

## Research Article

**Cite this article:** Anto A, Babu S, Sreeram MP, Ramanathan SK, Fricke R (2024). New geographical records of 15 reef fish species from Lakshadweep, India. *Journal of the Marine Biological Association of the United Kingdom* **104**, e16, 1–9. <https://doi.org/10.1017/S0025315424000055>

Received: 20 September 2023

Revised: 15 November 2023

Accepted: 12 January 2024

### Keywords:




Arabian Sea; coral atolls; fish faunal diversity; Kavaratti Atoll; Laccadive Sea

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# New geographical records of 15 reef fish species from Lakshadweep, India

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## Abstract

In the present study, 15 new records from Kavaratti Atoll are added to the ichthyofaunal diversity of the Lakshadweep Archipelago and six to the Indian fish fauna based on underwater photographs and videos. Fishes were recorded from both lagoon and forereef areas off Kavaratti. The new records include *Cirripectes auritus* (Blackflap blenny), *Cirripectes polyzona* (Barred blenny), *Ecsenius bicolor* (Bicolor blenny), *Glyptoparus delicatulus* (Delicate blenny), *Amblyeleotris wheeleri* (Gorgeous prawn-goby), *Eviota punyit* (Punyit dwarfgoby), *Eviota cf. teresae* (Viridescent dwarfgoby), *Cirrhitichthys falco* (Dwarf hawkfish), *Halichoeres leucoxanthus* (Canarytop wrasse), *Pseudocheilinus evanidus* (Disappearing wrasse), *Coris latifasciata* (Broad banded wrasse), *Pomacentrus xanthocercus* (Yellowtail damsel), *Plectroglyphidodon luteobrunneus* (Indian gregory), *Pomacentrus indicus* (Indian damsel) and *Synodus dermatogenys* (Sand lizardfish). Six species, *G. delicatulus*, *E. cf. teresae*, *E. punyit*, *P. xanthocercus*, *P. evanidus* and *C. latifasciata* represent new records for Indian waters. The genus *Amblyeleotris* is recorded for the first time from Lakshadweep.

## Introduction

The Lakshadweep Archipelago is situated in the Laccadive Sea (eastern part of the Arabian Sea, northwestern Indian Ocean) between 08°00'N and 12°30'N and 71°00'E and 74°00'E, and includes ten inhabited islands, 17 uninhabited islands and five submerged reefs (Sreenath *et al.*, 2015). The archipelago represents India's only atoll-type reef formations (Chandramohan *et al.*, 1993). The reefs of the Lakshadweep Archipelago are known for their clear, oligotrophic waters and great coral and fish diversity (Arthur, 2008). Multiscale assessments of the fish diversity are scarce due to the remoteness of this area. Expeditions that gathered information on the fishes of Lakshadweep started with the Royal Marine Investigator naturalist Alfred W. Alcock in 1890, after which a number of subsequent studies were also conducted in this area. Jones and Kumaran (1980) were the first to do a significant and comprehensive investigation on the reef fishes and published a monumental treatise on the fishes of the archipelago. Later, a detailed work by Murty (2002) documented the ornamental fishes of the island. Unlike other coral reef habitats worldwide, Lakshadweep's reef fish assemblage has been less affected by local fishing, as the primary target of local artisanal fisheries is the pelagic Skipjack tuna (*Katsuwonus pelamis*) (Arthur, 2008; Koya *et al.*, 2019). This has, until very recently, allowed the reef fish populations to remain relatively little disturbed by fisheries.

