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Survey of Nashik Fish Market To Study Fish Diversity

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Abstract: Fish diversity plays important role as it provides database of particular region . Fish species diversity is defined as the number of species and abundance of each species that live in a particular location. The fish specimen recorded from all the 5 major fish market Cichlidae , Bramidae , Scombridae , engraulidae , scombrid, Anguillidae, Cyprinidae , Clariidae , Pangasiidae , . A total 20 species such type Indian major carp , catfish , exotic carp , etc. are available in the market . Carp fishes were dominant in the studied market because of high consumer demand and reasonable rates and carp species are cultured very much It also observed that Rohu , Catla , mrigal , Wam , minor carp , silver carp , golden anchovy , tilapia , bangda , Basa , pomfret were most available in the market because of those species has highest demand in the market. Inconclusion 17 species were reported in Bhadrakali fish market also murrel and goldfish was only found in this market , Satpur fish market was having diverse varity of freshwater fishes over Marine water fishes , only lape was unique in entire market . Bhaba Nagar fish market only 5 species were reported , Jail road fish market low variety of fish and some species of Marine water was reported . In Trimurti Chowk fish market mostly frozen species of marine water fishes were reported .

Keywords: Cichlidae , Bramidae , Scombridae , engraulidae , scombrid, Anguillidae , Cyprinidae , Clariidae , Pangasiidae.

Introduction

Fish is the healthy nutrition and the cheap source of Protein for the people. Freshwater resources are vital life on earth fishes are among them, it harbors many forms of life especially fishes which has good food and economic value. The assessment of fish diversity plays crucial role as it provides Database of particular region. Fishes serves significant role in socioeconomic development of the country, as it is a valuable source of livelihood for huge section of economically backward population. It serves employment, alternative source of income and stimulates the growth of new subsidiary industries. As fishes possess maximum protein, vitamins, low saturated fat and also consist of good amount of omega fatty acids. In fish market there is wide variety of fishes are available for consumers. Fish biodiversity is essential for future sustainability of aquatic resources in our country. Fishes are the most diverse group of vertebrates with 32,447 species. In India there are about 2,500 species of fishes of which 930 live in freshwater and 1570 live in marine water. Fish are the half of total vertebrate among the biodiversity which contributes the GDP. It promotes foreign exchange earnings, income generation, food and nutritional security of the nation. Regional investigation of fish diversity is essential for documentation as well as for conservation [1]. Unfortunately, throughout the World and in India in particular, aquatic ecosystems are continuously altered by human activities [2]. This alteration is thought to play an important role in fish community structures and in other aquatic organism [3] and may be responsible for extinction of numerous species. Fish biodiversity contributes to various ecosystem services, including water filtration, erosion control, and carbon sequestration. Protecting fish populations and their habitats helps maintain these services, benefiting both humans and the environment.

Cultural and Traditional Importance

Fish have cultural significance for many societies and indigenous communities. They are associated with folklore, traditional practices, and spiritual beliefs. Preserving fish biodiversity helps safeguard cultural heritage and traditions linked to these species [4].

Research and Education

Fish provide valuable subjects for scientific research, helping us understand fundamental ecological processes, evolutionary biology, and the impacts of environmental changes. Diverse fish communities offer rich opportunities for educational purposes, enabling students and researchers to study and appreciate aquatic ecosystems. [6]

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The reservoirs form one of the most important sources of large number of living aquatic animals, which are economically important for nature as well as for human beings as food. Cyprinid fish is one of the most important groups of vertebrates for man and influencing his life. The nutritive and medicinal value of fish has been recognized from ancient time to recent era. Maharashtra is rich in freshwater (rivers, irrigation canals, dams, and lakes) reservoirs and its fish diversity. Therefore, Maharashtra is one of the important states for fish production and natural water resources and there is great scope for developing fisheries in this state. Fish diversity is declining rapidly each day due to unending anthropogenic stress. This diversity is not only the wealth of our world but it also has some serious implications on fishery. Thus there is an urgent need for proper investigation and documentation of this fish diversity in order to develop a fresh water fish diversity information system having both bioinformatics and georeferenced databases of fish and fish habitat. In the present review documentation of the fish fauna of fresh water reservoirs in the Maharashtra state for 2000 to 2014 is done.[7]

Materials and Methods

During the month of February 2024 to April 2024 the present study was conducted , five sample stations were selected as they are major fish markets in Nashik :Doodh Bazar fish market [Bhadrakali market][station 1] , Trimurti chowk CIDCO [station 2] , Satpur fish market [station 3] , Jail Road fish market [station 4] , Bhabha nagar fish market [station 5]

The survey was held to examine and gather database of variety of fishes available in Nashik fish market. Common carp species that were found in all four market are *Catla , Labeo rohita , Labeo calbasu [orangefin labeo] , Cirrhinus meigala , Pampus argenteus* [pomfret black and silver] , *Oreochromis niloticus* [Tilapi – jalebi fish] , *Scomberomorus cavalla* [king Mackerel – surmayi] , *Clarias fuscus [*catfish] *, Sardinella longiceps* [Tarli machli] , *Anguilliformes* [vam – eel] . are some of them . Identification of Fishes were done using handbook Marine fisheries resources of Maharashtra , field identification of fish species occurring in the Indian seas , key to the freshwater fishes of Maryland [2009] , Fishes were carefully examined for presence or absence of scales, snout position , lips , fins , barbales . Identification was done by standard reference . Clear picture was captured by mobile camera.

