Nekton: Jurnal Perikanan dan Ilmu Kelautan
Vol 6 No 1 (2026): 13–25. DOI: 10.47767/nekton.v6i1.1107
ISSN 2776-2734 (online); ISSN 2776-2742 (printed)
Publisher: Politeknik Negeri Sambas

RESEARCH ARTICLE

Coral Reef Fish Community in the Waters of Osi Island West Seram Maluku

Komunitas Ikan Karang di Perairan Pulau Osi Seram Bagian Barat Maluku

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Abstract. Coral reef fish are a crucial fishery resource in tropical waters, including Maluku. Information regarding the species of coral reef fish caught in the waters of Osi Island, West Seram District, is still limited. This study aimed to identify the coral reef fish species captured in the waters of Osi Island and its surroundings based on their meristic and morphometric characteristics. The research was conducted in December 2024, utilizing 12 fish specimens caught by local fishermen. Species identification was carried out through the observation of meristic and morphometric characters, which were then matched with identification keys and taxonomic literature. The results revealed seven coral reef fish species belonging to five genera: *Lutjanus*, *Pterocaesio*, *Myripristis*, *Sargocentron*, and *Siganus*. The species identified included *Lutjanus rufolineatus*, *Lutjanus fulviflamma*, *Pterocaesio tesselata*, *Myripristis berndti*, *Myripristis murdjan*, *Sargocentron tiereoides*, and *Siganus fuscescens*. *Pterocaesio tesselata* and *Siganus fuscescens* were the most commonly found species, with three specimens of each. The meristic and morphometric characteristics of all specimens fell within the ranges described in previous studies for these species. This study contributes additional baseline information on the diversity of coral reef fish in Maluku waters.
Keywords: Osi island, coral reef fish, meristics, morphometrics, species identification.

Abstrak. *Ikan karang merupakan sumber daya perikanan penting di perairan tropis, termasuk Maluku. Informasi mengenai spesies ikan karang yang tertangkap di perairan Pulau Osi, Kabupaten Seram Bagian Barat, masih terbatas. Penelitian ini bertujuan untuk mengidentifikasi spesies ikan karang yang tertangkap di perairan Pulau Osi dan sekitarnya berdasarkan karakter meristik dan morfometrik. Penelitian dilakukan pada Desember 2024 dengan menggunakan 12 spesimen ikan hasil tangkapan nelayan setempat. Identifikasi spesies dilakukan melalui pengamatan karakter meristik dan morfometrik serta pencocokan dengan kunci identifikasi dan literatur taksonomi. Hasil penelitian menunjukkan tujuh spesies ikan karang yang termasuk dalam lima genus, yaitu Lutjanus, Pterocaesio, Myripristis, Sargocentron, dan Siganus. Spesies yang ditemukan meliputi Lutjanus rufolineatus, Lutjanus fulviflamma, Pterocaesio tesselata, Myripristis berndti, Myripristis murdjan, Sargocentron tiereoides, dan Siganus fuscescens. Pterocaesio tesselata dan Siganus fuscescens merupakan spesies yang paling banyak ditemukan, masing-masing tiga spesimen. Nilai karakter meristik dan morfometrik seluruh spesimen berada dalam kisaran yang sesuai dengan deskripsi spesies pada penelitian sebelumnya. Hasil penelitian ini menambah informasi dasar mengenai keragaman ikan karang di perairan Maluku.*
Kata Kunci: pulau Osi, ikan karang, meristik, morfometrik, identifikasi spesies.

