A

PROJECT REPORT

ON

BIODIVERSITY OF FISH FUNA OF VISHNUPURI RESERVOIR (DAM) IN NANDED DISTRICT OF MAHARASHTRA, INDIA

Submitted to

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED-431606 (M.S.) INDIA

In partial fulfillment of the requirement

For the award of degree of

MASTER OF SCIENCE

IN

ZOOLOGY

UNDER FACULTY OF

SCIENCE

Submitted by

Shraddha Vijay Kadam

M.Sc. II Year, ZOOLOGY

Under the Guidance of

Dr. K. S. Shillewar

(M.Sc. Ph.D. Zoology & Fishery Science)

PG Department of ZOOLOGY

N.E.S. Science College, Nanded-431605

(Re-accredited with A Grade by NAAC)

April - 2023

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Science College, Nanded

Seat no – PB67076

CERTIFICATE

This to certify that,

Mr. Shraddha Vijay Kadam

Student of M.Sc. Zoology

Has completed project work entitled

"BIODIVERSITY OF FISH FUNA OF VISHNUPURI RESERVOIR (DAM) NANDED DISTRICT OF MAHARASHTRA, INDIA"

for the partial fulfillment of the requirement for

The Degree of 'Master of Science' in Zoology

Presented to

The Department of Zoology,

N.E.S. Science Collage, Nanded.

Swami Ramanand Teerth Marathwada University, Nanded

2022-2023

17/04/2023

Head

Dr. Kiran Shillewar

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Examiner

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27/04/2023

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Report of the work done

Introduction: -

The Godavari river is the most important river in Marathwada region. It has the source at Trimbakeshwar in Sahyadri near Nasik this river enter in Aurangabad district and flowing in Beed, Parbhani and Nanded district. The other rivers of Marathwada region are Penganga, Purna, Asna, Sindhphana, Bindusara, which are used for drinking water, Agriculture, Industries, and Fisheries purpose, mainly in these rivers traditional capture fisheries is carried on the fishes caught in these rivers are Major carps, local majors, local minor carp in river pool is summer month.

Before the construction of pochapad Dam which is on the Border of this region in Andhra Pradesh on Godavari river there is satisfactory catch of fresh water prawns.

Godavari river flow seven District in Maharashtra, with in that one District is Nanded. Godavari river flow 10.5 km in Nanded city. Vishnupuri Dam is constructed on river Godavari. Vishnupuri Dam water supply to Nanded city and irrigation purpose also.

In Godavari river at Nanded, it is rich in fish fauna. Fishes are formed an important item of human diet from the time man appeared on earth and are primarily caught for this purposes. Fish diet provides proteins, fat a Vitamins A & D.

Due to the high consumption of fish as food, fishes are having good market value & it gives economy to peoples, In Godavari River. Gill net is that is should contracts as little as possible with its surroundings. So that is does not look like an impenetrable wall, which the fish could avoid.

Fishing is done generally in the evening. The nets are stretched across the river banks and fixed by poles.

The net is hauled up in the morning and the fish are entangling are collected.

Triangular net is a conical net, shaped like a butterfly & made up of strings. The mouth of the net is kept open by means of bamboo sticks fixed like a triangle.

One of the stick is longer and used as a handle. The closed end of the net serves as a reservoir and is called a 'Bhog'.

The net is operated in shallow waters and near bank of river and it slowely drugged in water with the help of the handle. The fishes enter in the reserviour and are collected. The net is operated from boat also, using a long handle.

Harvesting places of fishes from Vishnupuri dam are Hassapur, Kotha, Nawaghat, Gowardanghatshekachiwadi. Different types of fishes found in Vishnupuri Dam.

The following list of identified fishes found in Vishnupuri Dam –

7 order & 7 Family

Catla Catla, Labeo rohita, Labeo calbasu, Mrigal, Common carp, Notopterus notopterus, Notopterus chitala, Puntius sarana, M.Seenghala, Wallago attu, Clarius batrachus, Rohitee Catio, Tilapia, Channa marulius.