The images were captured for identification purpose , images were taken through GPS MAP CAMERA an app which gives detailed information about location , latitude , longitude , date , time and GMT . By using VIVO V19 pro phone all the images were taken . About images ,

Image size : 6880*5160

Orientation : 0

File size : 9.84 MB

Manufacturer : vivo

Model : vivo 1933

Flash : no

Focal length : 4.71mm

Aperture : 1.79

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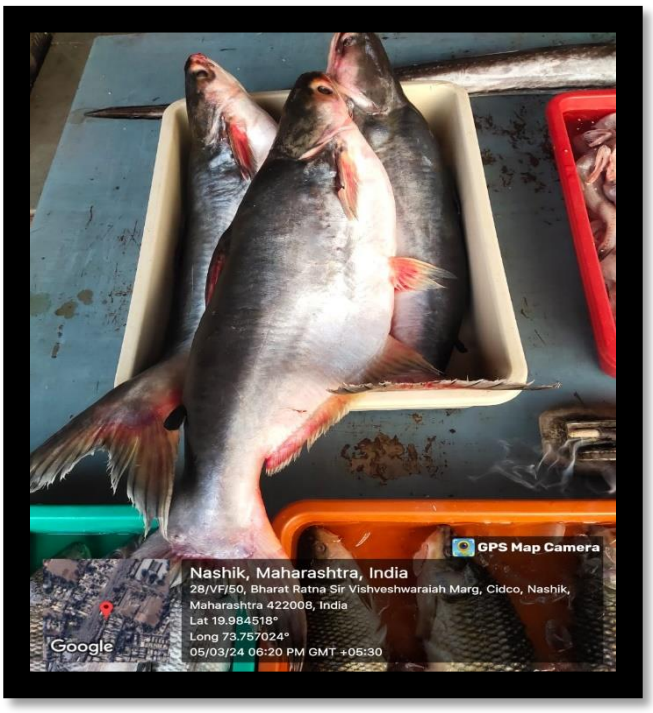