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To cite this article (APA Style):
Haumahu, S., Komalia, I., & Rijoly, F. (2026). Coral Reef Fish Community in the Waters of Osi Island West Seram Maluku. *Nekton, 6*(1), 13–25. https://doi.org/10.47767/nekton.v6i1.1107

https://ojs.poltesa.ac.id/index.php/nekton
Submitted: 22 Sep 2025; Received in revised form: 13 Jan 2026; Accepted: 1 Feb 2026; Published regularly: 5 April 2026

INTRODUCTION

Coral reef fish are a vital resource within coral reef ecosystems. These fish live, reproduce, and forage in the vicinity of coral reefs. Coral reef fish are generally classified into ornamental fish and consumption fish. There are approximately 6,000 to 8,000 species of coral reef fish worldwide (Allen et al., 2015). The coral reef fish community plays a crucial role in supporting the interactions within the coral reef ecosystem. The presence of coral reef fish is influenced by the health of the coral reef, as indicated by the percentage of live coral cover. In other words, various species of coral reef fish are highly dependent on coral reefs as their habitat, and their distribution and associations are determined by the coral community (Allen et al., 2015). These fish utilize the coral reef for their life functions, both directly and indirectly. Some species of coral reef fish use coral reefs as feeding grounds, breeding grounds, nursery areas, and shelters (Suharsono, 2014).

Coral reef fish are an economically significant fishery commodity. These fish are widely distributed in tropical and subtropical waters, particularly in Indonesia, which is at the center of the world's coral triangle (Sahetapy et al., 2018). Coral reef fish are abundant in the waters of Maluku (Limmon et al., 2017a; Limmon et al., 2017b; Sahetapy et al., 2020; Wouthuyzen et al., 2018). The Maluku Province plays a significant role in the fisheries sector due to its location in the heart of the Coral Triangle, situated between two major water masses: the Pacific and Indian Oceans. Furthermore, Maluku is part of three Fisheries Management Areas (WPP), namely WPP 714 (Banda Sea), WPP 715 (Seram Sea), and WPP 718 (Arafura Sea), with a potential of 1.6 million tons per year (Sahetapy et al., 2018). Coral reef fish can be categorized into three groups: target fish, major species, and indicator species. Target fish are commonly utilized by local fishermen, including those in Maluku, as a source of family income and protein. These target fish include families such as Serranidae, Acanthuridae, and Scaridae (Huliselan et al., 2019).

The waters around Osi Island, located in Kotania Bay, West Seram District, Maluku, represent a tropical coastal area with high marine biodiversity potential. This region is supported by the presence of coral reef ecosystems, which serve as the main habitat for various marine organisms, including coral reef fish (Huliselan et al., 2017). Coral reef fish play an important ecological role in maintaining the balance of the ecosystem through trophic interactions and also serve as indicators of coral reef health (Panggabean et al., 2020). In addition, coral reef fish hold significant economic value and are a primary livelihood source for coastal communities, including the Osi Island village.

Despite its significant potential, the utilization of coral reef fish resources in the waters around Osi Island has not been supported by sufficient biodiversity data. Information regarding the composition of coral reef fish species, particularly those captured by local fishermen, is still limited and has not been scientifically documented. This is reflected in the local practice where various types of coral reef fish are commonly referred to as "ikan batu-batu" (stone fish) without distinguishing the species specifically. This lack of information highlights a knowledge gap in the taxonomy and biodiversity of coral reef fish in the region.

The absence of accurate taxonomic data has implications for the limited scientific foundation in the management of fisheries resources and coral reef ecosystem conservation. Accurate species identification is a fundamental step in establishing biodiversity data, evaluating resource potential, and determining ecosystem-based management strategies (Panggabean et al., 2020). In this context, morphometric and meristic approaches are commonly used in fish identification, as they provide relatively stable diagnostic characters that can be compared with existing taxonomic references.

Given these conditions, this study is crucial to identify and describe the species of coral reef fish captured in the waters around Osi Island based on their morphometric and meristic characteristics. The results of this study are expected to fill the gap in coral reef fish biodiversity data in Maluku waters and provide a scientific foundation for sustainable fisheries resource management and coastal ecosystem conservation efforts.

