

**FISH DIVERSITY AND COMMUNITY STRUCTURE IN
GHODAGHODI LAKE, KAILALI**



By

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RECOMMENDATIONS

This is to recommend that the thesis entitled “**Fish Diversity and Community Structutre in Ghodaghodi Lake, Kailali**” has been carried out by **Dipendra Joshi** for the partial fulfillment of Master’s Degree of Science in Zoology with special paper **Fish and Fisheries**. This is his original work and has been carried out under my supervision. To the best of my knowledge, this thesis work has not been submitted for any other degree to any institutions.

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LETTER OF APPROVAL

On the recommendation of supervisor "**Prof. Dr. Kumar Sapkota**" this thesis submitted by **Dipebdra Joshi** entitled "**Fish Diversity and Community Structure in Ghodaghodi Lake, Kailali**" is approved for the examination and submitted to the Tribhuvan University in partial fulfillment of requirements for Master's Degree of Science in Zoology with special paper Fish and Fisheries.

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DECLARATION

I hereby declare that the work presented in this thesis has been done by myself, and has not been submitted elsewhere for the award of any degree. All sources of information have been specifically acknowledged by reference to the authors or institutions.

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ABSTRACT

Ghodaghodi Lake is an ox-bow perennial Lake of Ghodaghodi Lake Complex, situated in Kailali district. The present study was conducted to understand the fish diversity, community structure and distribution pattern in Ghodaghodi Lake.

A total of 13 fish species were recorded from the different section of Ghodaghodi Lake, belonging to five order, eight family and eleven genera. According to fish catch the dominant order and family of Ghodaghodi Lake were found to be Cypriniformes (40%) and Cyprinidae (40%) respectively. The dominant fish species of Ghodaghodi Lake was *Labeo gonius* followed by *Mystus tengara*, *Nandus nandus*, *Channa striatus*. The correlation between temperature and fish diversity was found to be positively correlated (0.1755, 0.5374, 0.9771 and 0.5652) in all four stations. Similarly, fish diversity and water depth are positively correlated in station I (0.2476), II (0.4376) and IV (0.7597) while station III shows negative correlation (-0.2011). All four stations showed positive correlation (0.8242, 0.8074, 0.9345 and 0.6508) between dissolved oxygen and fish diversity. Similarly, positive correlation was observed between pH value and fish diversity (0.7701, 0.8256, 0.5767 and 0.7337). The highest diversity index (2.46), species richness (6.14) and evenness (0.96) of fish were recorded from station III during the month January. Lowest diversity index (1.75) and evenness (0.90) was found in station II and during the month of October (2.25 and 0.88). Similarly, lowest species richness was found in station I (3.91) and during the month July (5.82).

Fish diversity and number of fishes in Ghodaghodi Lake were found to be decreased. This could be due to pollution, illegal fishing and excessive proliferation of aquatic weeds.

Key words: Fish diversity, *Labeo gonius*, Community structure, Cyprinidae.

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LIST OF ABBREVIATIONS

Abbreviated form	Details of abbreviations
%	Percentage
⁰ C	Degree Centigrate
μs/cm	Microsimen per centimeter
AAPA	Aquatic Animal Protection Act
APHA	American Public Health Association
cm	Centimeter
DOFD	Directorate of Fisheries Development
DO	Dissolved Oxygen
EDTA	Ethylenediaminetetraacetic acid
FDD	Fisheries Development Division
FNU	Formazin Nephelometric Unit
Ft	Feet
GL	Ghodaghodi Lake
ha	Hectare
IUCN	International Union for Conservation of Nature
Km	Kilometer
m	Meter
Sq.Km	Square Kilometer
VDC	Village Development Committee
WWF	World Wildlife Fund