

Short communication

Fish fauna of Wular Wetland (Ramsar site in Kashmir Himalayas, India)

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Abstract: Wular wetland, a Ramsar Site in Kashmir Himalayas supports rich fishery of native snow trouts and hereby we report the fish fauna of this wetland. Also two exotic species are reported from this site for the first time. This wetland is threatened by point and non- point sources of pollution and also disturbances in the catchment areas with deforestation.

Keywords: Ichthyofauna, Fish diversity, Anthropogenic activities, Threats.

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Introduction

Documentation the fish diversity in aquatic systems is very important for conservation options. Wetland ecosystems are deteriorating in recent times due to pollutants containing heavy metals and this forms a major threat to the fish fauna and fisheries. Likewise, the discharge of point source of pollution to the Wular Lake and other are deteriorating its condition which needs to be restored (Ali 2004). The Wular Lake plays a vital role in maintaining the fish stock in Jhelum River. Jhelum River was once dominated by endemic *Schizothorax* spp. before stocking of exotic *Cyprinus carpio* (Common carp) in Dal lake in 1956 (Qureshi 2006).

Materials and Methods

Study Area: The Wular wetland is located in rural area in the north-west region about 50 km from Srinagar city, in the district of Bandipora, Jammu and Kashmir. It lies in the flood-plains of Jhelum River (34°16′-34°20′N lat. and 74°35′-74°44′E long.) at an altitude of 1580m above msl. Wular Lake is one of the largest freshwater lakes in Asia. It plays a significant role in the hydrological functions of the

Kashmir Valley by acting as a huge absorption basin for the annual flood waters. This was included as a wetland of national importance in 1986 by the Ministry of Environment and Forests, Government of India and subsequently this became one of the 23 Indian wetlands designated as a wetland of International importance in 1990 by the Ramsar Convention (IUCN-1971). The Jhelum empties into Wular Lake at Banyari Bandipora and the river outflows at Sopore (Baramulla).

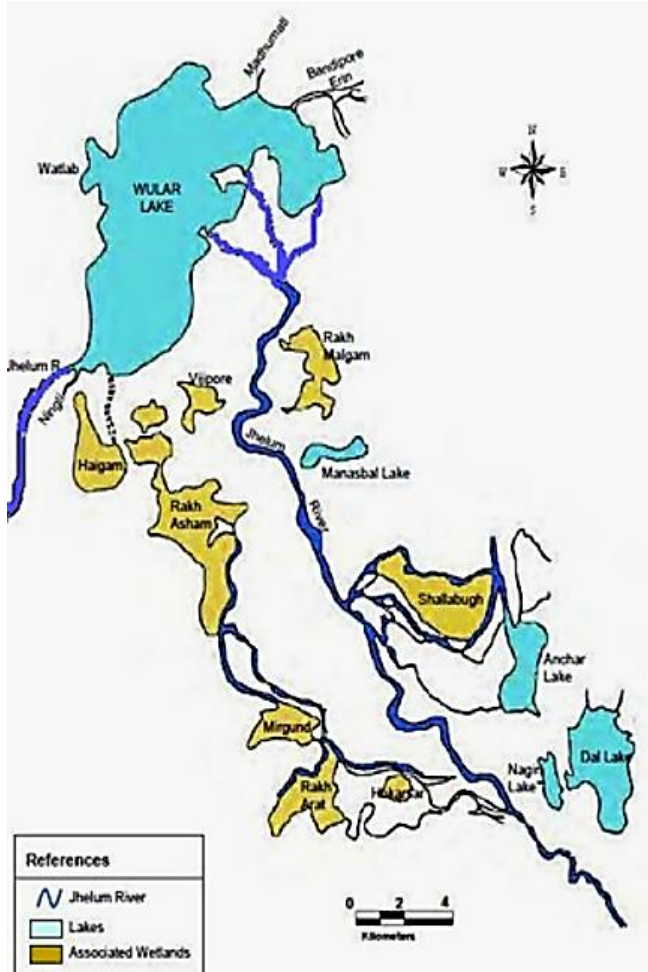
Fish collection: Fish samples were collected on monthly basis using standard fishing gears like caste net, bag net, long net and gill net of different mesh sizes. The samples were collected from different fish landing centers of the Wular Lake like, Watlab, Laherwalpora, Aishtingo, Lankreshipora and Jamia Sopore from June-December, 2014. Collected samples were immediately preserved in 10% formalin.