MATERIAL AND METHODS

This study was conducted in December 2025. Sampling was carried out in the waters around Osi Island, West Seram District (SBB), Maluku, Indonesia. Sample analysis was performed at the Ecology Laboratory, Maritime Study Center, Pattimura University, Ambon. The study employed a descriptive-exploratory method, aiming to identify and describe coral reef fish species based on their morphometric and meristic characteristics. Coral reef fish samples were obtained from the local fishermen's catches in the waters of Osi Island. The sampling technique used was purposive sampling, where coral reef fish specimens caught during the study period were selected. A total of 12 specimens were used in this study. Each fish specimen was measured for its morphometric characteristics using a caliper with a precision of 0.01 cm.

Morphometric and meristic analyses were performed following the methods outlined by Rijoly (1987), Allen and Erdmann (2012), and Allen et al. (2015). Seven meristic characters were recorded, namely: dorsal fin rays (D), anal fin rays (A), pectoral fin rays (P), ventral fin rays (V), caudal fin rays (C), lateral line (LL), and gill rakers (GR). Additionally, 17 meristic parameters were measured (Figure 1).

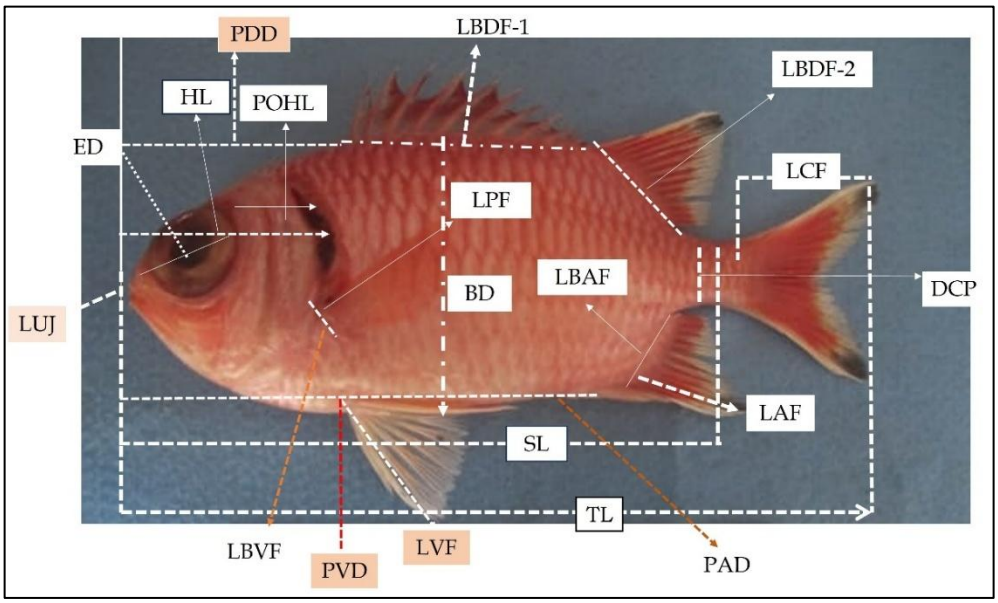

Figure 1. Measured Morphometric and Meristic Components of Coral Reef Fish

Figure Description: Total Length (TL), Standart Length (SL), Body Depth (BD), Head Length (HL), Eye Diameter (ED), Post Orbital Head Length (POHL), Length of Upper Jaw (LUJ), Predorsal Distance (PDD), Prepectoral Distance (PPD), Preventral Distance (PVD), Preanal Distance (PAD), Length of Pectoral Fin (LPF), Length of Ventral Fin (LVF), Length of Caudal Fin (LCF), Length of Anal Fin (LAF), Length of Base Dorsal Fin (LBDF), Depth of Caudal Peduncle (DCP).

For this measurement, the ratios of the morphometric parameters were standardized against body depth and total length. All fish specimens were identified using the identification key from Carpenter and Niem (2001) and the FishBase database (https://www.fishbase.se/search.php). The results of the meristic component measurements were organized into a range from the lowest to the highest values. The formula used to calculate the ratios of the morphometric components is based on Rijoly (1987). The range values (lowest and highest) for all morphometric components were recorded, including their percentage values (%).

