

RESEARCH PROFILE OF Dr. HARSHA D. NEELGUND, DEPARTMENT OF ZOOLOGY, KSCD

HARSHA D. NEELGUND

Assistant Professor, Department of Zoology,
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Personal information:

Qualification : M. Sc., (2006); M. Phil., (2008); Ph. D (2022)

Date of Joining : 13-01-2012

Research interests :

Limnology, plankton, and avifaunal diversity and conservation studies.

Date: 29-8-2024

Research Publications:

Sl. No	National	International	Year of Publication
1	-	Harsha D. Neelgund & Girish Kadadevaru (2020). Avifaunal diversity of some selected waterbodies of Khanapur Taluka, Belagavi District, Karnataka, INDIA. <i>Journal of Threatened Taxa</i> , 12(5): 15572-15586. DOI: https://doi.org/10.11609/jott.5044.12.5.15572-15586 ISSN 0974-7907 (Online) ISSN 0974-7893 (Print)	2020
2	Harsha D. Neelgund & Girish G. Kadadevaru (2021): A study on seasonal variation in zooplankton abundance in Kadasgatti Minor Irrigation Tank of Bailhongal Taluk, Belagavi District, Karnataka State, INDIA., <i>Indian Journal of Science and Technology</i> , 14(27): 2238-2249. DOI: 10.17485/IJST/v14i27.323	-	2021

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3	-	Harsha Neelgund & Girish Kadadevaru (2022): A study on zooplankton community with respect to abundance, diversity, trophic status and variations in physiochemical factors at Bidi Minor Irrigation Tank of Khanapur Taluka, Belagavi District, Karnataka, India., <i>International Journal of Ecology and Environmental Sciences</i> , 48: 85-101. ISSN: 2320-5199	2022

Conferences attended to present papers :

1. International Conferences/Webinars attended: 03

- a) Two Days International Virtual Conference on ‘WILDLIFE FORENSICS, IT’s LAWS & CONSERVATION’ on July 28-29, 2020. Jointly organized by Department of Forensic Science and Criminal Investigation, Legal Desire Media and Insights, Department of Forensic Science (SBAS) Galotias University & Wildlife Conservation Trust.
- b) One Day International Webinar on ‘High-Throughput Sequencing Opportunities’ organized by IQAC, Department of Zoology & Biotechnology, K.L.E. Society’s Raja Lakkhamagouda Science Institute (Autonomous), Belagavi on 24-06-2020
- c) International Webinar Series on ‘Recent Trends in Life Sciences’ organized by the Department of Zoology, G.T.N. Arts College (Autonomous), Dindigul, Tamil Nadu on 03-07-2020.

2. National Conferences/Webinars attended: 07

- a) One Day National Webinar on ‘The Abuse of Anabolic – Androgenic Steroids in Athletes: Potential Health Hazards’ on 27th June 2020 organized by IQAC, Department

of Zoology & Biotechnology, K.L.E. Society's Raja Lakhamagouda Science Institute (Autonomous), Belagavi.

b) National Webinar on 'Insects as Future Food for 21st Century' conducted on 10th July 2020 by the Department of Zoology, Bangalore University, Bengaluru.

c) National Webinar on 'Employment & Income generating potential of Beekeeping' organized by Department of Zoology, K.L.E. Society's Shri Kadasiddheshwar Arts College and H.S. Kotambri Science Institute Hubballi on 14th July, 2020.

d) National Webinar on 'Wildlife Conservation and Management with special focus on threatened species on India' on 14th July 2020 organized by Zoological Survey of India, Kolkata and Chaman Lal Mahavidhyalaya, Landhaura, Haridwar.

e) National Level Webinar series titled 'Zoonotic viral infections' by Dr. Hubert Darius J. Daniel & 'Mountains and species diversity patterns: A story of reptile distributions from the Western Ghats of India' by Dr. V. J. Jins on 22nd July 2020 organized by Department of Zoology, St. Xavier's College (Autonomous), Palayamkotti.

f) National Level Webinar series titled 'Computational probing of antiviral drugs' by Dr. Febin P. Dass & 'Cnidarians: A simple and beautiful aquatic creatures with stings' by Dr. L. Ranjith on 25th July 2020 organized by Department of Zoology, St. Xavier's College (Autonomous), Palayamkotti.

g) National Level Webinar on 'Odonate Taxonomy' on 26th July, 2020 organized by the Department of Zoology, Dr. G Shankar Government Women's First Grade College and PG Study Centre, Ajjarakad, Udupi. 2021:.

2. National Conferences/Webinars attended: 01

a) National webinar on 'Freshwater faunal diversity in India' and 'Marine environments: Diversity, threats, and opportunities organized by Department of Zoology, St. Xavier's College (Autonomous), Palayamkottai on 03-08-2021.



Avifaunal diversity of some selected water bodies of Khanapur Taluka, Belagavi District, Karnataka, India

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Abstract: An observation on avian species composition, density, and diversity was carried out at three selected water bodies of Khanapur Taluka, Belagavi District, for a period of 11 months in 2014. During the study, a total of 28 species belonging to 12 families from five orders were recorded. Of these, Ciconiiformes was represented by seven families followed by Coraciiformes by two families while Anseriformes, Charadriiformes and Gruiformes were represented by one family each. Among the three water bodies studied, maximum species composition (26 species) was recorded from Nandgad pond which also hosts Lesser Adjutant Stork and Woolly-necked Stork categorized as 'Vulnerable' and Painted Stork, River Tern and Oriental White ibis as 'Near Threatened' by the IUCN Red List. Bidi Minor Irrigation Tank stands second with 17 species while the minimum was recorded at Hebbal Minor Irrigation Tank with 11 species. Based on our observation, a smaller habitat with habitat heterogeneity can attract more assemblages of avifauna and also result in increased species richness and diversity.