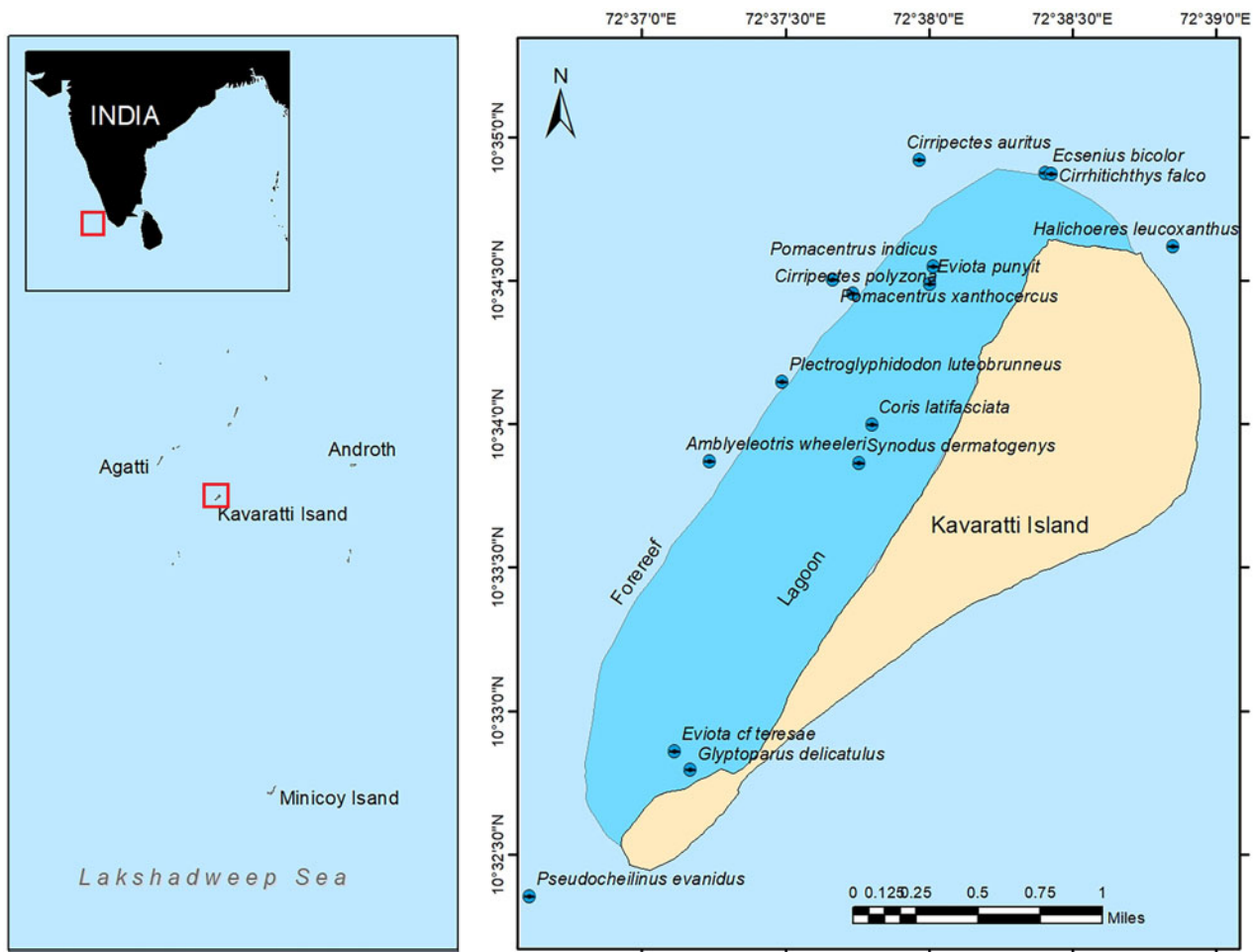
Most past investigations have been conducted using conventional fishing gear and bait-trapping methods. Only a few studies based on the Underwater Visual Census (UVC) were performed at Lakshadweep (Anand and Pillai, 2002, 2004, 2007; Idreesbabu *et al.*, 2014; Rajan *et al.*, 2021; Sandra *et al.*, 2022; Sandra *et al.*, 2023). Therefore, the chances of finding new fish diversity using UVC are high. Rajan *et al.*, in 2021, completed a detailed checklist for the Lakshadweep fish fauna, including 856 species, following which another 12 species were added by Sandra *et al.* (2022), three more by Sreeraj *et al.* (2022) and seven more species by Sandra *et al.* (2023), bringing the total tally to 878 species.

The present study records new distributional records for 15 coral reef fish species from Lakshadweep waters during our survey at Kavaratti Atoll between March and April 2022.