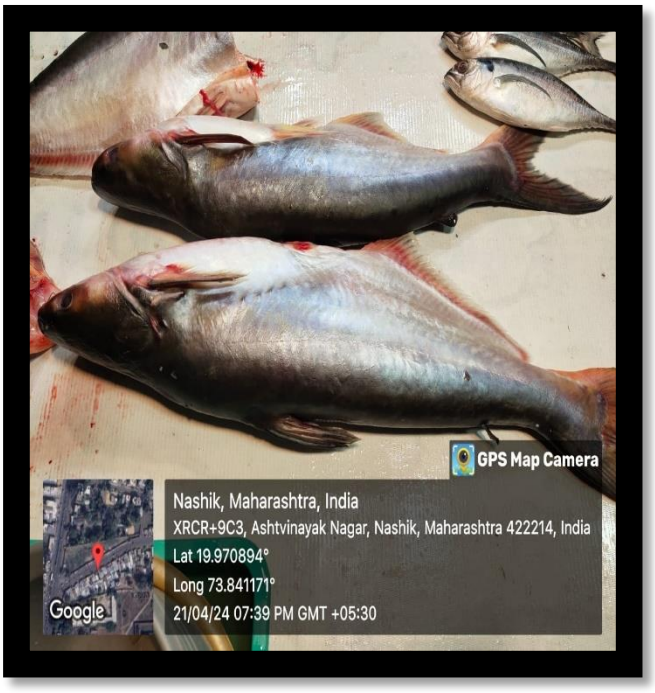

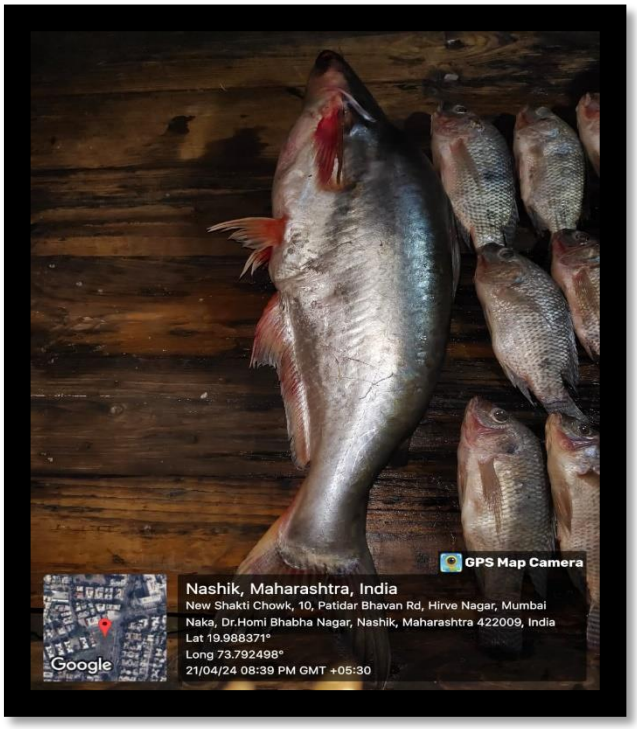

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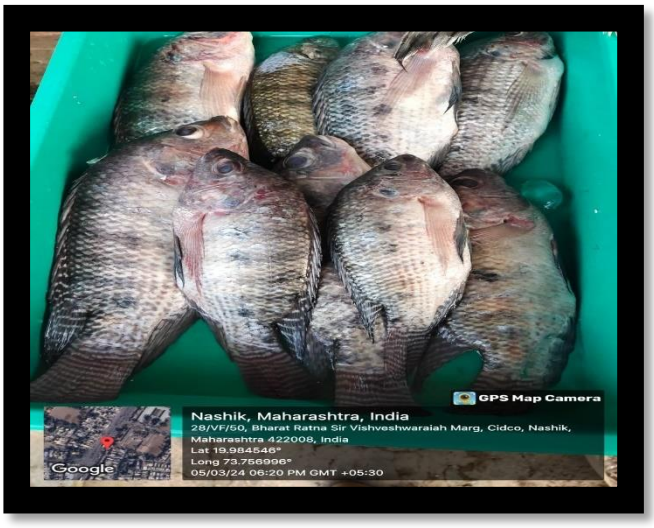

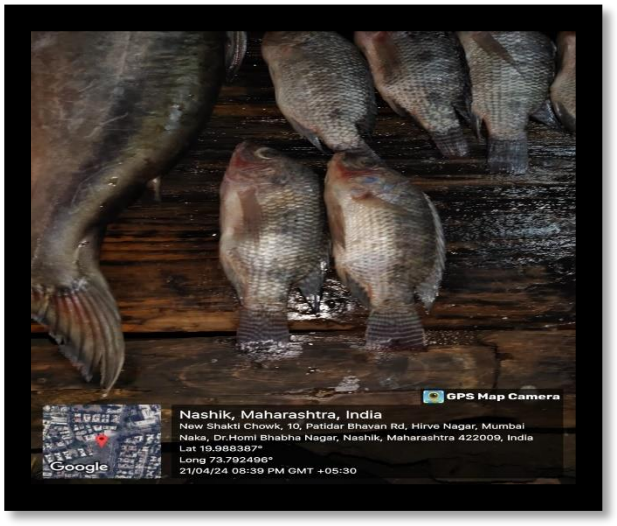

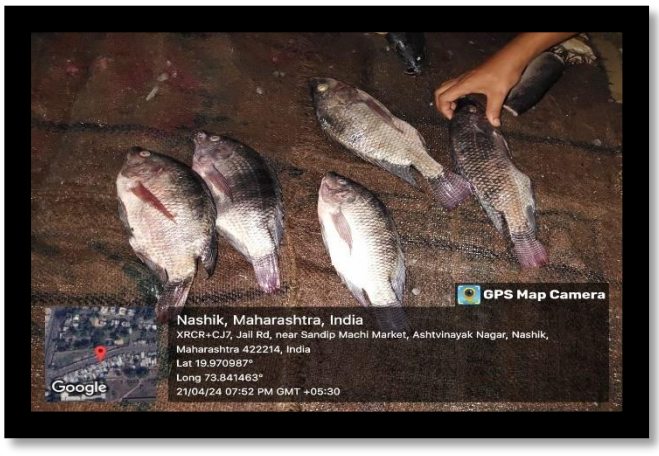

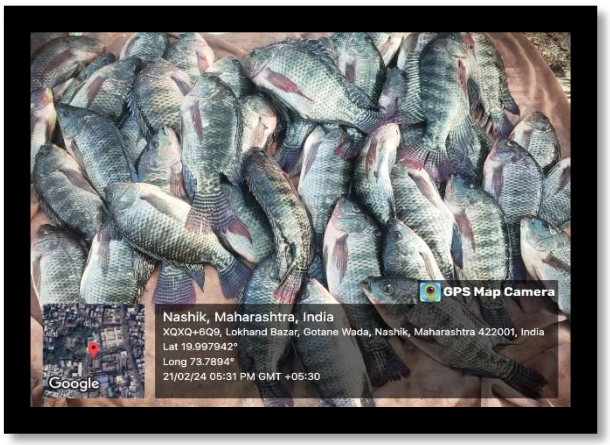

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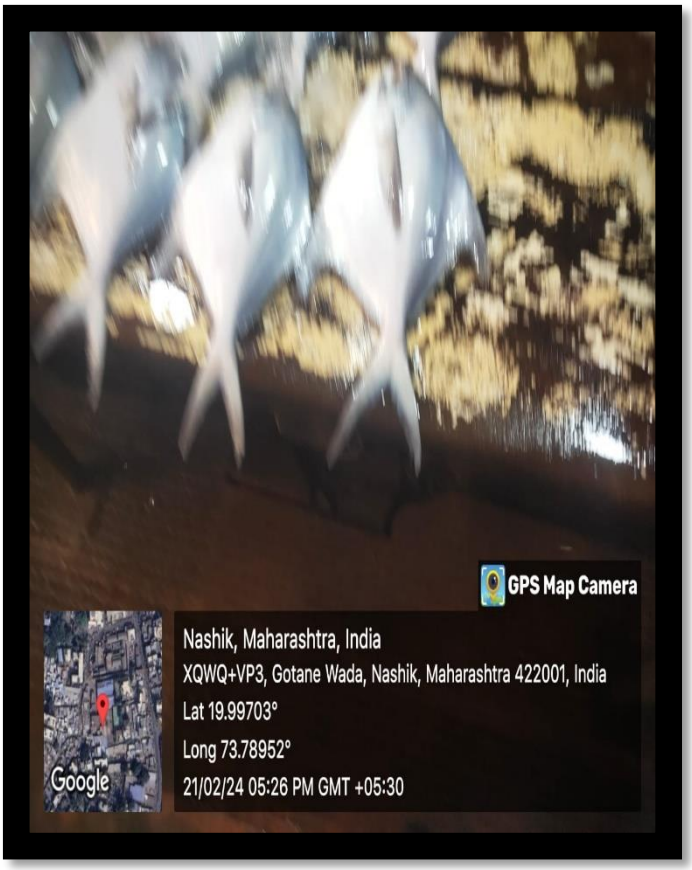

