

## THREATENED FISHES OF THE WORLD: *Rhinomugil corsula* (Hamilton, 1822) (Mugiliformes: Mugilidae)

Md. Yeamin Hossain<sup>1\*</sup>, Rafiqul Islam<sup>1</sup>, Khairun Yahya<sup>2</sup>, Md. Mosaddequr Rahman<sup>3</sup>, Md. Alomgir Hossen<sup>1</sup>, S. M. Abu Naser<sup>1</sup>, Raisul Islam Rasel<sup>4</sup>

<sup>1</sup>Department of Fisheries, Faculty of Agriculture, University of Rajshahi, Rajshahi 6205, Bangladesh

<sup>2</sup>School of Biological Sciences and Centre of Excellence for Marine and Coastal Studies, Universiti Sains Malaysia, Penang 11800, Malaysia

<sup>3</sup>Faculty of Fisheries, Kagoshima University, 4-50-20 Shimoarata, Kagoshima 890-0056, Japan

<sup>4</sup>Department of Zoology, Anando Mohan College, National University, Gazipur 1704, Bangladesh

\*Corresponding Author E-mail: yeamin.fish@ru.ac.bd

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### ABSTRACT

Mullet *Rhinomugil corsula* is a threatened fish of the family Mugilidae and used as food fish in Asian countries but its natural populations have declined due to over-exploitation and various ecological changes in its natural habitats leading to an alarming condition and deserving high conservation importance. This paper recommends measures for the conservation of the remnant isolated wild populations of *R. corsula* in Asian countries.

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### COMMON NAME

This fish is commonly known as Mullet and Khorsula in Bangladesh (Rahman, 1989), Corsula mullet in India (Talwar and Jhingran, 1991), Nga-kin in Myanmar (Khin, 1948), Karsul in Nepal (Shrestha, 2008).

species (Rahman et al., 2014). The popularity of this species in aquaculture is due to the high quality of its flesh. It is extensively fished due to its high nutritive and market value (Sultana et al., 2013).

### CONSERVATION STATUS

Least concern (IUCN, 2014); vulnerable in India (Dahanukar et al., 2004).

### IMPORTANCE

*R. corsula* (Fig. 1) is a commercially important species (Froese and Pauly, 2014). It is a high potential ornamental fish



**Fig 1.** *Rhinomugil corsula* 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

Body is sub-cylindrical in anterior region and moderately compressed in posterior. Head is flat in above and compressed at sides. Mouth position is ventral and eye is elevated. Body color is grayish brown on surface. Fin formula: D1. IV; D2. 1/7-8; P1. 15-16; P2. 1/5; A. 3/9 (Rahman, 1989).

## DISTRIBUTION

This fish is widely distributed throughout the Indian subcontinent including Bangladesh, India, Myanmar and Nepal (Talwar and Jhingran, 1991; Froese and Pauly, 2014).

## ABUNDANCE

*R. corsula* was previously abundant in natural water bodies but now it is gradually declining (Kharat et al., 2003; Sultana et al., 2013). It is a rare fish now in the Ganges River, northwestern Bangladesh (Rahman et al., 2012).

## HABITAT AND ECOLOGY

*R. corsula* inhabits rivers and estuaries (Menon, 1999). It is omnivorous and mainly feeds on blue green algae, green algae, unicellular and filamentous algae, diatoms, rotifer, copepods, microscopic organisms, decayed organic matter, etc. (Khan and Patina, 1994).

## REPRODUCTION

Spawning season of this species ranges from May to September (Kumar et al., 2013) and the fecundity varied from 8924 to 82642 (Sultana et al., 2013). Size at first sexual maturity is 9.47 cm total length (TL) for males and 9.44 cm TL for females in the Ganges River, northwestern Bangladesh (Hossain, unpublished data).

## THREATS

*R. corsula* is under threat from various causes including over-exploitation, indiscriminate use of pesticides, pollution, destruction of breeding grounds, construction of dams and uncontrolled introduction of exotic fishes, diseases, siltation and various ecological changes of habitat (Dahanukar et al., 2004; Kharat et al., 2003; Hossain et al., 2009; Rahman et al., 2012; Sultana et al., 2013).

## CONSERVATION ACTION

Several studies on biology, ecology, biometric index, conservation and taxonomy of this species have been conducted (Delahunty and Vlaming, 1980; Rahman et al., 2012; Hossain et al., 2013; Sultana et al., 2013).

## CONSERVATION RECOMMENDATIONS

Further information on life history, populations and threats are necessary (Dahanukar, 2010; Hossain and Alam, 2015). Immediate rehabilitation of *R. corsula* from the vanishing wetlands is of the utmost significance (Rahman et al., 2014; Hossain et al., 2015a). Appropriate breeding technique ought to be developed and fishing practice in the spawning season (May to September) should be stopped (Sultana et al., 2013; Hossain et al., 2015b). Establishment of suitable sanctuaries (Hossain et al., 2008; 2015c), avoiding indiscriminate fishing (Hossain et al., 2015d), construction of fish ladders in dams, *in-situ* conservation, *ex-situ* conservation, avoiding pollution of water bodies, halting siltation and minimizing harvest are suggested (Yadav, 2000; Hossain, 2014; Hossain et al., 2015e).

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## Sažetak

### UGROŽENE VRSTE RIBA U SVIJETU: *Rhinomugil corsula* (Hamilton, 1822) (Mugiliformes: Mugilidae)

Cipal, *Rhinomugil corsula*, je ugrožena vrsta iz porodice Mugilidae i koristi se kao hrana u azijskim zemljama. Prirodne populacije opadaju zbog pretjeranog iskorištavanja i raznih ekoloških promjena u njihovim prirodnim staništima što dovodi do zabrinjavajućeg stanja i zaslužuje veliku važnost u svrhu njihovog očuvanja. U radu se preporučuju mjere zaštite ostatka izoliranih divljih populacija *R. corsula* u azijskim zemljama.

**Cljučne riječi:** Cipal, *Rhinomugil corsula*, osjetljiva vrsta, hrana, Bangladeš

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