## Material and methods

The study was conducted at Kavaratti Atoll of Lakshadweep. The coral reef fishes were documented using UVC along a 30 m transect, which was applied in conjunction with the Line Intercept Transect (LIT) method (English *et al.*, 1997). Surveys were also carried out in the lagoon and the reef slope areas, with depths ranging from 0.5 to 30 m. Replicates of three measuring tapes 30 m long were placed 10–15 m apart at each randomly selected station. After laying transects, observers waited for 15 min before starting the UVC, allowing the stressed fish to regain normal behaviour. The fish fauna was recorded using GoPro Hero9 and Olympus TG6 cameras, along with the documentation of geographical coordinates (Figure 1). Cryptic fish were observed separately by closely examining the cracks and crevices





**Figure 1.** Map indicating the geographical coordinates of the newly recorded species.

in the substratum, coral formations, rubble or sand at each station. The total lengths of the fish were calculated on the spot, accounting for underwater visual size under or overestimations (Edgar *et al.*, 2004). Based on visual characteristics, comparing them with the original descriptions, fishes were identified at the species level. Allen and Robertson (1994), Allen (2009), Heemstra *et al.* (2022) and Froese and Pauly (2022) were among the publications

and websites used for identification; the actual classification was updated according to Fricke *et al.* (2022); the general distribution follows Fricke *et al.* (2022), revised according to Heemstra *et al.* (2022). Identifications of the species that posed challenges were verified by consulting subject experts.

## Results

During the survey, a total of 15 new fish species were documented (including seven cryptobenthic fish species), all represented within six families, including *Bleniidae*, *Gobiidae*, *Cirrhitidae*, *Labridae*, *Pomacentridae* and *Synodontidae*. Among these findings, *Glyptoparus delicatulus*, *Eviota cf. teresae*, *Eviota punyit*, *Pomacentrus xanthoncercus*, *Pseudocheilinus evanidus* and *Coris latifasciata* represent new records for Indian waters. Notably, the genus *Amblyeleotris* is recorded for the first time in Lakshadweep.

### *Cirripectes auritus* Carlson, 1981

Blackflap blenny  
Family: Blenniidae

Observation details: A female Blackflap blenny *Cirripectes auritus* ~6 cm, TL (Figure 2) was spotted on the northern reef slope of Kavaratti Atoll (10°34'55.3"N, 72°37'58.0"E) on an algal-covered coral boulder. Usually, they occur to a maximum depth of 10 m (Kuitert and Tonozuka, 2001), and our observation was at 13.5 m.

Diagnosis: The observed individual has matching external morphological characters as those described in the original description made by Carlson (1980). The fish has a distinctive black nuchal flap with yellow-coloured cirri on both sides of the nape. The pupil of



**Figure 2.** *Cirripectes auritus*.



Figure 3. *Cirripectes polyzona*.

the eye is black and encircled by a yellow iris. The beginning of the dorsal fin is located a brief distance posterior to the nuchal cirri and roughly aligned with the insertion point of the pelvic fins.

Distribution: Indo-West Pacific: KwaZulu-Natal (South Africa), East Africa, Socotra (Yemen), Comoros and Mascarenes (Mauritius) east to Line Islands (Kiribati), north to Philippines and Taiwan. The species was previously recorded from the Andaman and Nicobar Islands (Rajan *et al.*, 2013).

#### *Cirripectes polyzona* (Bleeker, 1868)

Barred blenny

Family: Blenniidae

Observation details: A juvenile Barred blenny *Cirripectes polyzona* ~2 cm, TL (Figure 3) on the dead algal-infested corals at a depth of 3.2 m (10°34'27.4"N, 72°37'44.2"E).

Diagnosis: This species is characterised by having a dark brown body with small red spots on the cheek and lines on the snout and is also distinguished by a gold iris with a reddish ring around the eye. Juveniles have a dark grey colour above and light grey below with a dark mid-lateral stripe. A white spot is present on the head above the eyes, and a white bar is below the eyes.

Distribution: Indo-Pacific: Gulf of Aden, Kenya to South Africa, Comoros, Seychelles, Mascarenes, Chagos, Maldives and Sri Lanka; elsewhere to Indonesia, southern Japan, Marshall Islands and Australia. This species was previously recorded from the Andaman and Nicobar Islands (Rajan *et al.*, 2013).

#### *Ecsenius bicolor* (Day, 1888)

Bicolor blenny

Family: Blenniidae

Observation details: The three colour morphs of the Bicolor blenny *Ecsenius bicolor* ~5 cm, TL (Figure 4A) were observed on live and dead corals on the fore reef of Kavaratti at depths ranging from 10 to 14 m (10°34'52.7"N, 72°38'24.3"E).

Diagnosis: This species displays three different colour morphs in the Lakshadweep Archipelago; however, all forms have an orangish arched line behind the eye. The prevailing colour variety observed in this highly variable species is characterised by a dark grey anterior body region and a vibrant yellow-orange posterior body region (Figure 4A). The second most common colour morph has a dusky black body with a brownish-green head; nonetheless, the orangish arched line below the eye is visible (Figure 4B). The third colour morph has a dark grey front body with a yellow rear end and a white belly (Figure 4C).