RESULTS AND DISCUSSION

Composition of Coral Reef Fish Species in the Waters of Osi Island

Seven species of coral reef fish were found in the waters of Osi Island, West Seram (Table 1 and Figure 2). These species include *Lutjanus rufolineatus* (Figure 2A), *Lutjanus fulviflamma* (Figure 2B), *Pterocaesio tesselata* (Figure 2C), *Myripristis berndti* (Figure 2D), *Myripristis murdjan* (Figure 2E), *Sargocentron tiereoides* (Figure 2F), and *Siganus fuscescens* (Figure 2G). These seven species belong to four families and five genera:

Lutjanidae (genus *Lutjanus*), Caesionidae (genus *Pterocaesio*), Holocentridae (genera *Myripristis* and *Sargocentron*), and Siganidae (genus *Siganus*).

Table 1. Composition of Coral Reef Fish Species Found in the Waters of Osi Island

No.	Species	Family	Number of Specimens
1	*Lutjanus rufolineatus* (Valenciennes, 1830)	Lutjanidae	2
2	*Lutjanus fulviflamma* (Forsskål, 1775)	Lutjanidae	1
3	*Pterocaesio tesselata* (Carpenter, 1987)	Caesionidae	3
4	*Myripristis berndti* (Jordan & Evermann, 1903)	Holocentridae	1
5	*Myripristis murdjan* (Forsskål, 1775)	Holocentridae	1
6	*Sargocentron tiereoides* (Bleeker, 1853)	Holocentridae	1
7	*Siganus fuscescens* (Houttuyn, 1782)	Siganidae	3

Sahetapy et al. (2018) reported 243 species of coral reef fish in the Tuhaha waters (Saparua Island, Central Maluku) using the underwater visual census method. Limmon et al. (2018) reported 293 species in the southern Ambon Island waters, also using this method. In contrast, Huliselan et al. (2017) found 35 species of coral reef fish from the Serranidae family (groupers) in the Kotania Bay waters, based on data from local fishermen and the type of fishing gear used. Furthermore, Huliselan et al. (2019) documented 105 species of target coral reef fish in the Kotania Bay waters, belonging to 37 genera and 18 families using the underwater visual census method. The number of species found in this study differs from previous studies due to differences in methodology. In this study, coral reef fish specimens were obtained from local fishermen's catches, while the studies by Limmon et al. (2018) and Sahetapy et al. (2018) employed survey methods (underwater visual census).

