**Studies on diversity and distribution of ichthyofaunal fishes in Erracheruvu, siddipet distric Telangana state.**

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**Abstract**

The fish fauna of Erracheruvu consists of 29 species belonging to 19 genera of 6 Orders 12 families.Among the collections 13 species of Cypriniformes i.e. Catla Catla, Cirrhinus mrigala, Cirrhinus reba, Labeo calbasu ,Labeo rohita ,Labeo potail ,Cyprinus carpio carpio, Punctius chola, Punctius titius, Punctius sarana sarana, Amplypharygodon microlepis, Salmostoma bacaila, Lepidocephalius guntea, belonging to family Cyprinidae, only one species of Cypriniformes belonging to family Cobotidae namely Lepidocephalius guntea. Order Siluriformes consists of 7 species belonging to 4 families, Mystus bleeker Mystus cavasius ,Mystus vittatus Three species belongs to family Bagridae, Wallago attu, Ompok bimaculatus two species belongs to Siluridae, Clarias batracus belongs to family Claridae and Heteropneustues fossils belongs to family Heteropneustidae. Order Osteoglossifomes consists of one species Notopterus Notopterus belongs to family Notopteride. Order Channiformes consists of three species Channa punctatus, Channa striatus, Channa orientalis belongs to family Channidae. Order Perciformes consists of four species Glosobius giuris giuris belongs to family Gobidae, Anabas testudineus belongs to family Anabantidae, Mastacembelus armatus, Mastacembelus panclus belongs to family Mastacembelidae. Order Antherniformes consists of one species Xenentodon cancilla belongs to family Belonidae. My research work was carried out on Erracheruvu of Siddipet district, Telangana state, India for three years that is 2015-2016, 2016- 2017 and 2017-18. Erracheruvu Water is alkaline in nature. And it is in mesotrophic condition. The Physico-chemical water is indicating that the water body is highly productive. The results were showed that seasonal variation in some physico-chemical parameters and the water is best for drinking and domestic use.

**Key words:** diversity, physico-chemical,mesotropic,fossils,

**1.Introduction**

Water is a basic ingredient of life. Prosperity of civilization about 80% of the earth’s surface is covered by water, yet the inland fresh water availability is account for less than one percent. The fresh water bodies such as reservoirs, tanks, ponds, rivers are major resources of water for consumption by human beings and livestock, mainly for drinking, domestic purposes, and agriculture and aquaculture practices. Hippocratus (460 to 354 BC) the father of medicine stated that “Water contributes much to health” and asserted that the rain developmental planning and sustainable use of water resources. Water should be boiled and filtered before use; otherwise, it would have a bad smell and cause harshness (Borchart and Watton, 1971). The fresh water aquaculture in India occupies around 80% of carp fishes. Carp culture is practiced by 80 to 85% cent small

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fish farmers in the country. Under practicing integration of carp aquaculture, the compound feed in pellet form for livestock and poultry can also be used for increase in fresh water carp fish production. In aquaculture, the current freshwater fish feed consumption is estimated at 0.7 million tones and expected that the demand for freshwater fish feed would also grow at 5-6 percent in near future FASAR (2015). The productivity of small carp fish farmers can be enhanced with floatable and water stable aqua pellet feed in small quantities. Fish production through aquaculture is realized in a wide variety of culture systems, depending on farm location, the nature of the water and culture intensity. Aquaculture systems may be land-based or water-based. Land-based systems are built on dry land and include mainly ponds, and rice fields. Water-based systems are usually situated inland or in sheltered coastal waters, and include enclosures, cages, pens and rafts. The majority of aquaculture production comes from land based freshwater culture systems. Aquaculture systems may be categorized as extensive, semi-intensive and intensive, although there are no rigid boundaries among categories. Production in extensive pond systems is based on the natural productivity of the pond and solar energy. In semi-intensive systems, fish are purposely stocked and the natural food supply is enhanced through the use of organic and inorganic fertilizers and low-cost supplemental feed such as rice bran, oil cake and other reservoirs agricultural by-products. Today, extensive and semi-intensive aquaculture systems contribute the bulk of the world's aquaculture production. During the past three decades, aquaculture has expanded, diversified, intensified and made technological advances. The potential of this development to enhance local food security, alleviate poverty and improve rural livelihoods has been well recognized. The Bangkok Declaration and Strategy (NACA/FAO, 2000) emphasizes that the practice of aquaculture should be pursued as an integral component of development, contributing towards sustainable livelihoods for poor sectors of the community, promoting human development and enhancing social well-being. Aquaculture is not only seen as an important contributor to development, but also as an important tool for increasing food security, especially in the developing world. Rural aquaculture, including enhanced fisheries and culture-based fisheries, has made significant contributions to the alleviation of poverty. This has been achieved directly through small scale farming households raising aquatic organisms for domestic consumption and/or income generation. Indirectly, it has provided employment and supplied low-cost fish to local markets. In Asia, where most fish farmers are relatively poor, there is vast potential for the poorer section of the society to become involved in aquaculture. There are wide opportunities for the poor to integrate aquaculture into existing farming systems and thus there is still room for growth in aquaculture production (Lewis, 1997; FAO, 2000).

