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# Ichthyofaunal Diversity in Khandia Pond of Jhalawar, Rajasthan

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**ABSTRACT:** Khandia Pond Jhalawar is a tourist attraction located in Khandia, Rajasthan. The average rating of this place is 3.60 out of 5 stars based on 18 reviews. The street address of this place is H5CG+XC Talab, Plot No. 14/15 Kandiya Choraha Near Khandia, Khandia, Rajasthan 326001, India. It is about 1.76 kilometers away from the Jhalawar Cit railway station

Fish is a valuable source of protein and occupied a significant position in the socio-economical fabric of South Asian countries. India has rich biological heritage that qualifies it, as one of the twelve-mega diversity nations of the world. The fishes alone contributing 2,546 species and the fishes of inland water bodies of Indian subcontinent have been subject of study since last century. The lack of information on the ichthyofauna is a big handicap for popularizing little known fish variety in a particular ecosystem. Thus there is need to survey fish fauna associated with different fresh water habitats, which will help in planning methods for their production and effective exploitation. The present study is carried out to study diversity of fishes in Khandia pond, Jhalawar, Rajasthan, during 2023.

**KEYWORDS:** Khandia, pond, Jhalawar, Ichthyofaunal diversity, Rajasthan

## I. INTRODUCTION

Khandia pond details

The standard APHA, (2005) methods were followed for estimation of physical, chemical and biological parameters. Details are given as under: Methods used for physical parameters were:- (a) Atmospheric Temperature - Temperature affects the solubility and in the turn the toxicity of many other parameter. The solubility of solid increase with increasing in temperature, while gases tend to be more soluble in cold water. The instrument used to record temperature :- A thermometer was with a least count of 0.5 C. [1,2,3]The thermometer was immersed in a thoroughly shaken water sample put in a clean and dry beaker and reading (in C) were noted down upto one place after decimal. (b) Atmospheric Relative Humidity - (c) Water Temperature - (d) Turbidity – Principle – Turbidity is the cloudiness of a fluid caused by individual particles that are generally invisible to the naked eye, similar to smoke in air. The measurement of turbidity is the key test of water quality. The WHO, establishes that the turbidity of drinking water should not be more than 5 NTU, and should not be less than 1 NTU. Nephelometer is employed to determine turbidity; measures the intensity of light passes through a water sample. Causative factor – non settle able suspended matter (colloidal) e.g., clay, silt, finely divided organic matter or plankton

## II. DISCUSSION

The present study deals with the fish diversity of the Khandia pond, Jhalawar in Rajasthan. The order Cypriniformes was recorded with maximum fish diversity (17), siluriformes and perciformes each represented with 5 spp., osteoglossiformes, synbranchiformes and clupeiformes represented with 2 spp. each, whereas beloniformes only by one species. Besides, impact of anthropogenic activities on fish fauna is discussed and some remedies are also suggested.

Biodiversity and its conservation are regarded as one of the major issues of enabling sustainable use of natural resources. This contribution focuses on the diversity of fish population and their conservation aspects in the Khandia pond, Jhalawar. [4,5,6]The study revealed the occurrence of 69 species of fishes in the lake belonging to 49 genera, 24 families and 11 orders. Of these fishes, 84.2% belonged to the primary freshwater group (Cyprinids 35.39%), while the rest to the peripheral class. Attempts have been made to portray the fish diversity of the lake zoogeographically and emphasise the value of conserving biodiversity. Further, results of linear regression revealed significant correlations between fish yield and soil organic carbon, soil potassium, water pH, total alkalinity and conductivity, and aquatic macrophytic biomass

Fish are very diverse animals and can be categorised in many ways. Although most fish species have probably been discovered and described, about 250 new ones are still discovered every year. According to FishBase about 34,800

species of fish had been described as of February 2022,[5] which is more than the combined total of all other vertebrate species: mammals, amphibians, reptiles and birds in Khandia pond, Jhalawar, Rajasthan. Fish species diversity is roughly divided equally. Different varieties are seen.

