

## Ichthyofauna and Population Status at Indus River Downstream, Sindh-Pakistan

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**Abstract :** The Indus River is one of the longest important rivers of the world in Asia that flows southward through Pakistan, merges into the Arabian Sea near the port city of Karachi in Sindh Province, and forms the Indus Delta. Fish are an important resource for humans worldwide, especially as food. In fish, healthy nutrients are present which are not found in any other meat source because it has a huge quantity of omega-3 fatty acids, which are very essential for the human body. Ichthyologic surveys were conducted to explore the diversity of freshwater fishes, distribution, abundance and current status of the fishes at different spatial scale of the downstream, Indus River. Total eight stations were selected namely Railo Miyan (RM), Karokho (Kk), Khanpur (Kp), Mullakatiyar (Mk), Wasi Malook Shah (WMS), Branch Morie (BM), Sujawal (Sj) and Jangseer (JS). The study was carried in the period of January 2016 to December 2019 to identify River and biodiversity threats and to suggest recommendations for conservation. The data were analysed by different population diversity index. Altogether, 124 species were recorded belonging to 12 Orders and 43 Families from the downstream of Indus River. Among 124 species, 29% belong to high commercial value and 35% were trash fishes. 31% of fishes were identified as marine/estuarine origin (migratory) and 05% were exotic fish species. Perciformes is the most predominated order, contributing to 41% of families. Among 43 families, the family Cyprinidae was the richest family from all localities of downstream, represented by 24% of fish species demonstrating a significant dominance in the number of species. A significant difference was observed for species abundance in between all sites, the maximum abundance species were found at first location RM having 115 species and minimum observed at the last station JS 56 genera. In the recorded Ichthyofauna, seven groups were found according to the International Union for Conservation of Nature status (IUCN), where a high species ratio was collected, in Least Concern (LC) having 94 species, 11 were found as not evaluated (NE), whereas 8 was identified as near threatened (NT), 1 was recorded as critically endangered (CR), 11 were collected as data deficient (DD), and while 8 was observed as vulnerable (VU) and 3 endangered (EN) species. Different diversity index has been used extensively in environmental studies to estimate the species richness and abundance of ecosystems outputs of their wellness; a positive environment (biodiversity rich) with species at RM had an environmental wellness and biodiversity levels of 4.566% while a negative control environment (biodiversity poor) on last station JS had an environmental wellness and biodiversity levels of 3.931%. The status of fish biodiversity and river has been found under serious threat. Due to the lower diversity of fishes, it became not only venerable for fish but also risky for fishermen. Necessary steps are recommended to protect the biodiversity by conducting further conservative research in this area.

**Keywords :** ichthyofaunal biodiversity, threatened species, diversity index, Indus River downstream

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