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First record of the rohu, *Labeo rohita* (Hamilton, 1822) (Cyprinidae) from Karun River, Tigris River drainage, Iran

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Abstract

Fishes are widely introduced and translocated aquatics due to anthropological activities. The present study reports first record of the rohu, *Labeo rohita* (Hamilton, 1822) in Iran. Five specimens of *L. rohita* were collected from the Karun River, Tigris River drainage, near Shushtar city, Khuzestan Province, Iran. This species probably escaped from rearing farms around the Karun River due to careless management. Therefore, an effective management strategy required to minimize their negative impacts.

Keywords: Indian carp, Aquaculture, Shushtar, Exotic.
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Introduction

Iran harbors a great diversity of freshwater fishes with 297 reported species in 109 genera, 30 families and 24 orders distributing in 19 endorheic and exorheic basins (Esmaeili et al. 2018). 29 exotic fish species have been introduced in different Iranian inland waters and some of them are well-established (Mousavi-Sabet and Eagderi 2014, 2016; Esmaeili et al. 2014, 2018; Radkhah et al. 2016; Eagderi et al. 2018). Aquaculture, sport fishing, control of malaria, research and accidental introductions are main reasons for these introductions (Coad 1996; Esmaeili et al. 2014).

Labeo rohita is the most important among the three Indian major carp species used in carp polyculture systems. This species can be distinguished by having a subterminal mouth with thick lips and body tapering posteriorly (Talwar and Jhingran 1991). This Indo-Gangetic riverine species is the natural inhabitant of the riverine system of northern and central India, and the rivers of Bangladesh, Pakistan, Myanmar and Nepal and also introduced to 13 other countries (FAO 2019; Fishbase 2019). The fingerlings of *L. rohita* along with catla (*Catla catla*) and mrigal (*Cirrhinus mrigala*) were imported from India for aquaculture purpose to the Khuzestan Province of Iran by the Iranian Fisheries Science and Research Institute (Mortazavizadeh et al. 2013). Based on our recent survey, *L. rohita* was collected from the Karun River, Tigris river drainage. Therefore, this study is aimed to report the first record of *L. rohita* from Iranian inland water.

Material and Methods

A total of five specimens of *L. rohita* were purchased on site from local fishermen operating in Karun River (32°01'58.7"N 48°49'21.9"E), Khuzestan Province, Iran, on 10 February 2018 (Fig. 1). Fish were caught using electrofishing. The collected specimens were preserved in 10% buffered formaldehyde and transferred to laboratory for further study. The specimens were identified based on Talwar and Jhingran (1991) and Fishbase (2019).

Results and Discussion

This study is the first record of *L. rohita* from a natural freshwater body of Iran. This species probably escaped from rearing farms around the Karun River due to careless management. Introduction of exotic freshwater fishes is common in aquaculture worldwide treating native biodiversity (Muralidharan 2017). Because, the popularity and admiration gained by an exotic species is greater than the knowledge required to realize the long-term impacts

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Figure1. Lateral view of the *Labeo rohita* collected from the Karun River, Tigris River drainage, Iran.

it would cause (Muralidharan 2017).

Labeo rohita is a eurytherm and benthopelagic species, and does not thrive at temperatures below 14°C. It is a fast growing species and attains about 35-45 cm total length and 700-800 g in one year of normal culture conditions. The minimum age at first maturity for both sexes is two years. In nature, spawning occurs in the shallow and marginal areas of flooded rivers. The optimum temperature for spawning is 22-31°C (Ramakrishna et al. 2013; FAO 2019). All these water parameters seem to be available in the Karun River where this species collected (Sabouri et al., 2010), therefore it has potential to establish in this river system. Introductions are always led to risks for the native biota if species is able to integrate itself successfully into the ecosystem (Gozlan et al. 2009, 2010; Esmaeili et al. 2014) as happened regarding *L. rohita* in countries, including Viet Nam, the Philippines, Thailand, Cambodia, Bhutan, Mauritius and Madagascar (Fishbase, 2019).Therefore, an effective management strategy needs to minimize their negative impacts in the Karun River.

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