Distribution: Indo-West Pacific: Maldives and Sri Lanka east to the Phoenix Islands (Kiribati) and Samoa, north to Amami Islands (southern Japan), south to northern Australia, northern



Figure 4. (A.) *Ecsenius bicolor* (common variant). (B) *Ecsenius bicolor* (brown variant). (C) *Ecsenius bicolor* (white variant).

New Zealand and the Kermadec Islands. This species has been reported from various locations in India, including the Gulf of Mannar (Joshi *et al.*, 2016) and the Andaman and Nicobar Islands (Rajan *et al.*, 2013).

#### *Glyptoparus delicatulus* Smith, 1959

Delicate blenny

Family: Blenniidae

Observation details: All observed Delicate blenny *Glyptoparus delicatulus* ~4 cm, TL (Figure 5). Individuals were found on the dead and algal-covered areas of living massive *Porites* coral colonies at a depth of 0.6 m in the Kavaratti lagoon (10°32'47.74"N, 72°37'10.16"E). When disturbed, they hide inside the holes made by boring invertebrates or old worm tubes.



Figure 5. *Glyptoparus delicatulus*.

Diagnosis: All individuals have matching external morphological characters as described in the original description made by Smith (1959). The fish have small, straightforward cirri at the eye, a concave vertical snout and a dark spot on either side anterior to the pelvic base. Males observed have a small crest behind the eye. Allen *et al.* (2003) briefly described the species, including details on exterior traits, including white spots all over the body and olive-green patterns behind the opercle and close to the base of the pectoral fin.

Distribution: Indo-Pacific. Indonesia, southern Japan, Mariana Islands, Caroline Islands, New Guinea, Australia, Great Barrier Reef, Vanuatu, Tonga and Tuamotu. This species has not been previously known from India and Sri Lanka though present in Kenya, Mozambique, Reunion, Madagascar, Seychelles, Mauritius and Chagos in the Western Indian Ocean. This is the first record of the species from India.

*Amblyeleotris wheeleri* (Polunin & Lubbock, 1977)  
Gorgeous prawn-goby  
Family: Gobiidae

Observation details: An individual of the Gorgeous prawn-goby *Amblyeleotris wheeleri* ~6.5 cm, TL (Figure 6) on coral rocks on the sandy bottom of the forereef of Kavaratti (10° 33'52.2"N, 72°37'14.1"E) at a depth of 12.8 m.

Diagnosis: The individual matches the external morphological characters described in the original description made by Polunin and Lubbock (1977). The fish is small and elongated with a yellowish-green coloured head and body. Six wine-red bands and a red stripe are found on the body and the anal fin, respectively. The first band is narrow and located over the hind margin of the operculum. A bright red line through the eye can be considered a seventh band. The eyes have a reddish tinge and a golden iris.

Distribution: Red Sea; Indo-West Pacific: KwaZulu-Natal (South Africa), East Africa, Socotra (Yemen), Madagascar, Comoros, Seychelles, Saint Brandon's Shoals, Mascarenes, Maldives and the Chagos Archipelago east to the Marshall Islands and New Ireland (Papua New Guinea), north to Amami Islands and Osumi Islands and Ogasawara Islands (Japan), south to northern Australia. This species has been previously reported from various other regions of India, such as the south-west coast (Zacharia *et al.*, 2008) and the Gulf of Mannar (Joshi *et al.*, 2016).



Figure 6. *Amblyeleotris wheeleri*.

*Eviota punyit* Tornabene, Valdez & Erdmann, 2016  
Punyit dwarfgoby  
Family: Gobiidae

Observation details: A group of Punyit dwarfgobies *Eviota punyit* ~2 cm, TL (Figure 7) on a massive *Porites* boulder at a depth of 1.1 m in the Kavaratti lagoon (10°34'29.4"N, 72° 38'00.3"E).