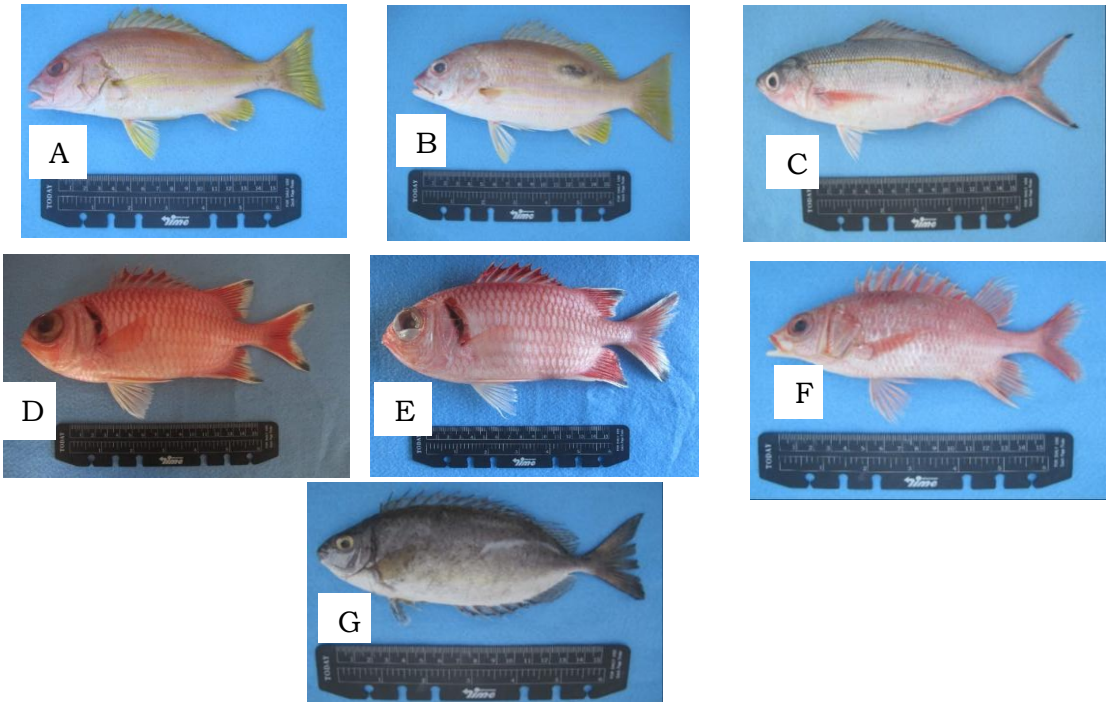

Figure 2. Coral Reef Fish Species Found in the Waters of Osi Island (*Taken by:Indra Komalia, 2025*)

Figure Description: (A) *Lutjanus rufolineatus*; (B) *Lutjanus fulviflamma*; (C) *Pterocaesio tesselata*; (D) *Myripristis berndti*; € *Myripristis murdjan*; (F) *Sargocentron tiereoides*; (G) *Siganus fuscescens*

The differences in the number and composition of coral reef fish species found in this study compared to previous studies are influenced by ecological factors and sampling methods. Ecologically, variations in coral reef habitat conditions, substrate

complexity, depth, water quality, and fishing pressure can affect the presence and distribution of coral reef fish. Additionally, differences in sampling time and season contribute to variations in species detection. The use of fishermen's catches in this study results in higher selectivity compared to the underwater visual census method, meaning not all species present in the habitat were observed. Therefore, the number of species obtained in this study tends to be smaller and different compared to previous studies.

Coral Reef Fish Species Description

The genus *Lutjanus* exhibited differences in the number of dorsal fin rays and caudal fin rays. On the other hand, the genus *Myripristis* showed variations in meristic components in the dorsal fin, anal fin, and pectoral fin rays (Table 2).

Table 2. Comparison of Meristic Components

Fish Species	Meristics Parameter						
	D	A	P	V	C	LL	GR
Lutjanus rufolineatus	XI.14	III.8	16	I.5	18	46	7+14-15
Lutjanus fulviflamma	X.13	III.8	16	I.5	17	48	6+9
Pterocaesio tesselata	X.14-15	III.11	20-21	I.5	21-23	66-72	8-9+25
Myripristis berndti	XI.15	IV.11	14	I.7	17	28	11+24
Myripstis murdjan	XI.14	IV.12	15	I.7	17	27	15+27
Sargocentron tiereoides	XI.13	1V.9	14	I.7	17	39	8+12
Siganus fuscescens	XIII.10	VII.9	14-15	II.3	18-19	-	7-8+13-17

Table 3 shows the ratios of the standard length of each species of coral reef fish, which exhibit considerable variation. Other results, the two genera with two species each *Lutjanus* and *Myripristis* there are significant differences in morphometric components. *L. fulviflamma* exhibited 10 different morphometric components compared to *L. rufolineatus*. These components include body depth, eye diameter, postorbital head length, upper jaw length, anal fin base length, pectoral fin base distance, anal fin origin distance, pectoral fin length, pelvic fin length, and caudal fin length. Conversely, *M. berndti* and *M. murdjan* exhibited differences in eight morphometric components, including snout length, eye diameter, postorbital head length, dorsal fin base distance, pectoral fin base distance, pectoral fin length, pelvic fin length, and caudal fin length.