Cartilaginous fish have a cartilaginous skeleton. However, their ancestors were bony animals, and were the first fish to develop paired fins. Cartilaginous fish don't have swim bladders. Their skin is covered in placoid scales (dermal denticles) that are as rough as sandpaper. Because cartilaginous fish do not have [7,8,9]bone marrow, the spleen and special tissue around the gonads produces red blood cells. Their tails can be asymmetric, with the upper lobe longer than the lower lobe. Some cartilaginous fishes possess an organ called a Leydig's organ which also produces red blood cells.

Bony fish include the lobe-finned fish and the ray finned fish. The lobe-finned fish is the class of fleshy finned fishes, consisting of lungfish and coelacanths. They are bony fish with fleshy, lobed paired fins, which are joined to the body by a single bone.[12] These fins evolved into the legs of the first tetrapod land vertebrates, amphibians. Ray finned fishes are so-called because they possess lepidotrichia or "fin rays", their fins being webs of skin supported by bony or horny spines ("rays").

Teleosts are the most advanced or "modern" fishes. They are overwhelmingly the dominant class of fishes (or for that matter, vertebrates) with nearly 300 species, covering about 96 per cent of all extant fish species. They are ubiquitous throughout fresh water and marine environments from the deep sea to the highest mountain streams. Included are nearly all the important commercial and recreational fishes

### III. RESULTS

Toxic fish produce strong poisons in their bodies[10,11,12]. Both poisonous fish and venomous fish contain toxins, but deliver them differently.

Venomous fish bite, sting, or stab, causing an envenomation. Venomous fish don't necessarily cause poisoning if they are eaten, since the digestive system often destroys the venom.[117]

By contrast, poisonous fish do not bite, sting, or stab to deliver their toxins, but they are poisonous to eat because they contain toxins in their body that the digestive system does not destroy.[117]

A 2006 study found that there are at least 120 species of venomous fish.[118] There are more venomous fish than venomous snakes. In fact, there are more venomous fish than the combined total of all other venomous vertebrates.[118] Venomous fish are found in almost all types of ponds especially Khandia in Jhalawar, but mostly in saline waters. They wound over 50,00 people every year.[119]

Venomous fish carry their venom in venom glands and use various delivery systems, such as spines, sharp fins, barbs, spikes or fangs. Venomous fish tend to be either very visible, using flamboyant colors to warn enemies, or skilfully camouflaged and may be buried [13,14,15]in the sand. Apart from the defense or hunting value, venom helps bottom-dwelling fish by killing the bacteria that tries to invade their skin. Few of these venoms have been studied. They are a yet-to-be-tapped resource for bioprospecting to find drugs with medical uses.[120]

Treatment for venom stings usually includes the application of heat, using water at temperatures of about 45 °C (113 °F), since heat breaks down most complex venom proteins.

Throughout human history, important fisheries have been based on forage fish.[132] Forage fish are small fish which are eaten by larger predators. They usually school together for protection. Typical ocean forage fish feed near the bottom of the food chain on plankton, often by filter feeding. They include the family Clupeidae (herrings, sardines, menhaden, hilsa, shad and sprats), as well as anchovies, capelin and halfbeaks. Important herring fisheries have existed for centuries in Khandia pond. Likewise, important traditional for anchovy and sardine fisheries have operated in the Khandia, Jhalawar.

Higher in the food chain, Gadidae (cod, pollock, haddock, saithe, hake and whiting) also support important fisheries. Concentrated initially cod was one of oldest fisheries, later extending to the ponds in Rajasthan.[134] Declining numbers led to international "cod wars" and eventually the virtual abandonment of these fisheries. In modern times, the Khandia pond supports an important fishery increasing high ichthyofaunal biodiversity.[16,17,18]

Food fish, Oily fish, whitefish  
Farmed fish  
Fish used for medicinal purposes

#### IV. CONCLUSION

Recreational and sport fishing is big business[135] Khandia spend about 30 lakhs annually and support 350,000 jobs.[136] Some of the more popular recreational and sport fish include bass, marlin, porgie, shad, mahi-mahi, smelt whiting, swordfish, and walleye.

Fishkeeping is another popular pastime, and there is a large international trade for aquarium fish.[19,20]

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