Diagnosis: The individual matches the external morphological character described in the original description by Tornabene *et al.* (2016). The body is long and slender with a pointed head. A distinctive red lateral stripe is present and extends from the tip of the snout to the end of the caudal peduncle. The lateral line is at its maximum width and brightness on the trunk, positioned explicitly posterior to the pectoral fin and below the first dorsal fin. As one moves towards the posterior region, the stripe gradually narrows and darkens, occasionally exhibiting shades of maroon or brown. Nare tubes are present on the tip of the head. The eyes are reddish with two lateral stripes, a bright white stripe on the upper margin of the pupil, and a yellowish line on the lower side. Compared to gobies with similar marking patterns, this species is confirmed to be *E. punyit* based on the placement of the white posterolateral borders and anterior portion encircling the dark spot on the caudal peduncle. It is also distinguished from the nearly identical *E. sebreei* based on the more reddish lateral stripe and its distribution described by Tornabene *et al.* (2016).

Distribution: Red Sea; Indo-West Pacific: Oman, Seychelles and Comoros east to Ryukyu Islands (Japan) and eastern Indonesia, south to Queensland (Australia).



Figure 7. *Eviota punyit*.



Figure 8. *Eviota cf. teresae*.

*Eviota cf. teresae* Greenfield & Randall, 2016  
Viridescent dwarfgoby  
Family: Gobiidae

Observation details: An individual of Viridescent dwarfgoby *Eviota cf. teresae* ~2 cm, TL (Figure 8) was spotted on live *Porites* sp. in the Kavaratti lagoon (10°32'51.6"N, 72°37'06.8"E) at a depth of 2.5 m.

Diagnosis: The individual generally matches the external morphological characters described in the original description by Greenfield and Randall (2016); however, a recent publication by Erdmann *et al.* (2023) reveals a fifth undescribed species found in Seychelles and Maldives (Indian Ocean) which could probably be the currently recorded species. The observed specimen has a transparent grey hue with red, orange and white pigment patterns overlaying it. The abdomen has three wide red vertical blotches interspersed by thinner yellowish-white bars. There are alternating red and white bars, more wide than tall, internally along the vertebral column. Numerous red and white speckles are found on the body. The observed species differs from *Eviota guttata* by the body patterns as well as the pattern of the eyes. *Eviota guttata* has spoke-like patterns on the eye which is lacking in the observed specimen. *Eviota taeiae* and *Eviota albolineata* have partially connected spots and stripes on the head portion whereas that of the observed species has well-separated spots. A lack of vertically elongated spots on the caudal peduncle distinguishes it from *Eviota distigma* which has been recorded earlier from Lakshadweep.

Distribution: Seychelles and Maldives. This is the first record of this species from Indian waters.

*Cirrhichthys falco* Randall, 1963  
Dwarf hawkfish  
Family: Cirrhitidae

Observation details: An individual of the Dwarf hawkfish *Cirrhichthys falco* ~8 cm, TL (Figure 9), which was seen resting on a live coral patch in the forereef of Kavaratti (10°34'52.4"N, 72°38'25.7"E) at a depth of 10.2 m.

Diagnosis: The individual matches the external morphological characters described in the original description by Randall (1963). The fish has a white-coloured body with three distinguishable broad triangle-shaped bars in the anterior position. The dorsal fin has a reddish top with white cirri. This species closely resembles *Cirrhichthys oxycephalus* but is distinguished by having a pair of reddish bars below the eyes and dark reddish bands on top of the head.



Figure 9. *Cirrhichthys falco*.

Distribution: Indo-West Pacific: Maldives east to Caroline Islands (Micronesia) and Samoa, north to southern Japan, south to New South Wales (Australia) and Lord Howe Island (Australia). This species was previously reported in the Andaman and Nicobar Islands (Rajan *et al.*, 2013).

*Halichoeres leucoxanthus* Randall & Smith, 1982  
Canarytop wrasse  
Family: Labridae

Observation details: A female sub-adult Canarytop wrasse *Halichoeres leucoxanthus* ~7 cm TL (Figure 10) was observed near the coral wall in the north of Kavaratti (10°34'37.2"N, 72°38'51.0"E) at a depth of 25.2 m.

Diagnosis: This wrasse species has a distinguishing yellow body with a white ventral half and three white-margined black spots (ocelli) on the dorsal fins. In males, these spots are not surrounded by the white rim.

Distribution: Indian Ocean: Maldives, Gulf of Mannar (India) and Myanmar east to Christmas Island (Australia) and western Indonesia. This species is reported from various regions of India, including the Gulf of Mannar (Kodeeswaran *et al.*, 2022)

*Pseudocheilinus evanidus* Jordan & Evermann, 1903  
Disappearing wrasse  
Family: Labridae

Observation details: An individual of the Disappearing wrasse *Pseudocheilinus evanidus* ~7 cm TL (Figure 11) was spotted near the rubble in the reef extension at a depth of 17.8 m on the reef slope on the southern side of Kavaratti Atoll (10°32'21.2"N, 72°36'36.5"E).