Keywords: Birds, richness, relative abundance, wetland birds.

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Competing interests: The authors declare no competing interests.

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Author contribution: GK has played a crucial role in monitoring and guiding the work. HN has carried out field survey, analysis and documentation.

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A Study on Seasonal Variation in Zooplankton Abundance in Kadasgatti Minor Irrigation Tank of Bailhongal Taluk, Belagavi District, Karnataka State, INDIA.

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Abstract

Objectives: A study on seasonal variation in zooplankton community was undertaken to evaluate the present status of water quality at Kadasgatti minor irrigation tank (MIT) located in the northern transitional zone of Belagavi district. **Methods and Statistical Analysis:** Water samples were collected from January 2017 to December 2017. Physico-chemical parameters and qualitative and quantitative analysis of zooplankton were carried out. Pearson correlation was calculated using SPSS, IBM Version 21 software to find out interrelationships between water quality and zooplankton groups. **Findings:** A total of 52 species of zooplanktons were recorded during the study period with a total zooplankton abundance of 14327 individuals with a relative abundance of 35.42%. Rotifera was the dominant group with 27 species, followed by Cladocera, Copepoda and Ostracoda. The highest zooplankton abundance was observed in summer while minimum in post-monsoon season. Copepoda was highest abundant group during the entire study period with its maximum abundance during winter and gradually declined and reached to its minimum in post-monsoon. The presence of eutrophic indicator species like *Brachionus calyciflorus*, *Brachionus angularis*, *Filina longiseta* suggests eutrophication of the tank. **Novelty:** The study provides baseline data on the present status of the water body indicating that, anthropogenic activities, agricultural runoff are the main cause of eutrophication. Sustainable and holistic conservational strategies have to be adopted to protect the water body.

Keywords: Cladocera; Copepoda; Eutrophication; Rotifera; Seasonal variation; Zooplankton abundance

1 Introduction

Zooplankton occupies a critical position in the food web and is food for many fishes, aquatic insects and other zooplankton. These are more valuable as indicators of trophic conditions and respond more rapidly to the environmental changes than fishes⁽¹⁻⁴⁾. The structure of plankton community depends on complex factors like; morphometric

A Study on Zooplankton Community with Respect to Abundance, Diversity, Trophic Status and Variations in Physico-chemical Factors at Bidi Minor Irrigation Tank of Khanapur Taluk, Belagavi District, Karnataka, India

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ABSTRACT

This study was conducted at Bidi minor irrigation tank (MIT) located in hilly zone of Khanapur taluk of District Belagavi to find the inter-relationships between water quality parameters and zooplankters and to enumerate species diversity, richness, abundance. During the 18 months of study, a total of 63 species of zooplankters belonging to five classes and 24 families were recorded. Family Brachionidae (Rotifera) represented by maximum number of species (16), followed by family Chydoridae (Cladocera) with 9 species. Species richness was highest for rotifers with 31 species whereas Cladocera group reported highest abundance of 10,862 individuals. Ostracoda group was represented with 2 species and 130 individuals only. Based on the higher values of electric conductivity and abundance of *Brachionus* and other trophic indicator species, the status of Bidi minor irrigation tank can be classified as eutrophic. Sustainable management practices like regular desilting, reduction in use of synthetic fertilizers and pesticides are essential to protect the water body from further degradation.

Key words: Bidi, Khanapur, Minor irrigation tank, Species diversity, Water quality, Zooplankton abundance, Trophic status.

INTRODUCTION

Irrigation tanks are prominent source of water in the semi-arid parts of western and central India. Southern states like Andhra Pradesh, Karnataka and Tamil Nadu have largest concentration of irrigation tanks numbering 0.12 million (Palanisami et al. 2010) and account for 60% of India's tank irrigated area. They play a vital role of harvesting surface runoff during monsoon, as a source of water for fisheries, domestic needs and nutrient rich soils, brick making (Kumar et al. 2013). In India, Ganapati (1940), Raj (1941) has pioneered the studies on limnology of impounded water. Sreenivasan (1964, 1965, 1966) has made an extensive study on limnology of fresh water impoundments in Tamil Nadu. Other workers (Rao and Govind 1964, Hussainy 1967) have studied on different aspects of impounded water. Venkateshwarlu (1969), Reddy et al. (1986) and Chandrasekhar (2007) have contributed to the studies of water bodies in and around Hyderabad.

Karnataka has 25,276 wetlands in the form of irrigation tanks, ponds and reservoirs. These are mainly used for irrigation, fisheries, water supply, domestic needs, recreation, ground water recharges and silt capture (Bassi 2014). They cover more than

80% of the irrigated area. They also serve in recharging the underground water table, maintain green belt, aid as pisciculture units, drinking water source for livestock especially in rural area. Most of these tanks are rainfed tanks formed by impounding the drainage from the catchment area by means of short embankment. In recent times these water resources are subjected to negligence and suffer from poor maintenance, siltation issues, anthropocentric interventions that have led to the deterioration of these resources. Zooplanktons are important link in aquatic food chain as they play major role in energy transfer from lower to higher trophic level (Tidame and Shinde 2012). Most of the studies on water bodies in Karnataka are mainly concentrated on larger reservoirs with more emphasis on the zooplankton diversity, trophic status and assessment of pollution status.

Patil (1982) worked extensively on ecological factors of freshwater zooplankton in several tanks in and around Dharwad. Kudari et al. (2006) and Kudari and Kanamadi (2008) have worked on some selected lentic habitats of Dharwad, Haveri and Uttara Kannada districts. Water quality assessment of Almatti Reservoir of Bijapur was conducted by Hulyal and Kaliwal (2008). Rajashekhar et al. (2009)