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**2. Material and Methods**

**Collection of Samples**

Water tests were gathered from Erracheruvu at month-to-month interims for a

time of three years June-2015 to May-2018 at four distinctive inspecting stations in Erracheruvu. Water tests were gathered from chosen stations as required for the investigation of compound parameters. Physical information of the Erracheruvu was recorded on the spot. Tests for zooplankton investigation were gathered by plankton net and preserved with suitable preservations.

**HYDROGRAPHY**

Physical parameters

**Temperature:**

Temperature is the most commonplace environmental factor and the most effectively measured. Atmospheric temperature in Warangal locale and water temperature at each station was recorded utilizing conventional mercury thermometer to the nearest 0.1 ⁰ C. Water temperature, however, was recorded at profundity of about 6 cm below the surface dimension.

**Electrical conductivity:**

The conductivity was estimated in the field utilizing portable electronic conductivity meter (Elico model CK-710) at 25⁰C the qualities were communicated in µmhos/cm.

**Hydrogen-ion-concentration:**

pH recording was made at four stations utilizing an advanced convenient pH

meter (Elico, display LI.120) which gives direct estimation of pH.

**Total Dissolved Solids (TDS):**

A glass measuring beaker was dried at 105⁰C oven temperature and measured, and after that 250ml of the filtrate from TDS experiment was taken in this container and set in to the broiler at the equivalent temperature. After the total evaporation of the filtrate the dry load of the beaker was taken and ascertain for an estimation of weight in one liter of water samples. This gave the estimation of all out broke up solids communicated in mg/l.

**CHEMICAL PARAMETERS**

Dissolved Oxygen (DO):

Oxygen is the most important elements in water. The content of dissolved oxygen

in natural water depends on the physic-chemical and biochemical activity in water.

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Biological Oxygen Demand (BOD):

Sampling is empirical in determining the relative oxygen demand of natural water. It measures the organic matter used to oxidize inorganic substances, such as sulphides and iron ions, and the oxygen necessary for the biochemical decomposition of oxygen.

Phosphates:

Phosphorus is found in natural waters, such as phosphate. It is one of the most important nutrients needed for the production of nucleic acids, phospholipids and various phosphorylated compounds. The main sources of phosphates in aquatic ecosystems are phytoplankton, phosphorus species, household waste, detergents and agricultural waste. Phosphorus is mainly associated with biological productivity, nutrient enrichment and eutrophication.

Nitrates:

Nitrate is the most highly oxidized state of the element found in the water. It was measured by Brucine method.

Total Hardness: This rigidity is caused by the presence of calcium and magnesium ions in water. Do not exceed 300 ppm in fresh water.

Total Alkalinity:

Alkalinity of water is the ability to neutralize acids. In natural waters, this depends on the hydrolysis of salts formed by the main components and strong bases such as free hydroxyl ions, carbonates and bicarbonates. It is measure of the general nature of water and can be interpreted in terms of specific materials.

