

THREATENED FISHES OF THE WORLD: *Labeo calbasu* (Hamilton, 1822) (Cypriniformes: Cyprinidae)

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ABSTRACT

Orange-fin labeo *Labeo calbasu* is one of the commercially and nutritionally valuable food fish in Asian countries including Bangladesh, India, Nepal, Pakistan, Thailand and China. Unfortunately, natural populations of this species are decreasing due to over-exploitation and various biological changes to its habitats. This article suggests the steps for the conservation of the remnant isolated population of Indian major carps, *L. calbasu*, in the waters of Asia.

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COMMON NAME

This fish is vernacularly known as Kalbaus in Bangladesh (Rahman et al., 2012), Tummalabeo in Finland, Kalibasus in India, Black rohu in Nepal (Froese and Pauly, 2014) and Calbasu in USA (Robins et al., 1991).

Indian major carps and is in high demand in the market. It is a valuable food fish and also used as game fish in several places of Indian subcontinent (Talwar and Jhingran, 1991; Rahman, 2005; Mishra and Saksena, 2012). Its liver oil contains Vitamin-A (Ghosh et al., 1993). Also, it provides 16.47% of protein and 2.65% of lipid (Ahmed et al., 2012).

CONSERVATION STATUS

Endangered in Bangladesh (IUCN Bangladesh, 2000), least concern in Pakistan (IUCN, 2011), lower risk near threatened in Telangana State and Tamil Nadu (CAMP, 1998), lower risk in Western Ghats, India (Dahanukar et al., 2004).

IMPORTANCE

L. calbasu is a commercially important species among the



Fig 1. *Labeo calbasu*. Photo was taken by the author (Md. Yeamin Hossain) of a specimen from the Ganges River (known as Padma in Bangladesh) on 3 February 2015.

IDENTIFICATION

Dorsal profile is more convex than abdomen. Two pairs of barbels, rostral pair is longer than maxillary pair. Mouth is moderately wide and inferior. Body color is dark-black but the ventral part is light dark. Fin formula: D. 18-20 (2-3/16-17); P₁, 16-17 (2/14-15); P₂, 9 (1/8); A. 7 (1/6); C. 20-22 (4-6/16) (Present study) and D. 3-4/13-16; A. 2-3/5; P₁, 1/16-17; P₂, 1/8 (Talwar and Jhingran, 1991).

DISTRIBUTION

This fish is widely distributed in Asian countries including Bangladesh, India, Myanmar, Nepal, Pakistan, South China and Thailand (Talwar and Jhingran, 1991).

ABUNDANCE

L. calbasu was previously abundant in rivers, streams, lakes, ponds (Vinci and Sugunan, 1981) but currently this population is seriously declining in its natural habitat (IUCN Bangladesh, 2000). In the largest basin, lower part of the Ganges (Padma) River, this fish is very rarely found (Hossain et al., 2012).

HABITAT AND ECOLOGY

L. calbasu mainly inhabits freshwater and brackish water ecosystems including rivers, ponds, lakes, streams, beels, haors, canals, etc. (Riede, 2004). This fish feeds on filamentous algae, diatom, phytoplankton and zooplankton (Arunachalam et al., 2000; Rahman et al., 2008).

REPRODUCTION

Size at first sexual maturity for *L. calbasu* was estimated as 32.80 cm in total length (TL) (Chatterji et al., 1980), while more recently Mishra and Saksena (2012) reported the size at first sexual maturity was 25 cm in TL. Spawning season extends from May to August and fecundity ranges from 312100 to 657600 (Mean \pm SD = 402217 \pm 30661) (Mishra and Saksena, 2012).

THREATS

Reduction of food availability (Rahman et al., 2008), indiscriminate fishing, habitat modification and other ecological changes are the main threats to *L. calbasu* (Rahman et al., 2012; Hossain et al., 2009a; 2015a).

CONSERVATION ACTION

A number of studies on length-weight relationships, ecology, feeding behavior and biology have been conducted (Chatterji et al., 1980; Vinci and Sugunan, 1981; Ahmad and Niazi, 1988; Rahman et al., 2012).

CONSERVATION RECOMMENDATIONS

A survey should be conducted to find out the current abundance, distribution, ecology and the biological conditions of the habitat (Hossain and Alam, 2015; Hossen et al., 2015). Furthermore, suitable sanctuaries should be established in selected areas of rivers, streams, canals, reservoirs, lakes (Hossain and Ohtomi, 2008; Hossain et al., 2009b; 2015b). Fishing practices during spawning season (May to August) should be strictly banned (Hossain, 2014; Hossain et al., 2015c; d). The conservation status of *L. calbasu* should be enhanced through useful habitat preservation and by formulating new legislation concerning the current situation.

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Sažetak

UGROŽENE VRSTE RIBA U SVIJETU: *Labeo calbasu* (Hamilton, 1822) (Cypriniformes: Cyprinidae)

Narančastoperajni labeo, *Labeo calbasu*, je visoko nutritivna vrijedna hrana u azijskim zemljama, uključujući Bangladeš, Indiju, Nepal, Pakistan, Tajland i Kinu. Nažalost, prirodne populacije ove vrste se smanjuju zbog pretjeranog iskorištavanja i raznih bioloških promjena u njihovim staništima. U ovom članku predlažu se koraci za očuvanje ostatka izolirane populacije indijskih velikih šarana, *L. calbasu*, u vodama Azije.

Ključne riječi: *Labeo calbasu*, narančastoperajni labeo, ugrožena vrsta, hrana, Azija

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