Diagnosis: This wrasse species is distinguished by a bluish-white streak from the corner of the mouth to the upper portion



Figure 10. *Halichoeres leucoxanthus*.



**Figure 11.** *Pseudocheilinus evanidus*.

of the preopercle, as described in the original description of the species by Jordan and Evermann (1904). The snout is conical, and the body colour ranges from red to orange, with numerous faint, thin, longitudinal horizontal stripes.

Distribution: Red Sea; Indo-West Pacific: KwaZulu-Natal (South Africa), East Africa, Socotra (Yemen), Seychelles, Comoros, Mascarenes, Maldives and Chagos Archipelago east to Midway and Hawaiian Islands (USA), Tuamotu Archipelago and Marquesas Islands (French Polynesia), north to Kagoshima Prefecture (southern Japan), south to Rowley Shoals (Western Australia), Queensland (Australia), New Caledonia and Tonga. This occurrence is the first reported from Indian waters.

#### *Coris latifasciata* Randall, 2013

Broad-banded Wrasse

Family: Labridae

Observation details: An individual of the Broad banded wrasse *Coris latifasciata* ~9 cm TL (Figure 12) near rubbles in the Kavaratti lagoon (10°33'59.9"N, 72°37'48.1"E) at a depth of 2.3 m.

Diagnosis: This wrasse species is characterised by a whitish to pale green body with six dusky orange bars on the upper half of the body, more border than the white interspaces. Middle of each scale is white, mainly on the abdomen. A black ocellus is present in the middle region of the dorsal fin. A yellow spot just behind the eye is observed, which can be followed in the images from the original description by Randall (2013).

Distribution: Indian Ocean: Maldives and Chagos Archipelago.



**Figure 12.** *Coris latifasciata*.



**Figure 13.** *Pomacentrus xanthocercus*.

#### *Pomacentrus xanthocercus* Allen, Erdmann & Pertiwi, 2022

Yellowtail damsel

Family: Pomacentridae

Observation details: A group of adult yellowtail damsels *Pomacentrus xanthocercus* ~8 cm TL (Figure 13) on the outer reef slope of Kavaratti (10°34'30.3"N, 72°37'40.0"E) at a depth of 11.5 m.

Diagnosis: The observed individual has a matching external morphological character as described in the original description by Allen *et al.* (2022). The adult body exhibits bluish-grey colouration, accompanied by well-defined black scale borders that create a network-like pattern. Additionally, the scales on the head have distinct blue dots. A narrow white ring around the pupil is seen in the eye. The caudal fin has a vibrant yellow colouration, with a yellow hue that extends anteriorly across the caudal peduncle.

Distribution: Reported from the Maldives and Sri Lanka. The present record is the first for India and the Lakshadweep Archipelago.

#### *Plectroglyphidodon luteobrunneus* (Smith, 1960)

Indian gregory

Family: Pomacentridae

Observation details: A group of adult and juvenile individuals of the Indian gregory *Plectroglyphidodon luteobrunneus* ~7 cm TL (Figure 14A, B) was observed near a surge-exposed algae-covered rock just outside the Kavaratti lagoon (10°34'09.0"N, 72°37'29.3"E) at a depth of 3.8 m.

Diagnosis: Adults are dark brown, with dark scale margins. Below the eye, a violet streak is present. Pectoral fins are translucent, and a black spot is observed at the base. Juveniles are greyish brown with a blue stripe below the eyes. There is a dark spot at the bottom of the pectoral fin and a yellow-rimmed black spot at the beginning of the dorsal fin, and the caudal fin base is yellow.

Distribution: Red Sea; Indian Ocean: KwaZulu-Natal (South Africa), East Africa, Gulf of Aden, Seychelles, Madagascar, Mascarenes, Chagos Archipelago and Sri Lanka east to the Andaman Sea and Cocos Keeling Islands (Australia). This species was reported from Visakhapatnam, India (Behera *et al.*, 2014), misidentified as *Stegastes fasciolatus* (non Ogilby 1889).

