

## THREATENED FISHES OF THE WORLD: *Mystus vittatus* (Bloch, 1794) (Siluriformes: Bagridae)

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### ABSTRACT

*Mystus vittatus* (Bloch, 1794), an indigenous small fish of Bangladesh, belongs to the family Bagridae, widely distributed in Asian countries including Bangladesh, India, Pakistan, Sri Lanka, Nepal and Myanmar. However, natural populations are seriously declining due to high fishing pressure, loss of habitats, aquatic pollution, natural disasters, reclamation of wetlands and excessive floodplain siltation and it is categorized as vulnerable species. This paper suggests the measures for the conservation of the remnant isolated population of *M. vittatus* in the waters of Asian countries.

### COMMON NAME

Asian striped catfish in Bangladesh and Striped dwarf catfish in the USA (Froese and Pauly, 2014)

### CONSERVATION STATUS

Vulnerable (Patra et al., 2005)

### IMPORTANCE

*M. vittatus* (Fig 1) is an important component of riverine and brackish water fisheries in Bangladesh (Craig et al., 2004; Hossain et al., 2006). The species is targeted by small-scale fishermen using a variety of traditional fishing gear (Craig et al., 2004; Kibria and Ahmed, 2005). This small indigenous fish species is rich in protein, micronutrients, vitamins and minerals not commonly available in other foods (Ross et al., 2003). It is also an economically important species for the aquarium industry in Bangladesh.

### IDENTIFICATION

The generic name was derived from the Latin *Mystax*, meaning moustache, in reference to its long barbells. It was first used by Scopoli in 1777 making it a very old genus that included many catfishes throughout the world. Afterwards, Bloch (1794) described it as *Silurus vittatus*, later changing



**Fig 1.** *Mystus vittatus*, sample and photo were taken by the author (Md. Yeamin Hossain) from the Ganges River (known as the Padma River in Bangladesh) on 07 June 2014

to *M. vittatus* in the same year. The body of *M. vittatus* is elongate and slightly compressed with maxillary barbells extending beyond the pelvic fins to the end of the anal fin. D 6-7 (1), A 12-13, V 31-37. The fins are glassy with dark tips. The species has large eyes, which are inferior and visible in ventral profile, and a weak dorsal spine finely serrated on its inner edge. The adipose fin is small, inserted much behind rayed dorsal fin though anterior to the anal fin and a narrow dusky spot is often present on the shoulder.

### KEY CHARACTER

Presence of 4-5 pale blue to brown longitudinal stripes on the body and the presence of a narrow dusky spot on the shoulder (humeral spot). The lateral lines are uninterrupted and the species has 5-8 un-branched barbells. Males easily

distinguished from females by the presence of an elongated genital papilla in front of the anal fin.

## DISTRIBUTIONS

*M. vittatus* is widely distributed in Asia, throughout the Indian subcontinent including Bangladesh, India, Pakistan, Sri Lanka, Nepal and probably Myanmar (Froese and Pauly, 2014). The species has also been reported from Malaysia (Mohsin and Ambak, 1983), Laos (Taki, 1974), Bhutan (Rajbanshi and Csavas, 1982), Vietnam (Khoa and Huong, 1993) and Cambodia (Kottelat, 1985). The species has often been confused with other *Mystus* species.

## ABUNDANCE

Previously abundant in the Padma, Jamuna, Brahmaputra and Mathabhanga River of Bangladesh (Hossain et al., 2006) but seriously declining in the main streams.

## HABITAT AND ECOLOGY

*M. vittatus* inhabits standing and running waters, usually among marginal vegetation in lakes and swamps, and irrigation canals with a mud substrate. This species usually inhabits marginal vegetation in lakes and swamps with muddy substrates and feeds on plants, shrimps, insects, mollusks and fish (Bhatt, 1971; Pethiyagoda, 1991). Spawning occurs from the month of April to August (Hossain et al., 2006), scattering eggs in open waters / substratum without nest guarding. Males and females attain sexual maturity at total length of 8.5 cm and 9.0 cm, respectively. However, very small females (7.5 cm TL) with mature gonads have also been reported (Ankamma and Sharma, 1984). Fecundity ranges 3,500-21,000 depending on individual body size (Qasim and Qayyum, 1963).

## THREATS

Populations in streams, channels, lakes are decreasing due to high fishing pressure, loss of habitats, aquatic pollution, natural disasters, reclamation of wetlands and excessive floodplain siltation (Dudgeon, 1992).

## CONSERVATION ACTION

Several studies on ecology and biology of this species have been conducted in Bangladesh. For the protection of isolated existing populations, conservative regulations must be strictly enacted in Bangladesh during the spawning season. The Bangladesh Fisheries Research Institute (BFRI) has conducted experimental trails on artificial breeding and rearing of the species.

## CONSERVATION RECOMMENDATIONS

Population surveys and stock assessment is urgently needed to establish the status of the wild stocks in terms of abundance and distribution, as well as ecological requirements for the successful proliferation of the species. The establishment of suitable sanctuaries in selected areas of streams, channels and lakes is suggested, as well as identification of the causal factors to the decline of the species and necessary measures taken to conserve the preferred habitats (Hossain et al., 2008; 2009). A total ban should be put to destructive fishing practices and law enforcement enhanced during the fishing season. The conservation status of *M. vittatus* should be improved through effective habitat protection and public awareness programs and ranching.

## REMARKS

*M. vittatus* is already established as an important and potential species for aquaculture species for the food and ornamental fish industry due to its high nutritional value and high market prices. A study of all existing populations as well as population dynamic studies is urgently required for the species.

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## Sažetak

### UGROŽENE VRSTE RIBA U SVIJETU: *Mystus vittatus* (Bloch, 1794) (Siluriformes: Bagridae)

Autohtona vrsta, *Mystus vittatus* (Bloch, 1794), pripadnik porodice Bagridae, široke je distribucije u azijskim zemljama, uključujući Bangladeš, Indiju, Pakistan, Šri Lanku, Nepal i Mianmar. Međutim, prirodne populacije ozbiljno opadaju zbog visokog ribolovnog pritiska, gubitka staništa, zagađenja, prirodnih katastrofa, sanacije močvara i prekomjernog poplavnog zamuljivanja pa se stoga nalazi se u kategoriji osjetljive vrste. U članku se predlažu mjere za očuvanje ostatka izolirane populacije *M. vittatus* u vodama azijskih zemalja.

**Ključne riječi:** *Mystus vittatus*, Azijski prugasti som, prugasti patuljasti som, osjetljiva vrsta, Azija

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