Table 3. Comparison of Meristic Components

Morphometric Components (mm)	*L. rufolineatus*	*L. fulviflamma*	*P. tessellata*	*M. berndti*	*M. murdjan*	*S. tiereoides*	*S. fuscescens*
Body Depth (BD)	2.5-2.6	2.9	3.4	2.5	2.2	2.6	2.6-2.8
Head Length (HL)	2.6	2.6	3.2-3.4	2.7	2.6	2.8	3.8-4.0
Snout Length (SnL)	7.8-7.9	7.8	11.1-11.9	8.2	7.8	10.5	7.6-8.1
Eye Diameter (ED)	15.8-16.9	17.9	11.3-12.2	14.0	11.4	7.0	9.9-11.1
Post Orbital Head Length (POHL)	10.8-10.9	8.4	4.9-5.8	6.4	5.6	4.2	8.5-9.5
Length of Upper Jaw (LUJ)	6.5-7.1	4.1	11.0-11.5	4.9	4.6	7.0	11.8-13.9
Predorsal Distance (PDD)	6.3-6.7	6.6	2.4-2.5	5.8	4.7	2.4	3.1-3.6
Prepectoral Distance (PPD)	2.3-2.4	2.2	3.2-3.5	4.9	2.2	2.7	4.0-4.3
Preanal Distance (PAD)	2.7	3.0	1.4-1.5	2.8	2.7	1.3	1.8
Preventral Distance (PVD)	1.4	1.4	2.7	1.4	1.3	2.5	3.0-3.7
Length of Base Dorsal Fin (LBDF)	2.4-2.5	2.5	1.8-1.9	2.5	2.3	1.8	1.3-1.4
Length of Base Anal Fin (LBAF)	1.7-1.8	2.0	4.0-4.6	1.8	1.8	5.5	2.1-2.2
Depth of Caudal Peduncle (DCP)	5.6-6.3	6.1	12.5-13.6	4.6	4.2	9.6	11.2-12.8
Length of Pectoral Fin (LPF)	8.0-8.5	7.4	3.0-3.2	9.5	8.9	4.4	4.8-4.9
Length of Ventral Fin (LVF)	2.7-2.9	3.2	5.8-6.7	4.1	3.6	3.6	7.3-8.2
Length of Caudal Fin (LCF)	4.1-4.2	5.2	3.2-3.6	4.6	3.9	3.6	3.1-3.7
Snout Length	3.04-3.05	2.98	1.00	2.98	2.97	3.72	10.0-10.8
Eye Diameter	4.21-4.24	3.21	3.27-4.66	2.33	2.14	2.49	10.6-11.2
Post Orbital Head Length	2.53-2.77	1.58	2.82-3.55	1.79	1.77	1.49	11.6-12.2
Length of Upper Jaw	2.45-2.60	2.53	1.43-1.79	2.11	1.79	2.49	15.0-15.1
Depth of Caudal Peduncle	3.12-3.34	2.54	3.66-4.00	3.76	4.05	3.76	20.6-21.4
Head Length (HL)	1.00-1.01	0.90	1.00	1.09	1.18	1.11	16.6-17.1

1. *Lutjanus rufolineatus* (Valenciennes, 1830)

L. rufolineatus (Figure 2A), known as the "yellow-lined snapper," has a fusiform body shape. The body depth ranges from 2.5 to 2.6 cm (38.9-39.3%) of the standard length. The snout is somewhat pointed. The head length is 2.6 cm (38.9%) of the standard length. The eyes are large, with the eye diameter varying from 10.8 to 10.9 cm (9.2-9.3%) of the head length. The upper jaw length ranges from 6.3 to 6.7 cm (14.1-15.9%) of the

head length. The distance to the dorsal fin origin is 2.3-2.4 cm (41.2-43.6%) of the standard length. The distance to the pectoral fin origin is 2.7 cm (37.4%) of the standard length. The distance to the anal fin origin is 1.4 cm (72.2%) of the standard length, while the distance to the pelvic fin origin is 2.4-2.5 cm (39.8-42.2%) of the standard length.