#### *Pomacentrus indicus* Allen, 1991

Indian damsel

Family: Pomacentridae

Observation details: A juvenile and a sub-adult of the Indian damsel *Pomacentrus indicus* ~7 cm TL (Figure 15A, B) was photographed near the *Acropora* spp. in the Kavaratti lagoon at a depth of 1.5 m (10°34'33.1"N, 72°38'00.9"E).



**Figure 14.** (A) *Plectroglyphidodon luteobrunneus* (adult). (B) *Plectroglyphidodon luteobrunneus* (juvenile).

**Diagnosis:** The juvenile (Figure 15B) has a striking orange colour on the head and back of the body, which fades in the sub-adults (Figure 15A) and is almost absent in adults. A blue hue borders a large black spot on the dorsal fin's posterior side.

**Distribution:** Indian Ocean: Seychelles, eastern Mascarenes (Rodrigues), Maldives, Chagos Archipelago and Sri Lanka.

#### *Synodus dermatogenys* Fowler, 1912

Sand lizardfish

Family: Synodontidae

**Observation details:** An individual of the Sand lizardfish *Synodus dermatogenys* ~17 cm TL (Figure 16) was observed near a colony of *Porites cylindrica* in the Kavaratti lagoon at a depth of 1.4 m (10°33'51.9"N, 72°37'45.4"E).

**Diagnosis:** The individual has a matching external morphological character as described in the original description of Fowler (1911). Six darker saddles along the back characterise this species, each faintly bordered in the front and back with a dusky tone. Eight to nine dark diamond-shaped spots, frequently with pale centres on the middle side of the body. This species is also distinguished by the presence of a pale bluish stripe above the lateral line at the level of the eye and a group of six dark spots on the tip of the snout.

**Distribution:** Red Sea; Indo-West Pacific: Eastern Cape and KwaZulu-Natal (South Africa), East Africa, Socotra (Yemen), Seychelles, Comoros, Madagascar, Mascarenes, Maldives and Sri Lanka east to Hawaiian Islands (USA) and Pitcairn Group, south to northern Australia, Lord Howe Island (Australia),



**Figure 15.** (A) *Pomacentrus indicus* (sub adult). (B) *Pomacentrus indicus* (juvenile).

northern New Zealand and Kermadec Islands. This species was reported from the Andaman and Nicobar Islands (Rajan *et al.*, 2013).

#### Discussion

In the Chagos-Lakshadweep atoll reef system, Lakshadweep is one of the lesser explored atoll groups of islands in the Indian Ocean. This region is of great biological importance because of its distance from any significant continental shoreline and its abundance of unique marine niches. Due to many characteristics such as species richness, endemic species and the scarcity of



**Figure 16.** *Synodus dermatogenys*.

habitats, the World Wildlife Fund (WWF) classified this area as a vulnerable maritime priority ecoregion (Olson and Dinerstein, 1998). According to Vivekanandan *et al.* (2009), it is anticipated that the Lakshadweep islands will see frequent instances of severe coral bleaching in the future, rendering them very susceptible as a coral reef system, which can lead to the loss of many species, including the coral reef fishes. Therefore, it is imperative to meticulously record the biodiversity present in this particular geographical area in order to enhance public consciousness regarding the significance of its preservation. The primary aim of the current study is to ascertain hitherto undocumented fish species, hence augmenting the known alpha diversity of reef fishes from the Lakshadweep.