Results and Discussion

A total of 12 species were recorded from this wetland which includes *Carassius carassius*, *C. carpio* var. *communis*, *Cyprinus carpio* var. *specularis*,

Table 1. Species list and IUCN status of fishes from Wular wetland.

S. No.	Species	IUCN Category	S. No.	Species	IUCN Category
1.	<i>Schizothorax labiatus</i>	EN	7	<i>Schizothorax esocinus</i>	LRnt
2.	<i>Cyprinus carpio</i> var. <i>communis</i>	VU	8	<i>Schizothorax micropogon</i>	LRnt
3.	<i>Cyprinus carpio</i> var. <i>specularis</i>	VU	9	<i>Ctenopharyngodon idella</i>	LRnt
4.	<i>Schizothorax richardsonii</i>	VU	10	<i>Triplophysa marmorata</i>	LRnt
5.	<i>Schizothorax niger</i>	VU	11	<i>Carassius carassius</i>	LRnt
6.	<i>Schizothorax curvifrons</i>	VU	12	<i>Crossocheilus latius</i>	DD

**Fig.1.** Map showing Wular wetland.

Ctenopharyngodon idella, *Schizothorax richardsonii*, *S. niger*, *S. esocinus*, *S. micropogon*, *S. labiatus*, *S. curvifrons*, *Gonorynchus diplocheilus* and *Triplophysa marmorata* (Table 1). Two species such as *C. carassius* and *C. idella*, have been reported first time from Wular wetland. Khan and Ali (2013) reported six fish species *S. curvifrons*, *S. esocinus*, *S. plagiostomus*, *S. labiatus*, *S. niger* and *C. carpio*

reported from the Jhelum River.

Out of 10 native species reported from Wular wetland, *S. labiatus* is under endangered category (EN). Kullander et al. (1999) reported fourteen native and four introduced species from Kashmir Valley which includes five fish species of *Schizothorax*, four species were from river and one (*S. niger*) is from lakes. Yousuf et al. (2006) reported 13 species (*Schizothorax plagiostomus*, *S. labiatus*, *S. esocinus*, *S. curvifrons*, *S. niger*, *Gambusia affinis*, *Triplophysa* spp., *G. diplochilus*, *Glyptothorax kashmirensis*, *Puntius conchonius*, *Bangana diplostoma*, *C. carpio communis*, *C. carpio specularis* and *C. carassius* from Jhelum River.

The various anthropogenic pressures along the catchment area have adversely affected the fish density in the lentic and lotic water systems of Kashmir (Khan 2004). The various anthropogenic threats have been observed during the study period like deforestation in catchment areas, the non-point pollution from agriculture field with insecticides, pesticides, weedicides and chemical fertilizers is a major concern to this wetland. Khan (2004) stated that the anthropogenic pressure along the catchments has adversely affected the fish density in the lentic and lotic water ways of Kashmir. Unsustainable fishing activities and sewage dumping into the lake is a major threat to fish diversity (Ahmad et al. 2012). Wular wetland (Ramsar site) is a high altitude cold water body support rich fishery by native snow trouts though the fish fauna is under threat by the introduction of exotic species.

It is noted that during the present study the

wetland receives domestic sewage from adjoining villages and cities and the introduction of two exotic fish species have also been established well into this wetland posing a major threat to its native fish fauna.

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یافته علمی کوتاه

فون ماهیان تالاب ولار (سایت رامسر، ناحیه کشمیر هیمالیا، هندوستان)

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چکیده: تالاب ولار یکی از تالاب‌های ثبت شده در لیست کنوانسیون رامسر که در ناحیه کشمیر هیمالیا، هندوستان واقع شده است دارای تنوع بالایی از ماهیان بومی انجک می‌باشد. در این مقاله فون ماهیان این تالاب از جمله حضور دو گونه بیگانه (برای اولین بار) گزارش می‌گردد. این تالاب به‌وسیله منابع آلوده کننده محلی و غیر محلی، تعرض‌های مختلف در حوضه آبریز و جنگل زدایی مورد تهدید قرار گرفته است. کلمات کلیدی: فون ماهیان، تنوع ماهی، فعالیت‌های انسانی، تهدیدها.