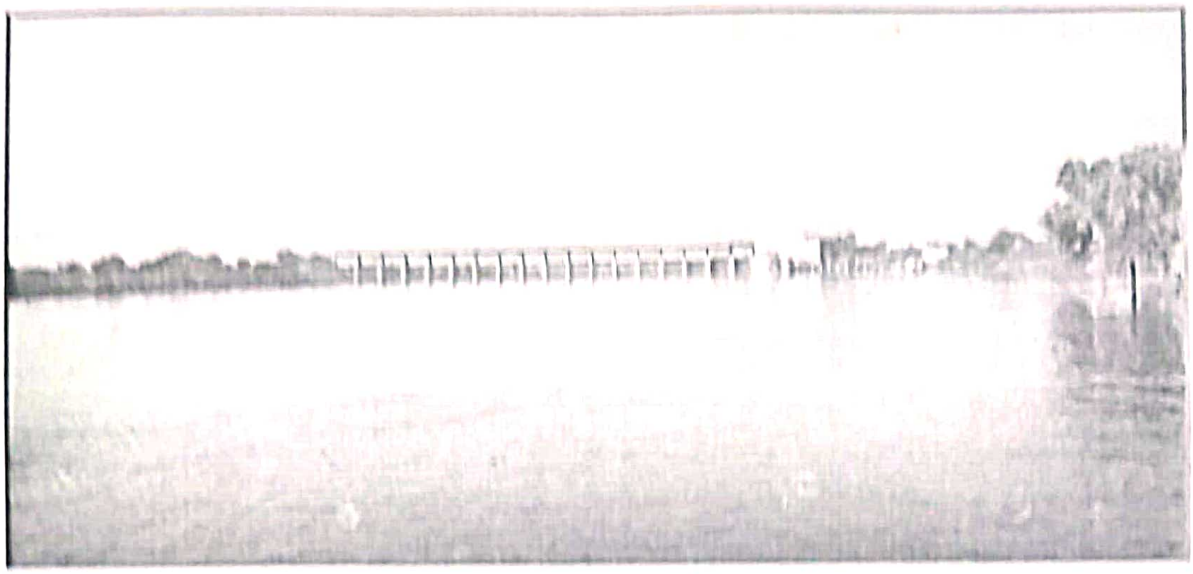

Fig. 1. Vishnupuri Dam

Fig. 2. Middle side of Vishnupuri Dam

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Catla Catla

CLASSIFICATION

Phylum	-	*Chordata*
Class	-	*Actinopterygii*
Order	-	*Cypriniformes*
Family	-	*Cyprinidae*
Genus	-	*Catla*
Species	-	*catla catla*

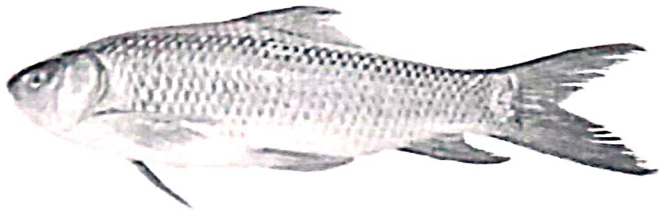
CATLA CATLA

Catla catla

Binomial Name :- *Catla catla*

Characteristics :-

1) This species has the fastest rate of growth among the Indian Major carps.
2) Catla matures when they grows 2 years old.
3) It is one of the most important fresh water species in South Asia.
4) Catla consumed & sold fresh water fish locally & regionally.
5) Catla fish with large and broad head, upturned mouth and a large protruding lower jaw.
6) Catla is a surface & mid water feeder which feeds on phyto plankton.
7) The body of fish is covered with broad scales and grey in colour.
8) Fecundity of catla fish varies from 2,50,000 - 6,50,000 kg, depending on fish length and weight.
9) Barbles are absent, fins are dorsal, pectoral, anal and caudal.
10) Head contains wide mouth and eyes.
11) Lateral line complete originating from the upper margin of the gill cover.
12) Fin formula : - D, 19.19 (3/15-16 ; P-19 ; V-9 ; A.8(3/5) ; C 19



Labeo Rohita

CLASSIFICATION

Kingdom	- ***Animalia***
Phylum	- ***Chordata***
Subphylum	- ***Vertebrata***
Superclass	- ***Pisces***
Class	- ***Osteichthyes***
Sub class	- ***Actinopterygii***
Order	- ***Cypriniformes***
Family	- ***Cyprinidae***
Genus	- ***Labeo***
Species	- ***rohita***

LABEO ROHITA

Biblonial Name : Labeo rohita.