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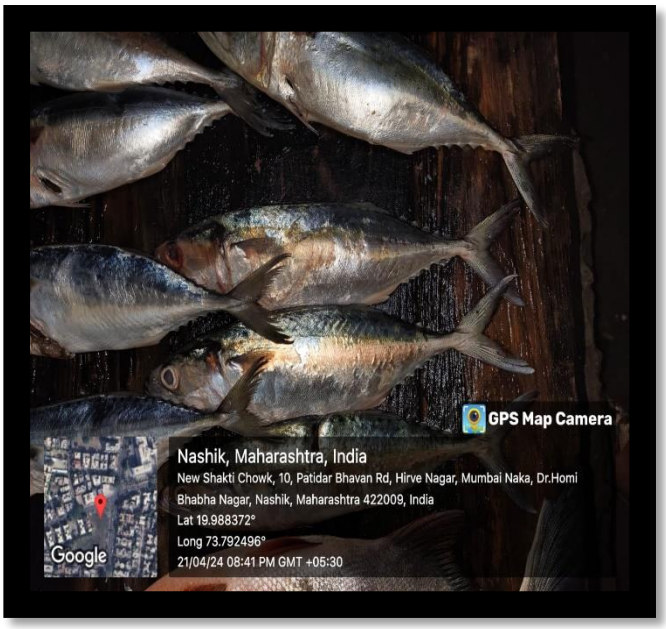

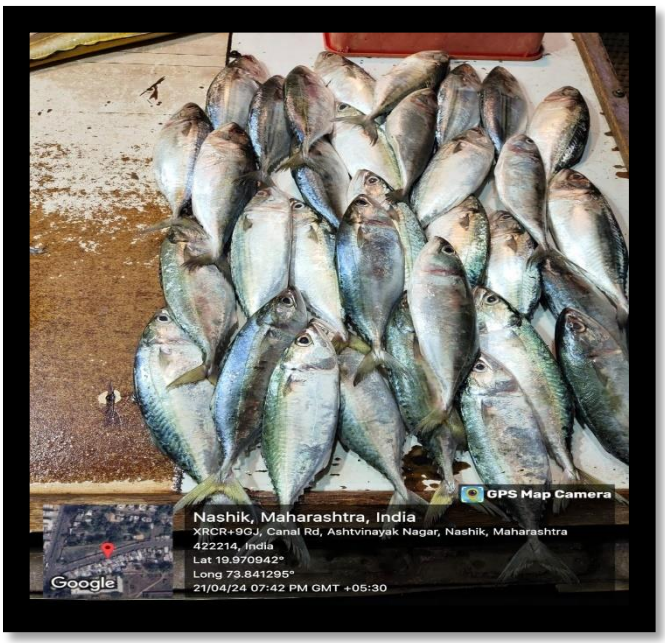

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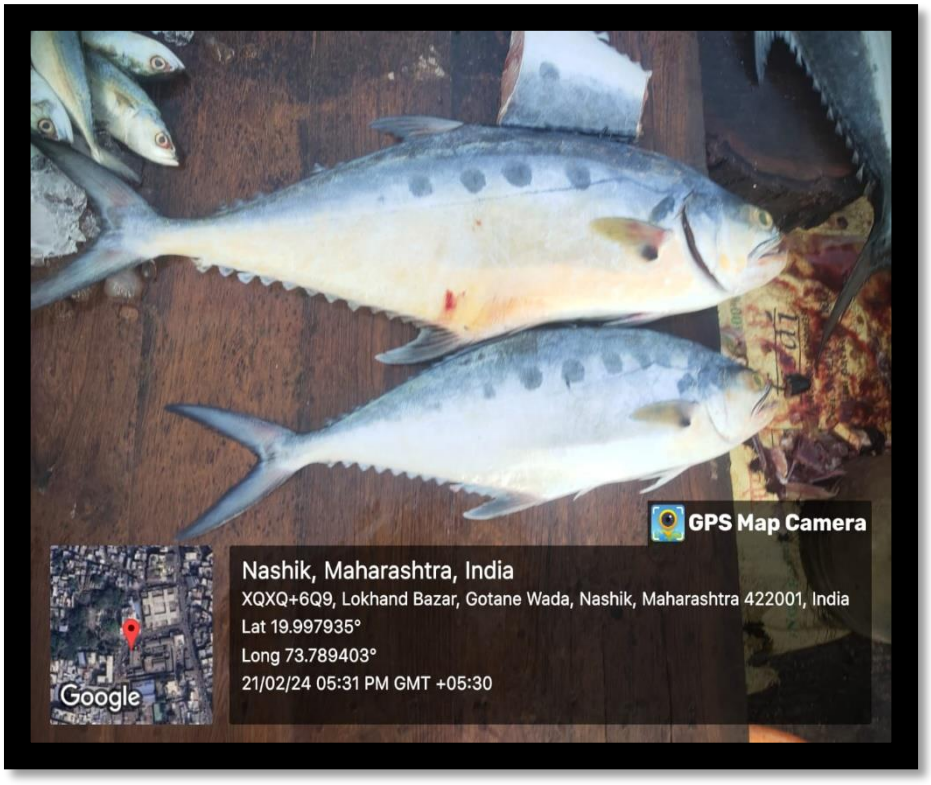

