals, amphibians, reptiles and birds. Fishes constitute almost half the total number of vertebrates of the 39,900 vertebrate species recognized the world over, 21,723 are living species of fish of which 8411 are freshwater and 11,650 marine species. In the Indian region alone, of the 2500 species, 930 are freshwater inhabitants and 1570 are marine. In terms of habitat diversity, fishes live in almost every conceivable aquatic habitat. It is roughly estimated that India alone harbours 120,000 known and perhaps another 400,000 as yet undescribed species of fauna and flora distributed over the country's

320 million hectares of land (Sugunan, 1995). According to a report, in recent year there is a threat to the fish population like due to 1. Habitat loss: habitat loss due to agricultural development, Development of Dams, Reservoirs & Increasing pollution level in water bodies due to which the water quality decreases which reflects the negative impact on total aquatic ecosystem also on overall fish diversity. 2. Climate Change: Rising water temperatures in different water bodies and rivers threaten to disrupt the migration and distribution of numerous fish species.

3. Overfishing: As the Fishing rate increases it directly impacts on a particular biodiversity rate of fishes for that particular waterbody.

### MATERIAL AND METHOD:

**STUDY AREA:** Waghadi Dam located at Latitude/Altitude:  $20.2634854^{\circ}\text{N } 78.3078003^{\circ}\text{E}$  Waghadi river is one of the most important tributaries of river Painganga, and flows through the cities of Kelapur, Ghatanji and Yavatmal Also River covers different villages near these cities. Waghadi river Covers almost 80 Km distance. There is a Waghadi dam near Ghatanji, Yavatmal district in state of Maharashtra. Waghadi Project and Dam's Official Designation is Waghadi :D-01427. Waghadi Dam was constructed as part of irrigation projects by the Government of Maharashtra in the year 1978. It is built on and impounds Waghadi River, nearest city to dam is Ghatanji in Yavatmal District of Maharashtra. Waghadi dam constructed in Yelabara near Ghatanji taluka. The purpose of studying in Waghadi Dam from Ghatanji region is to collect data and study of Fish diversity along with population so it directly reflects the aquatic condition and also indicate the fishery development status of Waghadi Dam.



**Photo plate 1: Waghadi Dam Map**

**COLLECTION OF FISH SAMPLES:** We selected 4 different sites from Waghadi Dam because there are chances for some innovative results of fishery population also it helps to collect diversity ratio of fishes. field visits were made to collect fishes from fishermen catches and fish markets. samples were collected from monthly intervals from August 2022 to November 2022 at four different stations (Station A, Station B, Station C, Station D) of Waghadi Dam. Fishes were collected from Waghadi dam from all these stations by local fishermen of the area using a common method of fishing net. Photographic collection was carried with the help of Digital Camera (NIKON COOLPIX S3300). The taxonomic identification was carried out with help of available literature of Day (1889), Talwar and Jhingran (1991), Jayaram (2006, 2010). The threat status of

fish native species documented during the present study is given and was adapted from IUCN Red List of Threatened species version 2022 (IUCN 2022).

**OBSERVATION AND RESULT:** The study reveals that during August to November 2022 total 13 Different species belonging to 6 orders i.e., Cypriniformes, Gobiiformes, Beloniformes, Synbranchiformes, Siluriformes, Cichliformes and 7 Families i.e. Cyprinidae, Oxudercidae, Gobiidae, Hemiramphidae, Mastacembelidae, Siluridae, Cichlidae (Table no.1). Total 13 Species were recorded like Chela cachius, 2. Catlacatla, 3. Cirrhinus mrigala, 4. Puntis ticto, 5. Devario malbaricus, 6. Crossocheilus latius, 7. Labeo chrysophekadion, 8. Acanthogobius flavimanus, 9. Glossogobius giuris, 10. Hyporhamphus regularis, 11. Macrogonathus pancalus, 12. Ompok bimaculatus, and 13. Oreochromis mossambicus. All these results show that the Waghadi dam is a major hotspot for Fish fauna biodiversity in Ghatanji region. According to the present study and IUCN Red List criteria out of the 13 fish species, 01 species belong to the Near Threatened (NT), and 11 species under Least Concerned (LC) category and 01 species belong to (VC) category. Still it is concluded that the order Cypriniformes are most abundant and some fishes like Catlacatla, Cirrhinus mrigala, Oreochromis mossambicus are having good production. These fishes are commercially useful for the fisherman and help them for improving ecological status. In future we are focusing on more stations and other parameters to explore waghadi dam.