Characteristics :-

1) Labeo rohita is the most famous in fresh water carp and commonly called as "Rohu" in Hindi.
2) It is column feeder found in mid-water region.
3) Body is elongated and streamline
4) Labeo rohita reaches sexual maturity within two years.
5) In case of breeding when cultured, it does not breed in lentic environments then that time induced spawning becomes necessary.
6) Rohu having a gills for exchange of gases (Respiration) in aquatic medium.
7) Rohu have paired and unpaired fins supported by a soft spiny rays. It is useful for swimming .
8) Body is covered by scales, it is Brownish coloured on dorsal side & ventral side silvery mark on each side.
9) Lateral line system is helpful for sensation in aquatic environment.
10) Air Bladder is present In bony fishes for buoyancy.
11) Body is divided in to head, trunk and tail.
12) A pair of filamentous barbles originates from upper lip.
13) Large operculum hangs on either side enclosing gills and branchial chamber.
14) Mouth does not contain teeth. Teeth are found in pharynx only.
15) Kidneys are mesonephric.
16) Fin formula :- D.16 (3/13) ; P 17 ; V 9 ; A 7 (2-5)

Cirrhinus Mrigala

CLASSIFICATION	
Phylum	- *Chordata*
Sub phylum	- *Vertebrata*
Super Class	- *Gnathostomata*
Class	- *Teleostomi*
Sub class	- *Actinopterygii*
Order	- *Cypriniformes*
Family	- *Cyprinidae*
Genus	- *Cirrihinus*
Species	- *Cirrihinus mrigal*

CIRRHINUS MRIGALA

Biblonial Name : Cirrhinus mrigala

Characteristics :-

1) This carp is known as Mrigal.
2) Mrigal is a species of ray- finned fish in the carp family.
3) Cirrhinus mrigala's maximum length is 1 m (3.3 ft.)
4) In south Asia Mrigal is a popular food fish and important aquaculture fresh water fish.
5) Body divisible in to head, trunk and tail.
6) Lower lip may or may not cover the lower jaw.
7) Head contains mouth, eyes and Snout.
8) Eyes are golden coloured and located in anterior half of head.
9) *Cirrhinus mrigala* body colour is a silvery dark and grey on dorsal side and whitish is on abdomen.
10) Caudal fin deeply forked.
11) Fins are slightly orange coloured.
12) Lateral line present and complete with about 40-45 scales.
13) It is feed on both natural and supplementary feeds.
14) It is often used as game fish in Bangladesh but widely used as a food in other countries.
15) It is widely farmed as a component of a poly culture system.
16) Fin formula : D.16 (3/13) ; P 18 ; V.9 ; A.8 (2/16); C.15.

Common Carp

CLASSIFICATION	
Phylum	*Chordata*
Subphylum	*Vertebrata*
Division	*Gnathostomata*
Superclass	*Pisces*
Class	*Actinopterygii*
Order	*Cypriniformes*
Family	*Cyprindae*
Genus	*Cyprinus*
Species	*corpio*

COMMON CARP

Characteristics :-

1) There are two types common carp.

   [a] Mirror carp- which has much larger scales.

   [b] Leather carp- has no scales except near dorsal fin.

2) It has two barbels like scale on upper lips.

3) It lives in lakes, ponds & rivers.

4) Its body is dark, olive colored back, belly is yellowish.