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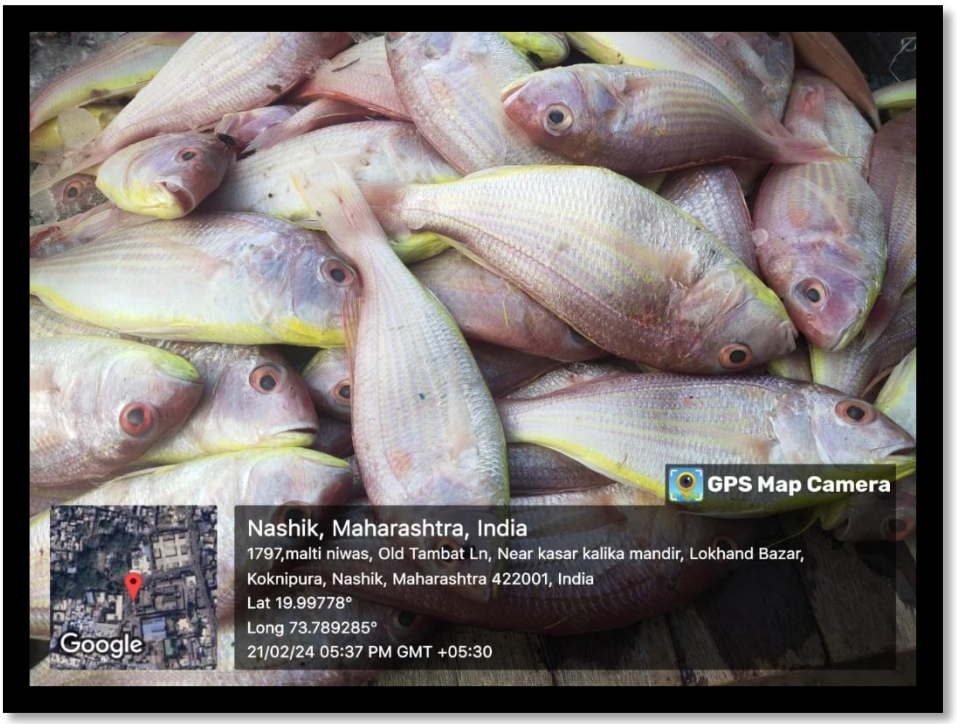

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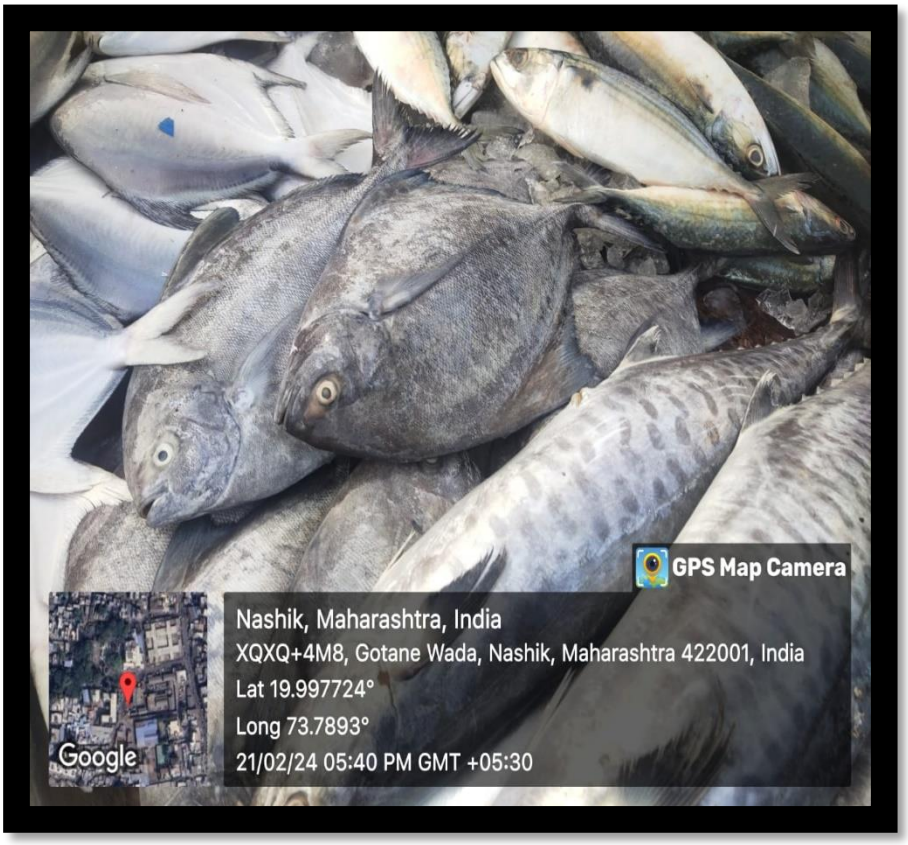