With the current efforts, the study consolidated 15 new distributional records of fish belonging to six families. In our previous studies, primarily conducted inside the Kavaratti lagoon, we added 19 new records (Sandra *et al.*, 2022, 2023). The current study recorded five new records from the lagoon and nine from the outer reef. *Eviota cf. teresae*, *E. punyit*, *G. delicatulus*, *P. xanthocercus*, *P. evanidus* and *C. latifasciata* are new to Indian waters. *Pseudocheilinus evanidus* is naturally found in the Indo-Pacific region (Froese and Pauly, 2022) and might have been overlooked in prior research due to the different methodologies of survey and collection employed. *Coris latifasciata* is one of the three species under the taxonomic genus complex, including *Coris variegata* and *Coris batuensis*. The research documented the new observation of *C. latifasciata* in the Lakshadweep waters, ascertained by the presence of morphological characteristics consistent with those described by Randall (2013). *Pomacentrus xanthocercus* is one of the three newly described species of the *Pomacentrus philippinus* species complex by Allen *et al.* (2022). *Pomacentrus xanthocercus* represents the Indian Ocean variety of the *P. philippinus* species complex, initially described from the Maldives and Sri Lanka. The present study extends the range of this species to the adjacent waters of Lakshadweep. *Eviota punyit* is a recently described species (Tornabene *et al.*, 2016). Hence, this species might be previously misidentified as *E. sebreei*. *Eviota punyit* is distinguished from the morphologically similar *E. sebreei* by the presence of a more reddish lateral stripe, and based on the geographical distribution, *E. sebreei* lacks distribution in the Western Indian Ocean and the Red Sea (Tornabene *et al.*, 2016). The individual we have identified as *E. cf. teresae* in the Lakshadweep is likely the unidentified species included in the *E. guttata* species complex described in a recent publication by Erdmann *et al.* (2023). This complex includes *E. guttata* in the Red Sea, *E. teresae* from Indonesia and eastern Australia east to Fiji and Tonga, *E. taeiae* from Samoa, and *E. albolineata* from French Polynesia besides the undescribed species. According to Erdmann *et al.* (2023) the similar-looking species found in the Seychelles and Maldives (Indian Ocean) is genetically distinct. Therefore, further detailed studies are required to unveil the true identity of the observed *E. cf. teresae*. *Glyptoparus delicatulus* has previously never been reported from India though present in other regions of the Western Indian Ocean. Randall and Anderson (1993) documented its presence in the Maldives, which suggests that fishes that have only been found in the Maldives may also be found in Lakshadweep.

The key reason for the significant number of new records from these waters is the ongoing research employing underwater surveys of the coral environment. We used the UVC method for our reef fish surveys. Since the visual analysis yielded 15 new records quickly, this method has significant potential to find more unreported species from these waters. Hence, a more detailed investigation of these remote islands could yield more species, providing information on the diversity of reef fishes in these areas. This method is utilised to study shallow aquatic environments, which are especially useful for assisting conservation

and fishery management decisions on coral reefs (Caldwell *et al.*, 2016). Bait trapping, gill nets, etc., conducted most previous studies of fish in this region. However, the complexities of a coral reef habitat allowed many reef fishes to use it to their advantage by utilising the complex coral structures as hiding spots. This makes it incredibly challenging to catch those using conventional fishing techniques, as had been done in most previous studies. Snorkelling in shallow lagoons and SCUBA diving in deeper water, with simultaneous video recording and photography along timed swims and transects, are far more effective methods for assessing fish species composition (Bellwood and Alcala, 1988; Harmelin-Vivien and Francour, 1992).

This work has the potential to offer fundamental data for the preservation and administration of reef ecosystems, as well as a deeper comprehension of the distribution and zoogeography of coral reef fish species. According to Williams *et al.* (2014), the prioritisation of conservation planning for marginal habitats that are eligible for protection can only be achieved through species data. By using sufficient data and range maps constructed based on the presence or absence of a species, the likelihood of obtaining a dependable estimate of species diversity for databases and lists is substantially enhanced. Acquiring these data is crucial in formulating conservation plans and maintaining the sustainable existence of fish resources.

The current study posits that there exists a considerable number of undocumented species inside the aforementioned geographic area. Therefore, it is imperative to conduct additional extensive surveys on the islands of Lakshadweep since they have the potential to yield vital insights into the fish diversity of these coral reefs.

**Data availability.** The data that support the findings of this study are available from the corresponding author, upon reasonable request.

**Acknowledgements.** We thank the Director, ICAR-CMFRI, Kochi, for the facilities provided during the study. We are also profoundly grateful for the help extended during fieldwork by the Lakshadweep Administration and Krishi Vigyan Kendra (KVK), Kavaratti. The authors thank Dr Helen Larson (Museum of Tropical Queensland, Wongaling Beach, Townsville, Australia) and Dr David Greenfield (California Academy of Sciences) for expert species identification opinions. The aid rendered in diving by Amanullah V.P., Najemuddin Povammada and Saheer Ali from Lakshadweep SCUBA Adventures is much appreciated.

**Author contributions.** A. A.: conceptualization, methodology, investigation, photography, species identification and writing – original draft preparation. S. B.: conceptualization, investigation and writing – original draft preparation. M. P. S.: supervision, species confirmation and writing – review and editing. R. F.: species confirmation and writing – review and editing. S. K. R.: supervision, writing – review and editing.

**Financial support.** This research received no specific grant from any funding agency, commercial or not-for-profit sectors

**Competing interests.** The authors have no conflicts of interest to declare relevant to this article's content.

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