

FOUR NEW RECORDS OF DAMSELFISH (POMACENTRIDAE) FROM SAINT MARTIN'S ISLAND, BANGLADESH

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ABSTRACT: Four species of damselfish viz., *Pomacentrus proteus* Allen, 1991; *Pomacentrus similis* Allen, 1991; *Stegastes obreptus* (Whitley, 1948) and *Pomacentrus adelus* Allen, 1991 have been recorded for the first time from the marine water of Bangladesh in the Saint Martin's Island. The species were observed and captured photographs during monthly underwater survey from January to March 2018 on coral associated fishes in the Saint Martin's Island located at the northern Bay of Bengal, Bangladesh.

Key words: The Bay of Bengal, Saint Martin's Island, Damselfish.

INTRODUCTION

The fishes of the family Pomacentridae generally known as damselfish. Pomacentridae is a highly diverse family of reef fishes comprising approximately 416 species of 29 genera and four subfamilies that primarily inhabit tropical and temperate shallow waters around the world, with the majority of species occurring in the Indo-west and central Pacific region (Allen 1991, Helfman *et al.* 1997, Allen 1998, Thresher 1984, Litsios *et al.* 2012, Nelson *et al.* 2016, Froese and Pauly 2019, Fricke *et al.* 2020). Damselfishes generally occurs in tropical reef habitats but very few species are found in fresh and brackish water such as *Neopomacentrus aquadulcis*, *N. taeniurus*, *Pomacentrus taeniometopon*, *Stegastes otophorus* etc. (Kohda 1984, Jones & Andrew 1990, Jones 1992, Jenkins and Allen 2002). Some damselfish lives on rocky areas or sea grass beds but most of the damselfishes occurs into the shallow water between the depth of 2 and 15 meter (Thresher 1984, Bohlke and Chaplin 1994, Helfman *et al.* 1997, Hoese and Moore 1998, Allen 1998). These fishes usually are less than 15 centimeters whereas some of the species reach the maximum length of 35 cm (Allen 2001, Froese and Pauly 2019). Damselfish plays a role to modify and influence algae, mesoin vertebrates and benthic communities, and make social structure of other herbivores fishes (Lobel 1980, Montgomery 1980a, Sammarco 1983, Hixon and Brostoff 1983, Klumpp *et al.* 1987). There are only 22 species of damselfish have been recorded in Bangladesh (Hussain 1970, Tomascik 1997, Rahman *et al.* 2009 and Thompson *et al.* 2010) whereas 52 species were recorded from India, and a total of 138 species of damselfish were reported from Indian Ocean

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(Venkataraman and Raghunathan 2015, Nair and Dinesh Kumar 2018, Froese and Pauly 2019). This paper describes the new record of four damselfish species with their inventory in Bangladesh.

MATERIAL AND METHODS

Underwater observation: The fishes were observed and captured photographs during monthly underwater survey by scuba diving in water depth of about 3–5m from January to March 2018 in the southernmost part (locally called “Chera Dwip”) of the Saint Martin’s Island. The Saint Martin’s Island is located at the southernmost tip of Bangladesh in the northern Bay of Bengal (Coordinates: 20°34’–20°39’ N and 92°18’–92°21’ E) separated from the mainland by a channel that is about 9 km wide (Figure 1). Species were identified based on the morphological features of the photographs of fishes (Figure 2 to 5) followed by the description of Allen *et al.* (2003), Allen (2001), Allen (1991) and Rahman *et al.* (2009).

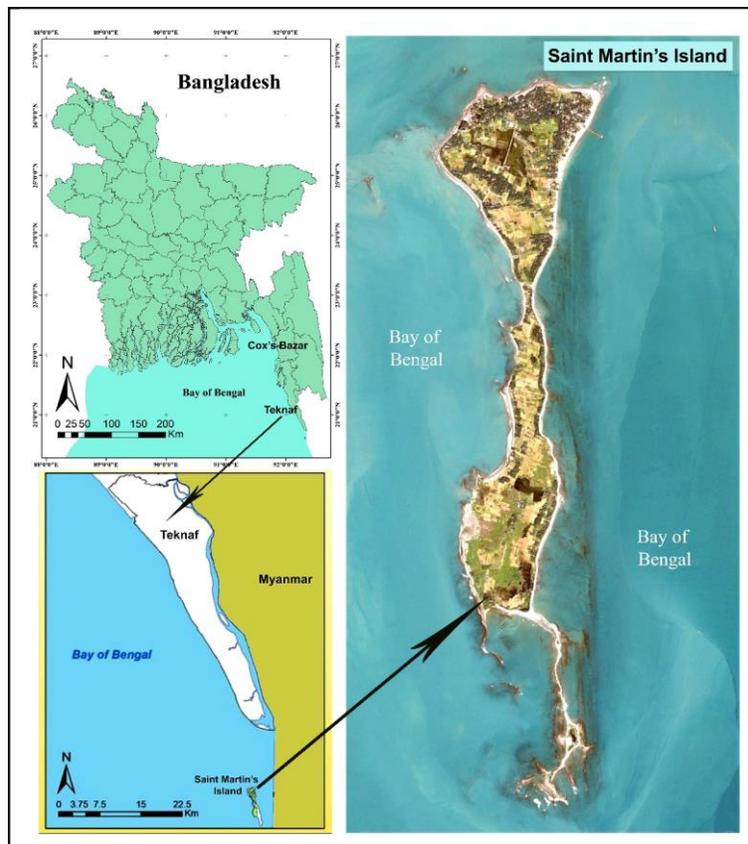


Fig. 1. Map of the Saint Martin’s Island and its location in Bangladesh.