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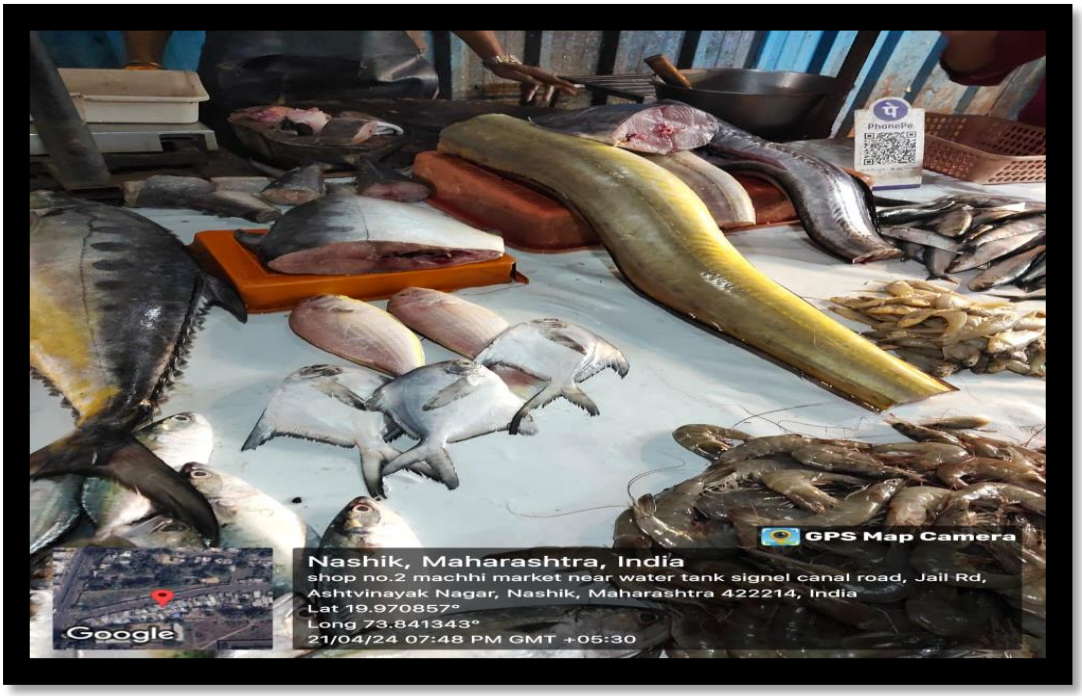

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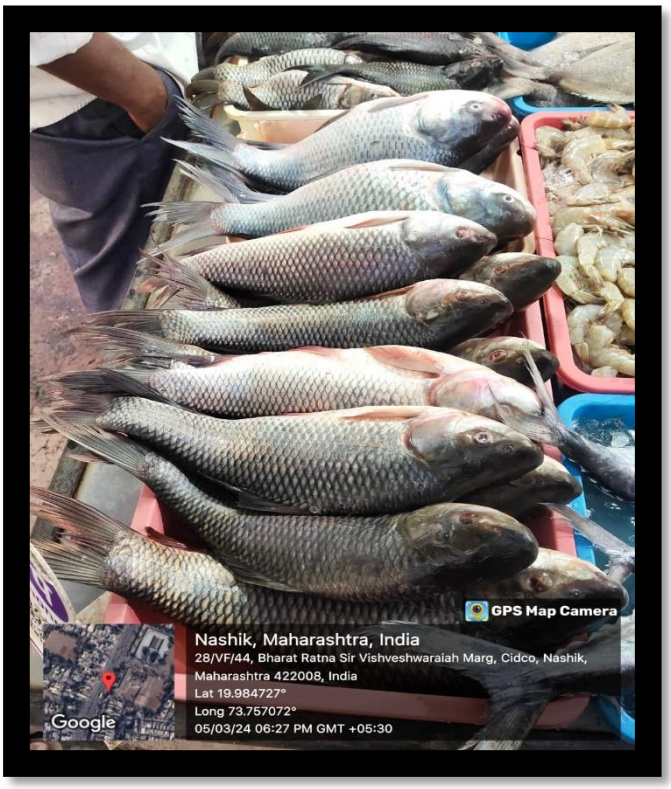