**3.Results and Discussion**

**Ichthyofaunal Diversity:**

The fish fauna of Erracheruvu consists of 29 species belonging to 19 genera of 6 orders, 12 families. Among the collections 13 species of Cypriniformes i.e. Catla Catla, Cirrhinus mrigala, Cirrhinus reba, Labeo calbasu, Labeo rohita, Labeo potail, Cyprinus carpio carpio, Punctius chola, Punctius titius, Punctius sarana sarana, AmplypHarygodon microlepis, Salmostoma bacaila, LepidocepHalius guntea, belonging to family Cyprinidae, only one species of Cypriniformes belonging to family Cobotidae namely LepidocepHalius guntea. Order Siluriformes consists of 7 species belonging to 4 families, Mystus bleeker, Mystus cavasius, Mystus vittatus three species belongs to family Bagridae, Wallago attu, Ompok bimaculatus two species belongs to Siluridae, Clarias batracus belongs to family Claridae and Heteropneustues fossils belongs to family

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Channidae. Order Perciformes consists of four species Glosobius giuris giuris belongs to family Gobidae, Anabas testudineus belongs to family Anabantidae, Mastacembelus armatus, Mastacembelus panclus belongs to family Mastacembelidae. Order Antherniformes consists of one species Xenentodon cancilla belongs to family Belonidae. The present survey of fish fauna has been done by number of workers, Similar reported belonging to Fish fauna of fresh water in the different part of the world have been explored by numerous researchers (Ita et al., (1985), Chacko et al (1952), Malaviya (1961) reported the fish fauna of Jabalpur, Dutt and Sharma (1979), Gopinath and Jayakrishnan (1984) mentions 17 species of fishes from Idukki reservoir of Kerala. Rao et al., (1991), Sugunan and Yadava (1992) mentioned 40 species from Hirakhud reservoir of Orissa forming the commercial fishery, Chandrasekhar and Kodarkar (1994), Pethiyagoda (1994). Menon(1999), Sarkar and Benerjee, 2000, Sakhare (2001), Singh (2001) reported a total of 27 species belonging to six families in Pong reservoir ofHimachal Pradesh. Khedkar and Gynanth (2005) reported 37 species in Issapur Reservoir District Yeotmal. Yem and Sanni (2005). Goswami and Goswami (2006) have identified54 fish species belonging to 36 genera under 22 families in Jamalai wet land in Assam. Lakes in India support rich variety of fish species, which interns, support the commercial exploitation of the fisheries potential (Krishna and Piska., 2006). Maharastra State India.,Sharma (2008) reported 87 species in Issapur dam in district Yavatmal, Srikanth. K,Ramu. G, Benarjee. G (2009) reported 31 species in Ramappa Lake Warangal, A.P, Venkateshwarlu et al., (2009) observed fish diversity of Sogne and Santhkadur tank of Shimoga Karnataka, Earlier studies on water quality of some fresh water bodies in relation to fish culture were also made by Pawar and Shendge (2009); Ramu et al.,(2009). Johnson & Arunachalam (2009). Keshre and Mudgal (2012) were surveyed fish fauna of the Moghat reservoir, Narasimha and Benarjee (2013) 30 species of fishes were recorded at Nagaram Tank Warangal, Nagma et al (2013) reported 18 species in study fresh water fish fauna of district Bijnour in Uttar Pradesh, E Thirupathaiah M, Samatha Ch, Sammaiah Ch (2014) reported 25 species in Diversity and Conservation Status of Fish Fauna in Freshwater Lake of Kamalapur, Krimnagar District. Rama Rao. K (2014) reported 23 species in Ichthyofaunal bio diversity in the lower Manair Dam a Dam at Karimnagar district; Telangana State, India, Ahirrao (2014) reported 39 species in Bori dam at Tamaswadi, Parola Dist. Jalgaon, Pawar (2014) reported 42 species in Majalgaon reservoir from Beed district. Laxmappa and Ravindar Rao (2015).Surender Reddy. K, Balakrishna. D, Swarna Latha. U, Ravinder Reddy (2015) Renuka Yellamma Lake, Peddapally, Karimnagar District. Pethiyagoda (1994).With later logical advances and new procedures we can preserve oceanic assets and guarantee its hereditary assorted variety. We are the fishery researcher need to elevate fishery and attempt to upgrade the fish generation to improve the financial states of conventional fish ranchers. As per vision 2020 record even following 50 years of freedom still there is a great deal to be done in fishery part and what has been done as

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such far in this area is just a drop in the sea. Along these lines there is a need to take measures, which must be started to secure and protect the fish hereditary asset and few of them or additionally at the skirt of termination in this locale. The fish germplasm asset of this area shows a blend of both heavy and plain water frames. They involve assorted natural routine in their conveyance. In this setting the present investigation has been embraced which is an offered to show the need of this agro-industry to improve the expectations for everyday comforts of fishery society, to upgrade nourishment security and furthermore to advance the fishery division in siddipet region of Telangana.

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