The dorsal fin of this species has 11 spines and 14 soft rays. The anal fin has 3 spines and 8 soft rays. The pectoral fin has 16 soft rays; the pelvic fin has 1 spine and 5 soft rays. The gill rakers number 21, with 15 on the lower limb. Table 4 presents a comparison of the meristic and morphometric components of *L. rufolineatus* with those from other studies. The total length of the obtained specimens ranged from 19 to 21 cm. The maximum reported total length for this species, according to Anderson and Allen (2001b), is 30 cm. The commonly caught total length is 20 cm. The total length of the specimens obtained in this study is still smaller compared to the maximum total length reported by Anderson and Allen (2001b).

Table 4. Comparison of Meristic and Morphometric Parameters of *Lutjanus rufolineatus* with those Reported in Previous Studies.

Parameter	Current Study	FishBase (2025)	Anderson & Allen (2001b)
Meristics			
Dorsal Fin (D)	XI.14	XI.13-14	XI.13-14
Anal Fin (A)	III.8	III.8	III.8
Pectoral Fin (P)	16	16-17	16-17
Ventral Fin (V)	I.5		I,5
Gill Rakers (GR)	7 + 14-15	6-7 + 13-15	
Lower Gill Rakers	14-15	13-15	13-15
Morphometrics (ratio; %)			
Ratio of Standard Length			
Body Depth (BD)	2.5-2.6	2.4-2.6	2.3-2.9

2. *Lutjanus fulviflamma* (Forsskål, 1775)

L. fulviflamma (Figure 2B), also known as the "dory snapper," was represented by only one specimen in this study. *L. fulviflamma* has a dorsal fin with 10 spines and 13 soft rays. The anal fin has 3 spines and 8 soft rays. The pectoral fin has 16 soft rays. In contrast, the pelvic fin has 1 spine and 15 soft rays. Furthermore, Table 5 shows a comparison of meristic and morphometric parameters of *L. fulviflamma* with those from other studies.

Table 5. Comparison of Meristic and Morphometric Parameters of *L. fulviflamma* with those Reported in Previous Studies.

Parameter	Current Study	Anderson & Allen (2001a)	FishBase (2025)
Meristics			
Dorsal Fin (D)	X.13	X.12-14	X.12-14
Anal Fin (A)	III. 8	III.8	III.8
Pectoral Fin (P)	16	15-17	15-17
Ventral Fin (V)	I.5		I.5
Lateral Line (LL)	48	46-49	
Gill Rakers (GR)	7 + 9	6-7 + 9-12	6-7 + 9-12
Lower Gill Rakers	9		6-7
Total Gill Rakers	16		16-19
Morphometrics (ratio; %)			
Ratio of Standard Length			
Body Depth (BD)	2.9	2.6-2.9	2.6-2.9

L. fulviflamma has a body depth of 2.9 cm (34.3%) relative to standard length. The head length is 2.6 cm (38.3%) relative to standard length, while the snout length is 7.8 cm (12.9%) relative to standard length. The eye diameter is 8.4 cm relative to the head

length. The upper jaw length is 6.6 cm (15.1%) relative to the head length. The distance to the dorsal fin origin is 2.2 cm (45.8%) relative to standard length. The distance to the pectoral fin origin is 3.0 cm (33.0%) relative to standard length. The distance to the anal fin origin is 1.4 cm (72.2%) relative to standard length, and the distance to the pelvic fin origin is 2.5 cm (40.1%) relative to standard length. The dorsal side is brown, the upper side is light brown or white, and the belly is white to yellow, usually displaying 6-7 yellow lines along the sides and prominent black spots at the base beneath the anterior part of the soft dorsal fin.

The total length of the obtained specimen ranged from 24 cm. The maximum reported total length for this species is 35 cm, and the commonly caught total length is 25 cm (Anderson & Allen, 2001a). The total length of the specimen obtained in this study is still smaller than the maximum length reported by Anderson and Allen (2001a), but larger than the commonly caught length.

3. *Pterocaesio tesselata* (Carpenter, 1987)

P. tesselata (Figure 2C), commonly known as the "onestripe fusilier" (Carpenter, 2025), has the following characteristics: the dorsal and anal fins are covered with scales; the scale rows on the posterior back are slanted; there are two postmaxillary processes; and small conical teeth on the jaws. The body is bluish-green on the upper part, white or silvery blue on the underside (with a slightly pink ventral part); one long yellow stripe on the lateral side, about the width of one scale, covering most of the lateral line, usually extending from the dorsal to the lateral line at the base of the tail; the tail fin is dark, with the lobes' tips being black.