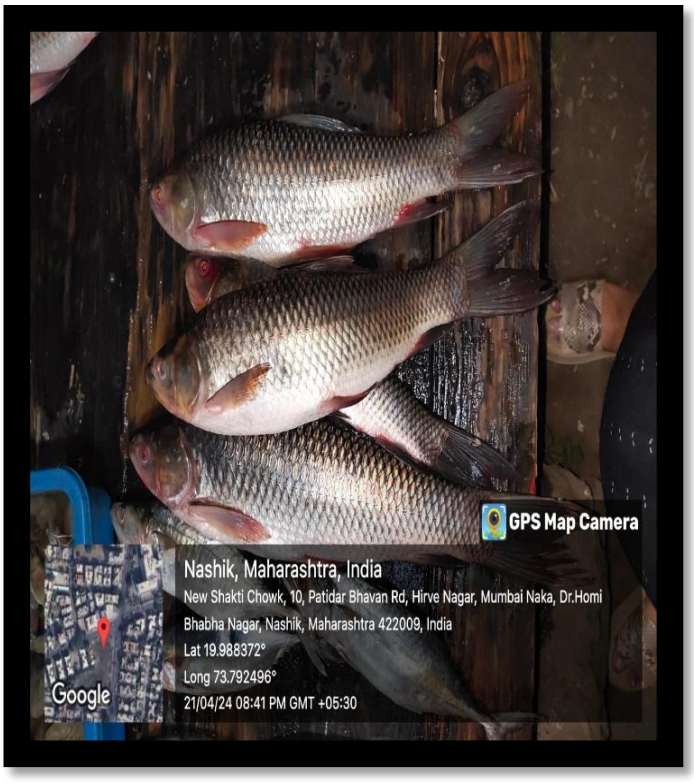

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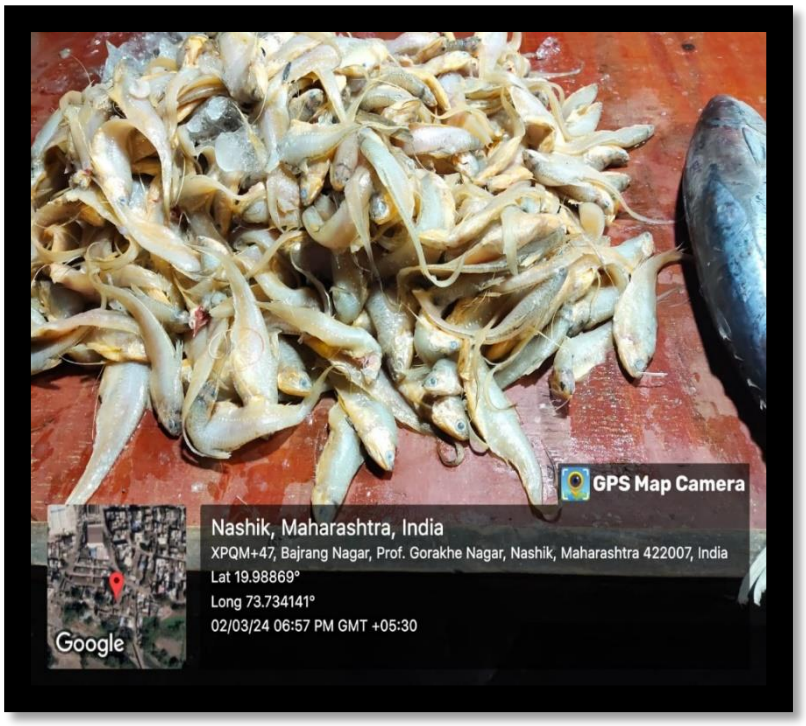

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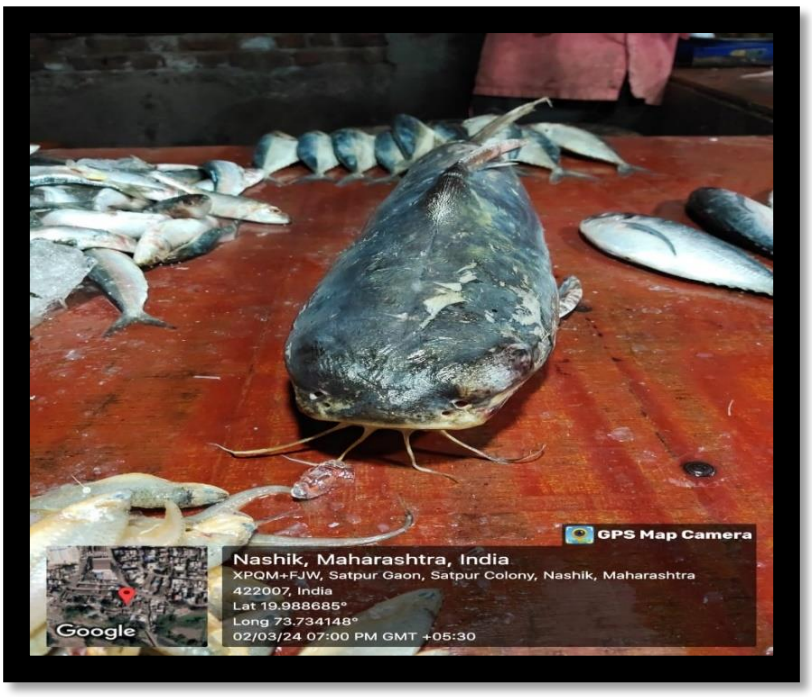

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Results

Present study record:

Species Name	Bhadrakali Market	Satpur Market	Jail Road Market	Trimurti Chowk Market	Bhaba Nagar Market
Cichliformes	+	+	+	+	+
Pampus	+	+	_	+	_
Scomberomorus Cavalla	+	+	+	+	+
Parastromateus Niger	+	+	+	_	_
Stolephorus Indicus	+	_	_	+	+
Nemipterus Japonicus	+	+	_	+	_
Rastrelliger Kanagurta	+	+	+	+	+
Anguilliforme	+	+	+	+	+
Labeo Rohita	+	+	+	+	+
Catla Catla	+	+	_	+	+
Cirrhinus Cirrhosus	+	_	_	_	_
Claris Barrachus	+	_	_	_	_
Pangasius	+	+	+	+	+
Solea	_	+	_	_	_
Indian Anchovies	+	+	_	+	_
Carassius Auratus	+	_	_	_	_
Xiphias Gladius	+	_	_	_	_
Pampus Argenteus	+	+	_	+	+