ORDER	FAMILY	SPECIES	COMMON NAME	STATUS
Cypriniformes	Cyprinidae	Chela cachius	Silver hatched chela	LC
		Catlacatla (Hamilton 1822)	Catla	LC
		Cirrhinus mrigala	Mrigal	LC
		Puntis ticto	Pepdi/Ticto barb	LC
		Devario malbaricus (Jerdon,1849)	Malbar danio	LC
		Crossocheilus latius (Hamilton 1822)	Ray finned fish	LC
		Labeo chrysophekadion (Bleekar,1850)	Black Labeo	LC
Gobiiformes	Oxudercidae	Acanthogobius Flavimanus (Temminck & Schlege)	Yellowfin Goby	LC
	Gobiidae	Glossogobius giuris (Hamilton,1822)	Gobyfish	LC
Beloniformes	Hemiramphidae	Hyporhamphus regularis (Gunther, 1966)	Freshwater garfish	LC
Synbranchiformes	Mastacembelidae	Macrognathus Pancalus (Hamilton-Buchanan,1822)	Indian spiny eel	LC
Siluriformes	Siluridae	Ompok bimaculatus (Bloch,1794)	Butter catfish/patola	NT



Cichliformes	Cichlidae	Oreochromis Mossambicus (Peters,1852)	Tilapia/Kombada	VU
--------------	-----------	---------------------------------------	-----------------	----

**Table 1: Taxonomical Classification of Fish Diversity form Waghadi Dam**

**Taxonomic status of fishes according to IUCN Red List of Threatened species version 2022 (IUCN 2022):**LC- Least Concern, NT- Near Threatened, VU- Vulnerable, NE- Not Evaluated, I- Invasive, DD- Data Deficient EN- Endangered,