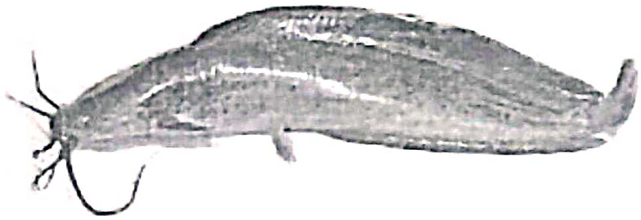
5) They have a larger dorsal fin.

6) They are introduced in America from Asia.

7) People put it in ponds on purpose to control plants that spread too quickly including algae.

8) They have good eyesight &they are sensitive.

9) They have sensitive taste organs in and around it's snout.



Clarius Batrachus

CLASSIFICATION		
Phylum	-	***Chordata***
Group	-	***Pisces***
Class	-	***Osteichthys***
Order	-	***Silluriformes***
Family	-	***Clariidae***
Genus	-	***Clarius***
Species	-	***batrachus***

CLARIUS BATRACHUS

Defination :-

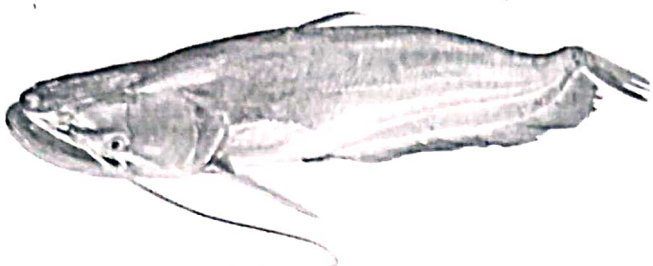
Predator fishes are carnivorous in nature & predate on spawn, fry, fingerlings of Indian major carp.

Identification:-

1) It is commonly called as 'Mangri' in Hindi.
2) Body is elongated, with laterally compressed head.
3) Scale less and measuring upto 45 cm in length.
4) It is predatory in nature.
5) The general colour of the body is uniform brown or greyish black.
6) Sensory barbels are four pairs.
7) Dorsal fin is long and without spines, extending from the neck of the caudal fin.
8) Anal fin also long. No adipose fin.
9) Caudal fin more or less rounded, pectoral fins are provided with spines.
10) Acessory respiratory organs are branceed tree like especially designed to take in oxygen from air.
11) The Air-bladder is connected with internal ear by weberian ossicle.
12) It is highly nourishing and estimated as food.

Distribution :

Clarius is distributed in India, Burma, Sri Lanka.



Wallago Attu

CLASSIFICATION

Phylum	- *Chordata*
Group	- *Pisces*
Class	- *Osteichthys*
Order	- *Silluriformes*
Family	- *Silluridae*
Genus	- *Wallago*
Species	- *attu*

WALLAGO ATTU

Identification:-

1) Commonly known as Freshwater Shark.
2) This is one of the largest fresh water catfish.
3) It attains a maximum length about 183 cm. but usually 61 to 91 cms long.
4) It is predatory in nature.
5) They are provided with large mounth and sharp teeth healpful for predatory action.
6) Breedings takes place in rainy season.
7) This fish is used as food.

Distribution :-

Found in fresh water in India, Pakistan, Burma and Indonesia.

Channa Marulius

CLASSIFICATION

Phylum - *Chordata*
Group - *Pisces*
Class - *Osteichthyes*
Order - *Ophiocephali formes*
Family - *Ophiochephalidae*
Genus - *Channa*
Species - *marulius*

CHANNA MARULIUS

It is commonly known as MARAL.

This is about the largest of murrels in India the average size being about 45cm. but may attain over a meter. found in all large rivers, as they prefer deep clean streatches of water with a sandy or Rocky bottom, unlinke several of its arelated species. It is cultured in tanks ponds and irrigation canals in certain parts of India. It is values as food. Lower jaw is longer the maxilla reaches to below or behind the hind edge of the eye. Teeth a posterior row of four or five conical onces in the lower jaw. Pectoral firs half of the length, of the head or even more and reches to above the origin of the anal. On the submit of the head large and of irregular shapes. 12 rous bet. shout and origine or dorsal fin. 5 row bet. eye and the angle of the opercle. Colour vary with the water they reside in back greenish. becoming yellow on the sides and abdomen with a dark stripe along the side of the head. Several banks from the back pass downwards to the middle of the body. Fins spooted, the caudal & the vertical ones with a nurrow light edge, and dark basal band ventrals wite or gray some have scattered black spot over the body and head & this appears most common near the sea, & in the breeding season.

