

<http://dx.doi.org/10.14798/73.2.814>

CODEN RIBAEG ISSN 1330-061X (print),
1848-0586 (online)

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

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ARTICLE INFO

Received: 20 July 2014

Received in revised form: 26 March 2015

Accepted: 30 March 2015

Available online: 1 April 2015

Keywords:

Labeo bata

Minor carp

Endangered

Conservation

Asia

How to Cite

ABSTRACT

Minor carp *Labeo bata* is an endangered fish species in Bangladesh. This fish is one of the commercially and nutritionally valuable food fish in Asian countries including Bangladesh, India and Pakistan. *L. bata* is an important target species for small scale fishermen in Bangladesh who use a variety of traditional fishing gears. However, natural populations are seriously declining due to loss of habitat, siltation in the river basin, indiscriminate killing of fry and fingerlings, water pollution by industrial and domestic waste, agrochemicals and overexploitation. This paper recommends the sustainable conservation measures of this endangered fish species in Bangladesh and neighboring countries.

Hossen, M. A., Hossain, M. Y., Yahya, K., Pramanik, M. N. A. (2015): Threatened fishes of the world: *Labeo bata* (Hamilton, 1822) (Cypriniformes: Cyprinidae). Croatian Journal of Fisheries, 73, 89-91. DOI: 10.14798/73.2.814

COMMON NAME

Bata in Bangladesh (Rahman, 2005); Bhagan in India (Nath and Dey, 1989); Bata labeo in Nepal (Shrestha, 2008).

CONSERVATION STATUS

Endangered in Bangladesh (IUCN Bangladesh, 2000), least concern (Rema Devi and Ali, 2013), lower risk in Western Ghats and lower risk near threatened in Telangana state, India (CAMP, 1998).

IMPORTANCE

Minor carp *Labeo bata* (Fig. 1) is a freshwater subtropical species which is commonly known as 'Bangon Bata'. This fish is commercially important and target species for commercial small- and large-scale fishers in Bangladesh, India and Pakistan. It is also used by both culture and capture fisheries nowadays. *L. bata* is in great demand in the market because of its high nutritional value and good taste (Bhuiyan, 1964). This fish contains about 15.42% of protein and 3.73% of lipid (Ahmed et al., 2012).

IDENTIFICATION

Body is elongated and dorsal profile more convex than the ventral. Snout slightly projecting beyond mouth. A pair of minute maxillary barbels present and not easily perceptible. Dorsal fin inserted nearer to snout tip. Pelvic and anal fins dark with orange red tips; other fins with fine black dots (Talwar and Jhingran, 1991). Fin formula: D.11 (2/9); P₁, 16 -17; P₂, 9 (1/8); A.7 (2/5) (Rahman, 2005). Scales moderate, lateral line with 37 to 40 scales. Lateral transverse scale-rows 5 or 5.5 between lateral line and pelvic fin base; predorsal scales 10 to 13 (Talwar and Jhingran, 1991).



Fig 1. *Labeo bata* 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.

DISTRIBUTIONS

L. bata is distributed throughout Indian subcontinent including Bangladesh, India, Nepal, Myanmar and also Pakistan (Talwar and Jhingran, 1991; Rema Devi and Ali, 2013).

ABUNDANCE

It is a non-migratory fish and remains in one habitat throughout its life (Mathur, 1973). Earlier, the fish was widely available throughout the rivers, *haors*, *baors*, *beels*, *jheels*, canals and ponds of Bangladesh (Hafizuddin et al., 1989; Rahman, 2005), but has been seriously declining in the main streams (Dahanukar et al., 2004; Rahman et al., 2012).

HABITAT AND ECOLOGY

L. bata is a freshwater fish in Bangladesh. It lives in small rivers, canals, *haors*, *baors*, ponds and ditches. This species is known as the mid-feeder with a habit of a benthopelagic and potamodromous fish. Also, it is a herbivorous column feeder (Rema Devi and Ali, 2013).

REPRODUCTION

Size at first sexual maturity is 14.12 and 14.60 cm in total length for male and female *L. bata*, respectively (Hossen et al., 2014). Spawning season varies from June to October (Rahman, 2005). In an earlier study, spawning season ranged from July to August and average fecundity was 192785 (Siddique et al., 1976).

THREATS

Loss of habitat and overexploitation, indiscriminate killing of fry and fingerlings, pollution, siltation and other ecological changes are local threats to wild populations of *L. bata* (Hossain et al., 2009a; Rahman et al., 2012; Rema Devi and Ali, 2013; Hossen et al., 2014).

CONSERVATION ACTION

Several studies on biology, ecology (Talwar and Jhingran, 1991) breeding performance, growth, survival rate, life-history traits and morphometric relationships have been conducted (Siddique et al., 1976; Naeem et al., 2012; Hossen et al., 2014).

CONSERVATION RECOMMENDATIONS

To protect and conserve this endangered species in natural habitats, stock assessment and population surveys are urgently needed (Hossain, 2014; Hossain et al., 2008; 2015a). Suitable sanctuaries in selected areas of rivers, streams, canals, lakes, floodplains should be established (Hossain and

Alam, 2015; Hossain et al., 2015b). Identification of the factors which are causes of the decline of this species and its habitats and necessary steps should be taken to conserve the preferred habitats of the species (Hossain et al., 2008; 2009b). Avoiding indiscriminate fishing (Hossain et al., 2015c), illegal fishing practices during the spawning season (July to August) should be banned (Ahmed et al., 2007; Hossain et al., 2012; 2015d). Conservation status of this threatened fish should be developed through effective habitat protection and public awareness programs.

ACKNOWLEDGEMENTS

The authors would like to acknowledge (i) IDRSBFRI Project (Serial No. 04; Session: 2013-2014), Shrimp Research Station, Bagerhat, Bangladesh for financial support and (ii) TWAS (GRA No.: 14-028 RG/BIO/AS_I-UNESCO FR: 324028574) for technical support of this research.

Sažetak

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

Bata, *Labeo bata*, je ugrožena vrsta ribe u Bangladešu. Ova vrsta je od komercijalne važnosti te nutritivno vrijedna hrana u azijskim zemljama, uključujući Bangladeš, Indiju i Pakistan. *L. bata* je važna lovna vrsta za male ribare u Bangladešu koji pritom koriste razne tradicionalne ribolovne alate. Međutim, prirodne populacije ozbiljno opadaju zbog gubitka staništa, zamuljenja riječnih korita, neselektivnog ubijanja mladi i mladunaca, onečišćenja voda industrijskim i kućnim otpadom, agrokemikalijama i prekomjernim iskorištavanjem. U radu se preporučuju održive mjere očuvanja ove ugrožene vrste riba u Bangladešu i susjednim zemljama.

Ključne riječi: *Labeo bata*, *bata*, ugrožena vrsta, zaštita, Azija

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