

Research Paper

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Assessment of distribution and ethnocultural uses of the Sol (*Channa marulius*) in Punjab, Pakistan

Noor Muhammad^{1*}, Abdul Majid Khan², Muhammad Umair^{3,4}, Qazi Adnan Ahmad⁵, Muhammad Yaqoob², Sana Ashraf⁶, Qaisar Rahman⁷ and Muhammad Farooq⁸

1. Department of Fisheries and Aquaculture, Government of Punjab Lahore-Pakistan
2. Department of Zoology, University of the Punjab, Lahore-Pakistan
3. Department of Plant Sciences, Quaid-i-Azam University, Islamabad-Pakistan
4. School of Agriculture and biology and Research Center for Low-Carbon Agriculture Shanghai Jiao Tong University, Shanghai-China
5. Department of Zoology, Government College University, Faisalabad-Pakistan
6. Department of Zoology, University Of Lahore, Sargodha-Pakistan
7. Department of Zoology, Arid University, Rawalpindi –Pakistan
8. Department of Wildlife and Ecology, University of Veterinary and Animal Sciences, Lahore-Pakistan

*Corresponding Author: email.noor@gmail.com

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ABSTRACT

Introduction: Sol is distributed throughout the subcontinent; occur in standing or sluggish water in swamps, canals, lakes and deep pools in rivers. Live in waters with aquatic submerged vegetation. *Channa marulius* is carnivorous fish. The main aim of the study is to assess the distribution of sol and interaction with human in Punjab.

Materials and Methods: Data were collected by using direct (including dip net, cast net and hand nets) and indirect methods (questionnaire from fish anglers and pictures). Duration of research was January 2016 to December 2016.

Results: During the study noted that highest Relative abundance of this species was recorded from the head Qadirabad (0.224137931). During the research noted that this species meat is used orally to treat cold and enhance power; brain pieces used to increase memory; also used as food and trade.

Conclusion: It is concluded that the Sol is present in all rivers of Punjab and people of the area use this species for medicine, trade and food.

Key words: Head, Barrage, River, Trade, Freshwater.

INTRODUCTION

Asiatic continent affords large part for nesting as well as growth of different types of fish (Kottelat and Whitten, 1996; Dudgeon, 2002). This area having high diversity and density of marine fishes (22907 species) and freshwater fishes (10036 species) by Froese and Pauly (2017b); out of these, Froese and Pauly (2017b) recorded 719 species of marine-water and Rafique and Khan (2012) reported 193 species of freshwater fishes in Pakistan. *Channa marulius*, is a vital fish species local to Indo-Pakistan, and has a commercial importance (Bhatti, 2012).

Sol is distributed throughout the subcontinent from the Thailand to the Indus River. Adults occur in standing or sluggish water in swamps, canals, lakes (Rainboth, 1996) and deep pools in rivers (Roberts, 1993); well adapted in low dissolved oxygen (Bhatti, 2012). Live in waters with aquatic submerged vegetation (Rainboth, 1996). They enter flooded forest (Roberts, 1993). *C. marulius* is Carnivorous and feed on tadpoles, frogs, fish, snakes, earthworms and insects, water birds and rodents. Males in this species are territorial (Chaudhry, 2010; Froese and Pauly, 2017a).

This species builds floating nest of leaves and weeds; having orange-yellow eggs. Eggs hatch time is 36-48 hours and fry stay in the nest for ten days after hatching. Parents (*C. marulius*) guards the fry for a month (Chaudhry, 2010; Froese and Pauly, 2017a).

Many species of wild animals are used for the traditional medicines (Altaf *et al.*, 2017), potentials drugs and pharmaceutical industries; there is vital and urgent requirement to observe cultural, social, ecological, and tradition medicine associated with wild fauna usage. This consists of a full record of the wild species used for the socio-cultural context and traditional medicinal purposes related with their consumption (Alves and Rosa, 2007; Alonso-Castro *et al.*,

2011; Alves *et al.*, 2012; Arshad *et al.*, 2014). The main aim of the study is to assess the distribution of sol and interaction with human in Punjab.

MATERIALS AND METHODS

Study Area: Data were collected from the selected sites of rivers of the Punjab i.e. Rasul Barrage, Jehlum Bridge, Head Marala, Head Qadirabad, Head Khanki, Head Baloki, Ravi bridge and Head Islam (Figure 1).