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Discussion

In this present study, studied rich biodiversity of fishes were recorded in major fish markets of Nashik. The fish specimen recorded from all the 5 major fish market Cichlidae , Bramidae , Scombridae , engraulidae , scombrid, Anguillidae , Cyprinidae , Clariidae , Pangasiidae , . A total 20 species such type Indian major carp , catfish , exotic carp , etc. are available in the market . Carp fishes were dominant in the studied market because of high consumer demand and reasonable rates and carp species are cultured very much . It also observed that Rohu , Catla , mrigal , Wam , minor carp , silver carp , golden anchovy , tilapia , bangda , Basa , pomfret were most available in the market because of those species has highest demand in the market . Basa fish which is cartilaginous fish is mostly purchased by caterers which is high in demand in ceremony , parties and weddings . On the basis of survey all total 17 species was identified and classified. Where as in studies it shows diversity of fishes in Godavari River and Dharna , Vaitarna Dam various species was observed Catla , Labeo rohita , Cirrhinus mrigala , Labeo calbasu , Cyprinus carpio , Rita , Bagarius , Heterooneustes fossilis , Channa punctatus , Mastacembelus armatus . [8] . Each natural habitat has a variety of species which varies in their relative abundance . according to survey some species are common , others are common still other may be abundant . In India , few studies have been initiated to document the fish diversity and assemblage . Much has been stated about declining fish bio diversity and its conservation issues . According to [9] it was observed that the supplies of Indian major carps were good and their demands were high in the two markets. There were 22 retailers found to sell fish in Dindori fish market and 20 in Vani fish market. It was found that 15 retailers were fishermen in Dindori fish market and 10 retailers are fishermen in Vani fish market.[10], recorded 33 fish species belonging to 5 orders, 9 families and 21 genera. [11] work done Biomass assessment and production of fish species of the Bichhiya river Rewa (M.P.) study were measured 51 fish species. Dominance species of fishes were Labeo calbasu, Labeo rohita, Mystus seenghala, Catla, Cirrihinus mrigala, . The total density of Dominance fish species 53.06%. The total fish production were 1’04331 kg in the period of one year. [12] [10] recorded 58 species of fish from western region of Narmada river at Jabalpur. [13] work done on Biodiversity of Ichthyofauna of Narmada river of Mandleshwar region, Madhya Pradesh, India and recorded 48 species of fish belonging to 7 orders and 17 families. Bose confirm the occurrence of 26 fish species belonging to 6 orders 18 genera and 9 families. The order cypriniformes was dominant with 13 fish species to be followed order silluriformes (4) and channiformes with 4 species, order clupeiformes², perciformes, mastacembeliformes & mugliformes with one fish species each, recorded 57 species, belonging to 35 genera, 13 families, and 6 orders from middle stretch of river Tawa. Bakawale worked on the fish Species diversity of the River Narmada in western zone, and recorded total 51 species of fish belonging to 7 orders and 15 families. [14]

Conclusion

In present study major fish markets of Nashik city were examined to study fish diversity and there abundance , conclude that a considerable amount of freshwater as well as marine water fishes were reported in adequate amount . In Bhadrakali fish market which is also known as Doodh Bazar have variety of freshwater as well as Marine water fishes in abundant amount, there were 25 stalls vendors were selling fresh marine fishes as well as freshwater fishes . Some vendors were having live freshwater fishes specially catfish and some variety of eels , this market is dominant to rest four market , fishes like catfish, Anguilliforme , Pampus Argenteus , Nemipterus Japonicus , Rohu , Catla , Indian Mackerel , were in adequate quantity , rare species like Mangur , goldfish , swordfish were also reported . In Satpur fish market freshwater fishes were dominant to rest of other fish market their were catfishes, Tilapia , Pangasius , Rohu , Catla , Wam , Mandeli , in large quantity , marine water fish was not fresh and very limited quantity was there only one stall of marine water fish was reported , among all five market only in Satpur market Lape fish was reported which was unique during survey also Singhada fish was reported only in Satpur fish market . In Trimurti Chowk fish market there was less quantity of freshwater fishes , adequate amount of marine water fishes were reported in entire market only Three stalls were reported all vendors were having same variety of fishes no catfish was available . In Jail Road fish market as compare to other three market was having very low variety of fishes only two stalls there selling marine water fish that to Pomfret , Surmayi , Pink Perch only and 3 vendors were selling Telapia , Chopra , Halwa fish was also reported , and some vendors were having live catfish from Vaitarna Dam and Dhar river .In Bhaba nagar fish market very small variety of fishes were reported such as Tilapia , Rohu , Pangasius , Catla , Silver Pomfret in small quantity . Studies shows diversity of freshwater as well as marine water fishes in Nashik city . In this current study, studied rich biodiversity of fishes in the Nashik city. The fish specimen recorded from all the 5 major fish market Cichlidae , Bramidae , Scombridae , engraulidae , scombrid, Anguillidae , Cyprinidae , Clariidae , Pangasiidae , . A total 20 species such type Indian major carp , catfish , exotic carp , etc. are available in the market. From above result ,

conclude that families of fish that were reported are as follows Cichlidae , Bramidae , Scombridae , Carangidae , Engraulidae , Percidae , Scombrid, Anguillidae , Cyprinidae , Clariidae , Pangasiidae , Soleidae , Engraulidae .Fish Species of family Cyprinidae were dominant over other families and Scombrid too .

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