RESULTS AND DISCUSSION

We identified 7 damselfish during our survey from which 4 species viz., *Pomacentrus proteus* Allen, 1991; *Pomacentrus similis* Allen, 1991; *Stegastes obreptus* (Whitley, 1948) and *Pomacentrus adelus* Allen, 1991 are the first distributional records for Bangladesh. Taxonomic account of these 4 new records describe hereunder:

***Pomacentrus proteus* Allen, 1991**

(Colombo damsel)

Material examined: Photographs of the species were taken from Bangladesh: Cox's Bazar, Teknaf, St. Martins Island, Bay of Bengal (Figure 1). An underwater photograph was captured of *P. proteus* around 3 meter of depth in the southernmost of the St. Martin's Island (Fig. 2).



Fig. 2. *Pomacentrus proteus*. Photo captured from Chera Dwip of Saint Martin's Island.

Diagnosis: Color of head blue and back gradating in yellow below, neon blue line markings presents on upper head and blue spotting below. A large neon blue edge black spot present on the middle of the soft dorsal fin

Remarks and Distribution: *Pomacentrus proteus* was identified by its special body coloration. It is distinguished from its closely related species *P. milleri* Taylor, 1964 by its local distribution. *Pomacentrus milleri* is restricted to Eastern Indian Ocean: northern Australia, from Rottnest Island (off Perth) to Arnhem Land, Northern Territory (Allen *et al.*, 2003 and Froese and Pauly 2019). *Pomacentrus*

proteus known to occurs from Srilanka, Myeik Archipelago (questionable), Andaman sea and Thailand (Allen *et al.* 2003, Russel 2016, Howard 2018, GBIF 2019a, Froese and Pauly 2019). However, no valid record found in the Northern Bay of Bengal (Hussain 1970, Tomascik 1997, Allen 2001, Rahman *et al.* 2009, Thompson 2010, Venkataraman and Raghunathan 2015, Russel 2016, Nair and Dinesh Kumar 2018, Howard 2018, GBIF 2019a, Psomadakis *et al.* 2019, Froese and Pauly 2019). Therefore, this report confirm the first distributional record of *Pomacentrus proteus* in the Northern Bay of Bengal.

***Pomacentrus similis* Allen, 1991**

(Similar damsel)

Material examined: Photograph of fish collected from Bangladesh: Cox's Bazar, Teknaf, St. Martins Island, Bay of Bengal (Figure 1). An underwater photograph of *P. similis* was captured around 3m of depth in the southernmost side of the St. Martin's Island (Figure 3).



Fig. 3. *Pomacentrus similis*. Photo taken from Chera Dwip of Saint Martin's Island.

Diagnosis: Body relatively elongate and compressed. Body color deep blue, tail pale yellowish in color, and ventral fins blackish in color. Caudal fin yellowish with dusky posterior margin.

Remarks and Distribution: *Pomacentrus similis* was identified by its coloration. *Pomacentrus similis* known to occurs from the Indian Ocean: Sri Lanka, Andaman Sea, Myeik Archipelago, Thailand and Philippines (Allen *et al.* 2003,

Russel 2016, Howard 2018, GBIF 2019b, Froese and Pauly 2019). However, there is no valid record of this species from the Northern Bay of Bengal, Bangladesh (Hussain 1970, Tomascik 1997, Allen 2001, Rahman *et al.* 2009, Thompson 2010, Venkataraman and Raghunathan 2015, Russel 2016, Nair and Dinesh Kumar 2018, Howard 2018, Psomadakis *et al.* 2019, Froese and Pauly 2019). Therefore, this report confirms the first distributional record of *Pomacentrus similis* species in the Northern Bay of Bengal, Bangladesh.

***Pomacentrus adelus* Allen, 1991**

(Obscure Damsel)

Material examined: Photographs captured from Bangladesh: Cox's Bazar, Teknaf, St. Martins Island, and Bay of Bengal (Figure 1). An underwater photograph was captured during the foraging of *Pomacentrus adelus* around 4m of depth in the southernmost side of the St. Martin's Island (Fig. 4).



Fig. 4: *Pomacentrus adelus*. Photo captured from Chera Dwip of Saint Martin's Island.

Diagnosis: Body ovate; color of head, body and fins blackish brown; ocellated spot with neon blue edge present on posterior part of dorsal fin; some blue lines on head, numerous blue dots on head and body; sky-edged black ocellus on posterior part of dorsal fin (Fig. 4).