**Photo plate 2: Some different Fish Species found in Waghadi dam**

**Fig1: Chela Cachius**

**Fig 2: Puntius Ticto**

**Fig 3: Acanthogobis Flavimanus**

**Fig 4: Devario malbaricus**

**Fig 5. Hyporhamphus Regularis ( Freshwater garfish)**

**Fig 6. Crossocheilus latius**

Fig7: *Macrornathus Pancalus*

Fig 8: *Chela Cachius*

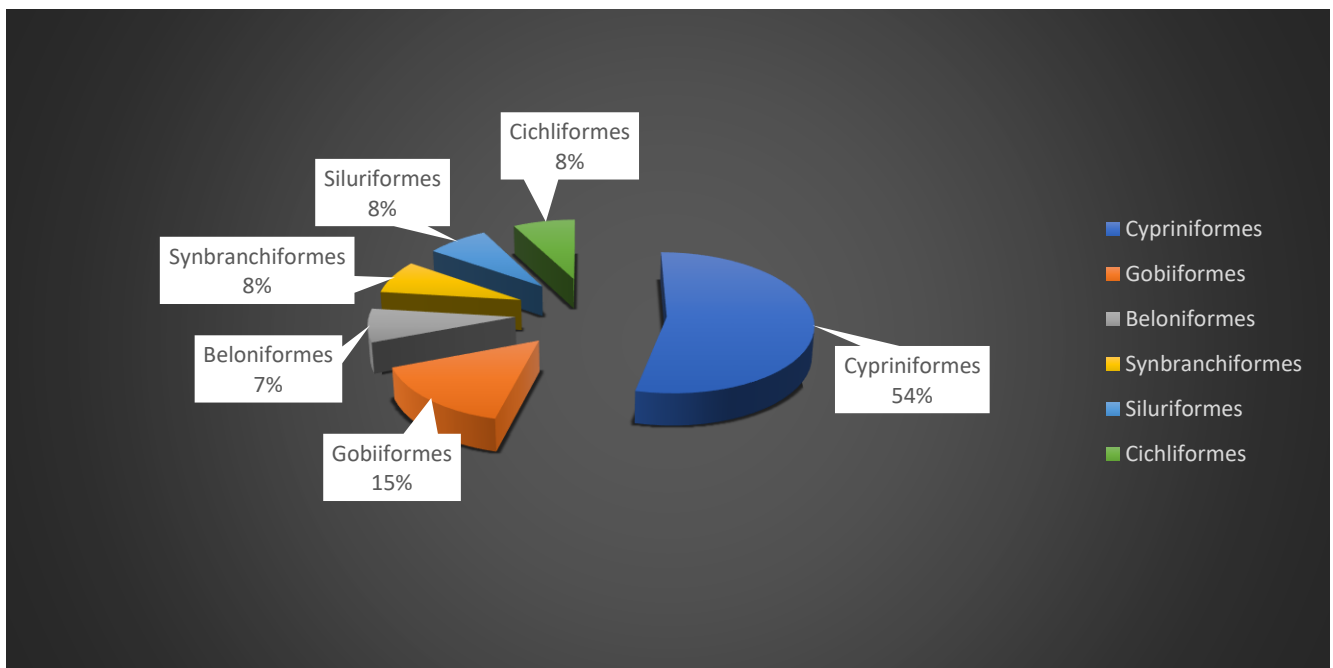
Fig 9: *Glossogobius girius*

Fig 11: *Ompok Bimaculatus*

Fig 12: *Catla Catla*

Fig 13: *Oreochromis Mossambica* (Tilapia) Fig14: *Labeo Chrysophekadion* (Black Sharkminnow)

Fig 15: *Cirrhinus mrigala* (Mrigal carp)



Graph plate I: Distribution pattern of Fishes in Waghadi dam.

#### REFERENCES:

1. IUCN(2022). The IUCN Red List of Threatened Species. Version 2022. <http://www.iucnredlist.org>
2. Baruah D., Deka P., (2016). A study on fishing community of Gopal Jaroni, a small river island of Bramhaputra at Sonitpur District of Assam with reference to socio – economic status. Int. J. Zool Studies, 1 (2): 23 -25
3. Avinash A., Mukwane R., (2016). Studies on fish diversity with reference to threats and conservations measures in Uma River basin, dist. Washim, Maharashtra. D.A. R. J. 8(4):28-35.
4. Chaourey P., Meena D., Varma A., Saxena G., (2014). Fish Marketing System in Bhopal (M.P.). Biol. Forum – An Int. J., 6 (1): 19 - 21
5. Joshi P. S., Tantarale V. T., Kulkarni K. M., (2016). Diversity of saurian fauna in the Buldhana district, Maharashtra, India. ElsevierJ. Asia-Pac. Biod. 9: 306-311.
6. Kamble A. T., MudkhedeL. M., (2013). Study of fish fauna and productivity of Loni reservoir, Tq. Kinwat (Maharashtra). Int. J. Biomed. Adv. Res., 4 (3): 155-159
7. Laxmappa B., Bakshi R., Narayana D., (2015). Studies on ichthyofaunal diversity of Krishna River in Mahabubnagar district, Telangana, India. Int. J. Fish. Aqua. Stud., 2(5): 99-104
8. Mistry J., (2016). Ichthyofaunal diversity of Ahran Lake in Murshidabad District, West Bengal, India. Int. J. Fish. Aqua. Stud., 4(2): 15-18

9. **Mohite S. A., Samant J. S., (2013).** Impact of Environmental Change on Fish and Fisheries in Warna River Basin, Western Ghats, India. *Int. Res. J. Env. Sci.*, 2 (6): 61-70
10. **Nath B., Deka C., (2012).** A Study on Fish Diversity, Conservation Status and Anthropogenic Stress of Chandubi Tectonic Lake, Assam, India. *J. Bio.Innov.*, 1(6):148-155,2012
11. **Paliwal G. T., Bhandarkar S. V., Bhandarkar W. R., (2013).** Ichthyofaunal Diversity, Fisheries and Its Conservation In Itiadh Dam Reservoir District Gondia Maharashtra. *Int. J. of Life Sciences*, 1(4): 308
12. **Raj P. J., Bleher H., Syed T., Gore S., (2014).** Conservation status and threats of the ichthyofauna in the North region of the Western Ghats. *Int. J. Fish. Aqua. Stud.*, 1(3):189-193
13. **Helfman G., Collette B., Facey D., Bowen B., (2009).** *The Diversity of Fishes: Biology, Evolution, and Ecology* (2<sup>nd</sup> ed.). Wiley-Blackwell. Pp 433.
14. **Jadhav B., Raut R., Paingankar M., Dahanukar N., (2011).** Freshwater fish fauna of Koyna River, northern Western Ghats, India. *J. threaten taxa*, 3(1) 1449-1455
15. **Jayabhaye U., Lahane L., (2013).** Studies on Ichthyofaunal Diversity of Pimpaldari tank Hingoli, Maharashtra, India. *Int. Ind. Ref. Res. J.*, 4(4): 54-55
16. **Jayaram K.C., (2010).** *The fresh water fishes of the Indian Region.* Narendra Publishing House, Delh