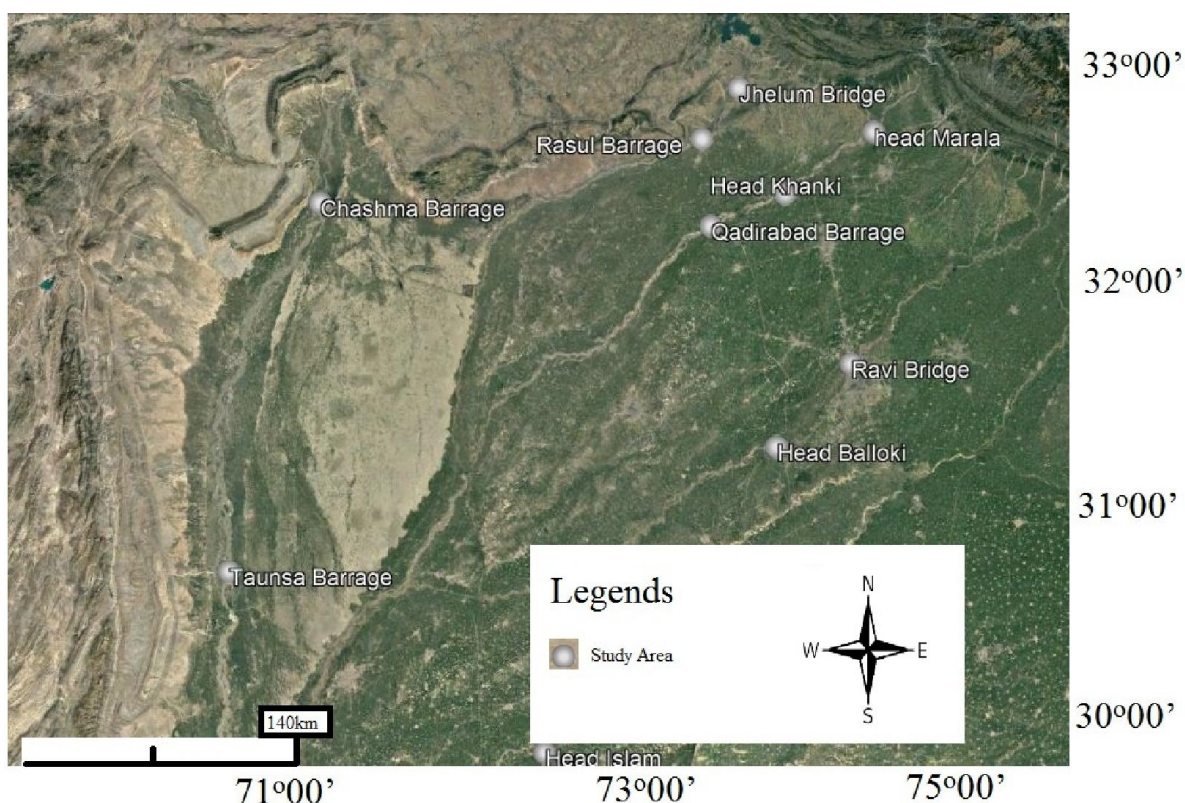


Figure 1: Selected sites of river of the Punjab, Pakistan.

Sample Collection: Information about fish species was collected by using direct and indirect methods. Direct methods including dip net, cast net and hand nets etc. and indirect methods

including questionnaire from fish anglers and pictures are used during collection. Duration of research was January 2010 to December 2016.

Ethno-medicinal data: The data collected through questionnaire (n=100) about the medicinal uses of the fishes from the inhabitants of the selected sites of the Punjab.

RESULTS AND DISCUSSION

During the study noted that highest Relative abundance of this species was recorded from the head Qadirabad (R.A. = 0.224137931) followed by head Marala (R.A. = 0.206896552) head Islam (0.172413793), Taunsa barrage (0.120689655), Chashma barrage (0.086206897), head Baloki (0.051724138), Rasul Barrage (R.A. = 0.034482759), Jehlum Bridge (R.A. = 0.034482759), Head Khanki (R.A. = 0.034482759) and Ravi bridge (R.A. = 0.034482759) as shown in table 1. Sol is also recorded by Altaf *et al.* (2011) from head Qadirabad and Altaf *et al.* (2015) from river Chenab; while Hussain *et al.* (2015) documented sol from the river Ravi.

Table 1: Distribution of Sol in the Punjab, Pakistan.

Study area	Relative Abundance
Rasul Barrage	0.034482759
Jehlum Bridge	0.034482759
Head Marala	0.206896552
Head Qadirabad	0.224137931
Head Khanki	0.034482759
Head Baloki	0.051724138
Ravi bridge	0.034482759
Head Islam	0.172413793
Chashma Barrage	0.086206897
Taunsa Barrage	0.120689655

During the research noted that this species meat is used orally to treat cold and enhance power; pieces of brain used to increase memory; also used as food and trade as shown in Table 2.

Table 2: Cultural uses of Sol in the Punjab, Pakistan.

Medicinal uses	Meat is used orally to treat cold and enhance power; pieces of brain used to enhance memory.
Food	This species is used as food in local area.
Trade	This species is captured from the natural reservoir and sold to all parts of Pakistan.

Conclusion: The Sol is present in all rivers of Punjab and also used for medicine, trade as well as food.

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Availability of data: Authors have included all collected data in research article that were collected during the field survey.

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