Remarks and Distribution: *Pomacentrus adelus* known to occurs from Western Pacific: Myeik Archipelago, Andaman Sea to Vanuatu, Tonga north to the Philippines, south to northern Australia and New Caledonia (Myers 1999,

Randall *et al.* 2003, Russel 2016, Howard 2018, GBIF 2019c, Froese and Pauly 2019). However, there is no valid record of this species from Bangladesh (Hussain 1970, Tomascik 1997, Allen 2001, Rahman *et al.* 2009, Thompson 2010). Therefore, this report confirms the first distributional record of *Pomacentrus adelus* in Bangladesh waters.

***Stegastes obreptus* (Whitley, 1948)**

(Western Gregory)

Material examined: Photographs of the species collected from Bangladesh: Cox's Bazar, Teknaf, St. Martins Island, Bay of Bengal (Figure 1). An underwater photograph was captured during the foraging of *Stegastes obreptus* around 4m of depth in the southernmost side of the St. Martin's island (Figure 5).



Fig. 4: *Stegastes obreptus*. Photo taken from Chera Dwip of Saint Martin's Island.

Diagnosis: Body moderately deep; mouth terminal and slightly oblique. Juvenile body color yellow with narrow dark scale margins; blue spot on head. Large black spot with yellow blue edging on front of dorsal fin.

Remarks and distribution: Western Gregory was distributed in Indo-Pacific: Ryukyu Islands, Indo-Malayan Archipelago, North to south Japan, Western Australia north of Abrolhos Islands; Tropical Indian Ocean to Sri Lanka, Myeik Archipelago and India (Venkataraman and Raghunathan 2015, Russel 2016, Howard 2018, Nair and Dinesh Kumar 2018, GBIF 2019d, Froese and Pauly 2019). However, there is no valid record of this species from Bangladesh (Hussain 1970, Tomascik 1997, Allen 2001, Rahman *et al.* 2009, Thompson 2010). Therefore, this is the first report of *Stegastes obreptus* from Bangladesh waters.

Table 1: An updated checklist of Damselfish of Bangladesh

Species name	References
<i>Abudefduf bengalensis</i>	Rahman <i>et al.</i> 2009
<i>Abudefduf septemfasciatus</i>	Rahman <i>et al.</i> 2009 and Present Study
<i>Abudefduf sexfasciatus</i>	Rahman <i>et al.</i> 2009
<i>Abudefduf sordidus</i>	Tomascik 1997 and Present study
<i>Amphiprion ephippium</i>	
<i>Amphiprion percula</i>	Rahman <i>et al.</i> 2009
<i>Chromis caerulea</i>	
<i>Chrysiptera brownriggii</i>	Tomascik 1997
<i>Coris gaimard</i>	
<i>Cheiloprion labiatus</i>	
<i>Dascyllus marginatus</i>	Rahman <i>et al.</i> 2009
<i>Dischistodus perspicillatus</i>	
<i>Neopomacentrus zysron</i>	Tomascik 1997
<i>Neopomacentrus cyanomos</i>	Tomascik 1997 and Present study
<i>Pomacentrus adelus</i>	Present study
<i>Pomacentrus caeruleus</i>	
<i>Pomacentrus coelestis</i>	Tomascik 1997
<i>Pomacentrus tripunctatus</i>	Rahman <i>et al.</i> 2009 and present study
<i>Pomacentrus similis</i>	Present study
<i>Pomacentrus proteus</i>	Present study
<i>Pomacentrus vaiuli</i>	Tomascik 1997
<i>Premnas biaculeatus</i>	Rahman <i>et al.</i> 2009
<i>Pristotis obtusirostris</i>	
<i>Stegastes fasciolatus</i>	Tomascik 1997
<i>Stegastes lividus</i>	Rahman <i>et al.</i> 2009
<i>Stegastes obreptus</i>	Present study

Damselfish is the most diverse group of reef fishes of Bangladesh. During our entire survey period, we identified seven species of damselfish from Saint Martin's Island, Bangladesh. The Saint Martin's Island is the only Island in Bangladesh that supports coral ecosystem. The unique coral habitat of this island supports a great diversity of marine animals. Among seven identified species, 4 damselfish e.g. *Pomacentrus proteus* Allen, 1991; *Pomacentrus similis* Allen, 1991; *Stegastes obreptus* (Whitley, 1948) and *Pomacentrus adelus* Allen, 1991 have been recorded for the first time from the marine water of Bangladesh in the Saint Martin's Island.

Therefore, previously 22 damselfish were recorded from Bangladeshi water (Hussain 1970, Tomascik 1997, Rahman *et al.* 2009, Thompson 2010, Froese

and Pauly 2019). Sourcing from different valid reports including present study, we have updated the checklist of damselfish of Bangladesh (Table 1) which indicates that 26 species of damselfish have been reported in the country until now. This study indicates the possibility of existence of more species of damselfish in Bangladesh that have been overlooked in past surveys.

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