Economic Important

It is an importent food fish.

Fin Formula

D. 34, P. 14 A.22, C.14, L1.41, Ltr ($3^{1/2}$ - $4^{1/2}$ / 7-6)

Notopeterus - Species

CLASSIFICATION

Phylum - *Chordata*
Group - *Pisces*
Class - *Osteichthyes*
Order - *Clupeiformes*
Family - *Notopteridae*
Genus - *Notopterus*
Species - *chitala/notopterus*

Notopterus is commonly known as 'Chambari.'

It is fresh water fishes.

Fishes are haviny a peculiar shape, with a small head, a flattened and bony and an upturned tail is present.

Body is convered with small scales.

Dorsal fin is small & sticks out like a feather & hence a popular known is 'Feather back'.

Both pectoral & pelvic paired fins are very small.

The anal fin is extensive & is joined with a caudal, given the fish its charactristic shape.

Generally two sp. of Notopterus found in India.

1. N. CHITALA :

Maximum lenth 4 feet.

Body colour brown above, silvery on sides, & abdominal.

A few black spot at the caudal penduncle.

FIN FORMULA

D-9 , 10 (1-2) / 7-9 P.16 , V6,

A.110-125(135), C 12-14, L.1.180

2. N. NOTOPTERUS :

Body silvery white.

Occur fresh OR brackish water of India

Average market size 25-45 cm but max. size maybe about 60cm.

It is cultivated large lakes & reserviors.

ECONOMIC IMPORTANT

It is demand as food Fish.

Labeo - Calbasu

CLASSIFICATION

Phylum - *Chordata*
Group - *Pisces*
Class - *Osteichthyes*
Order - *Cypriniformes*
Family - *Cyprinidae*
Genus - *Labeo*
Species - *calbasu*

1. Labeo Calbasu is commonly known as "Koloshi"
2. It is found in fresh water habitat.
3. The fish is black in colour.
4. Mouth of fish rather narrow. snout is obtus & dippresed with pores.
5. Lips are thick fringed especialyower one.
6. Barbels are present, 2 pairs of barbels are usually present.
7. Gill rackers are 4 in number.
8. Pharyngeal type of teeth are present.
9. Dorsal fin commences in advance of ventral and midways between the snout base of the caudal, its upper margine some what concave.
10. Ventral commences below the fourth OR fifth dossal ray.
11. Caudal fin is deeply forked.
12. It attains 3 feet in length in natural water, bottom feeder.

ECONOMIC IMPORTANT

It is a food fish & maybe used for composite fish culture.

FIN FORMULA

D.16-18 (3/13-15), P.19, V.9, A.7 (2/5), C.19, L-1.40-44, L.T.r. 7 1/2/8.

Punctinus-Sarana

CLASSIFICATION

Phylum - *Chordata*
Group - *Pisces*
Class - *Teleostomi*
Order - *Cypriniformes*
Family - *Cyprinidae*
Genus - *Punctius*
Species - *sarana*

1. Body is short to moderately elongated, deep, compressed.
2. Abdomen is rounded.
3. Head short, snout obtuse, conical or pointed, may or may not be protrusible.
4. Eyes are moderate to large, dorso lateral, not visible from below ventral surface.
5. Lips are thin covering the jaws, may have leathery lobes.
6. Dorsal fin is inserted nearly opposite pelvice fins, short .
7. Anal fin is short with seven to nine rays.
8. Caudal fin is forked, scales are small, moderate or large.
9. Lateral line complete or incomplete with 20-47 scales.

ECONOMIC IMPORTANCE

It is commonly used as a food fish.

FIN FORMULA

D.11 (3/8), P.15, A.8(3/5), C.19, L.1.32-34, Ltr. 5 1/2 - 6/6

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