

Native and Non-Native Fish Diversity and Density of Southern Western Ghats of India

K. Manikandan and M. Muralidharan

Sri Paramakalyani Canter for Environmental Science,
Manonmanium Sundranar University, Alwarkurichi, Tirunelveli Dist, Tamilandu, India

Abstract: A systematic, updated checklist of freshwater fish species of the various freshwater sites in the southern Western Ghats of Tamil Nadu, India is provided with notes on occurrence, status and ecology of endemic and threatened species. Invasive species enter in the ecosystem by human activity. The freshwater fish determined the water quality. The checklist incorporates information from a review of taxonomic, exploratory and ecological literature concerning the area. A total of 20 fish species have been reported from the landscape. The diversity of Dominant species is *Oreochromis mossambica* this species evaluate the many number have been detected in the study area. Other fishes *Puntis filamentosus* was second place of the fish diversity. Normally one or two species detected the other species.

Key words: Non Native Fishes • Species Abundance • Western Ghats

INTRODUCTION

The 21st century is a 'time of crisis' for freshwater ecosystems and their resources. A multitude of stressors, including urbanization and associated habitat alteration and loss, alien invasive species, overharvest, pollution and climate change, have resulted in freshwater ecosystems and freshwater fish becoming one of the most threatened ecosystems and taxa on Earth [1]. Hence the freshwater environment have varied faunal community and composition and are interrelated each other, among this fishes are well known species and it serves food source, in the form of rich protein. Further, the fishes are the top of the food chain and can serve as indicator of balanced environment [2], also environmental quality and anthropogenic stress in aquatic ecosystem [3]. There is a global concern about the status of the bio resources in which human life depends and their loss affects food security, vulnerability to natural disasters, energy security, etc... Fish account for the highest species diversity among all vertebrates and they live in almost all conceivable aquatic habitats [4]. The environmentally sustainable use of fish resources is central to fisheries management, given the long-term importance of this sector in terms of nutrition and employment. But today's

major concern relates to the unsustainable levels of exploiting fishes with such practices that lead to the depletion of fish stocks, disruption of ecological equilibrium and reduction in diversity, [5]. The present investigation focused on freshwater fish faunal diversity and Species richness in many freshwater sites originated in Southern Western Ghats of India.

MATERIALS AND METHODS

Study Area: The southern Western Ghats, lying between 8° and 11°N, is an important ecological subunit of the Western Ghats global biodiversity hotspot in India [6]. The region is dominated by moist forests and harbors higher levels of biodiversity and endemism than the rest of the Western Ghats [7]. The southern Western Ghats is biologically and topographically more diverse than the rest of the Western Ghats. The wide variation in rainfall together with the region's complex geography produces a diversity of vegetation types. Tropical dry thorn and dry deciduous forests occur in the low-lying rain shadow tracts on the eastern flanks. Moist forests including tropical moist deciduous and wet evergreen forests dominate up to about 1,500 m on the windward side [8].

Fishes were collected different selected localities in southern Western Ghats of India with the help of fisherman by using various type of nets namely gill nets, Cats nets and dragnets. The collected fishes were preserved with 10% formalin solution, labeled and samples were brought to laboratory. Identification of fishes was based on taxonomical keys for fishes of Indian subcontinent [9, 10].

RESULTS

The present fish faunal investigation reveals 20 fish species belonging to 16 genera, 8 families were identified from the different sites of study area in Southern western Ghats. Family Cyprinidae 13 species, it shows high species richness throughout the study period 63% of species abundant in this family followed by Cichlidae with three species and 15% of species abundance, Ambassidae, two species, 9% of species abundance and Heteropneustidae, Bagridae, Anguilidae each have one species, 4% and 5% of less species abundance among the above families referred Figure 1. The most of the species present in the family was cyprinids as followed by Cichlidae was having minimum level and Ambassidae the low level of diversity of species is Heteropneustidae, Bagridae, Anguilidae. The diversity of Dominant species is *Oreochromis mossambica* this species evaluate the many number have been detected in the study area. Other fishes *Puntis filamentosus* was second place of the fish diversity. Normally one or two species detected the other species Table 1. The diversity based on the rainy season and maintains the fresh water ecosystem and other properties. *Oreochromis mossambica* species density developed in rainy season at March Month because the species is vigorous breeder.

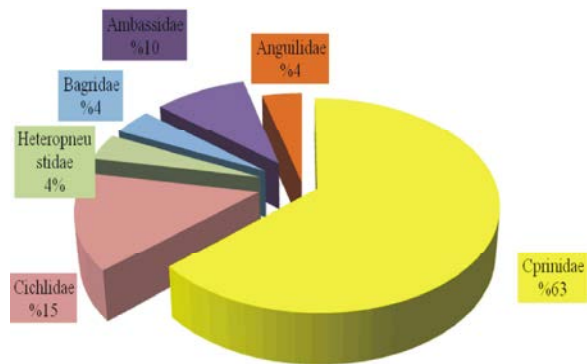


Fig. 1: The total Species Abundance of Fish Population

Table 1: Fish diversity in different site and Total Species

S.No.	Family	Species	Abundance of Species in %
1	Cprinidae	<i>Catla catla</i>	61.90
2		<i>Labio rohita</i>	
3		<i>Cirrhinus mrigala</i>	
4		<i>Puntis filamentosus</i>	
5		<i>Puntis tamirabarani</i>	
6		<i>Garra mullya</i>	
7		<i>Puntius sarana subnasutus</i>	
8		<i>Rosborada niconius</i>	
9		<i>Cyprinus carpio</i>	
10		<i>Puntius melanampyx</i>	
11		<i>Danio aequipinnatus</i>	
12		<i>Puntius exclamatio</i>	
13		<i>Lepidocephalus thermalis</i>	
14	Cichlidae	<i>Etilapia suratisensis</i>	14.28
15		<i>Oreochromis mossambica</i>	
16		<i>Etilapia aculatus</i>	
17	Heteropneustidae	<i>Heteropneustes fossilis</i>	4
18	Bagridae	<i>Mystus keletius</i>	4
19	Ambassidae	<i>Chanda nama</i>	9.52
20		<i>Pseudambas sisranga</i>	
21	Anguilidae	<i>Anguilla Anguilla</i>	4

DISCUSSION

The present paper provides an updated checklist with the latest taxonomic revisions and range extensions for many freshwater basins of the southern Western Ghats of India. Species Diversity and Species Abundance has been recorded [11]. The present study revealed that the physical habitat variables play key role in the distribution of fishes in River Betwa and the habitat alteration and fragmentation brought about significantly to the endangerment of freshwater fish fauna and habitat degradations. Fish communities in riverine system typically follow a pattern of increasing species richness, diversity and abundance from upstream to downstream [12]. However, the current pattern of species richness, diversity and abundance of fishes contrasts sharply with the typical pattern. Species diversity, species richness both were lowered in the lower area in this study compared with the upper area [13]. The present study is investigation of fish diversity and species richness in particular ecosystem. The diversity of fish fauna based on the environmental condition. Further research to compare various predictive models applied to freshwater fishes is warranted. The fish combined the Native and Non-Native fishes has present in the ecosystem.

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