P. tesselata has a dorsal fin with 10 spines and 14-15 soft rays. The anal fin has 3 spines and 11 soft rays. The pectoral fin has 20-21 soft rays. The pelvic fin has 1 spine and 5 soft rays. The lateral line (LL) has 66-72 scales, and the gill rakers (GR) are 8-9 + 25 (Table 6).

P. tesselata has a body depth of 3.4 cm (29.3-29.6%) relative to standard length. The head length ranges from 3.2-3.4 cm (29.1-31.0%) relative to standard length, while the snout length is 11.1-11.9 cm (8.4-9.0%) relative to standard length. The eye diameter ranges from 11.3-12.2 cm (8.2-8.8%) relative to head length. The postorbital head length is 4.9-5.8 cm (17.3-20.3%) relative to head length. The upper jaw length is 11.0-11.5 cm (8.7-9.1%) relative to head length. The distance to the dorsal fin origin ranges from 2.4-2.5 cm (39.5-41.2%) relative to standard length. The distance to the pectoral fin origin is 3.2-3.5 cm (28.3-31.1%) relative to standard length. The distance to the anal fin origin ranges from 1.4-1.5 cm (68.2-69.0%) relative to standard length, and the distance to the pelvic fin origin is 2.7 cm (36.8-37.2%) relative to standard length.

Table 6. Comparison of Meristic and Morphometric Parameters of *P. tesselata* with those Reported in Previous Studies.

Parameter	Current Study	Fishbase (2025)	Carpenter (2001)
Meristics			
Dorsal Fin (D)	X.14-15	X.14-16	X.15
Anal Fin (A)	III.11	III.11-13	III.12
Pectoral Fin (P)	20-21		20-22
Ventral Fin (V)	I.5		I.5
Lateral Line (LL)	66-72	66-77	69-75
Morphometrics (ratio; %)			
Ratio of Standard Length			
Body Depth (BD)	3.4	3.3-4.4	
Head Length (HL)	3.2-3.4	3.4-3.7	

The total length of the specimen obtained was 21 cm. The maximum reported total length for this species is 25 cm, according to Carpenter (2001). The total length of the specimen obtained in this study is smaller than the maximum total length reported by Carpenter (2001). The data presented in Table 6 indicated that the meristic and

morphometric characteristics of *P. tesselata* obtained in this study were within the range reported by Carpenter (2001). This finding suggests that the species identification was accurate.

4. *Myripristis berndti* (Jordan & Evermann, 1903)

Myripristis berndti, commonly known as the blotcheye soldierfish (Figure 2D), is characterized by a distinctly protruding lower jaw in adults when the mouth is closed. The lower half to three-quarters of the inner pectoral axil is covered with small scales. The scale centers are silvery pink to pale yellowish, with red margins. The opercular membrane is black and extends below the opercular spine; the exposed part of the pectoral axil is black. The outer half of the spinous dorsal fin is yellow to orange-yellow, whereas the lower half of the other fins is red, with a white anterior margin, sometimes accompanied by a black line along the lower edge.

M. berndti had 11 dorsal-fin spines and 14 soft rays. The pectoral fin had 15 soft rays, while the anal fin had 4 spines and 12 soft rays. The lateral line consisted of 27 scales, and the gill rakers were recorded as 15 + 27. Table 7 also presents a comparison of the meristic and morphometric parameters of *M. berndti* with those reported in previous studies.

M. berndti had a body depth of 2.52 (39.7%) of standard length and a head length of 2.7 (36.5%) of standard length, while the snout length was 8.2 (12.2%) of standard length. The eye diameter was 6.4 (15.6%) of head length, and the length of upper jaw was 5.8 (17.3%) of head length. The predorsal distance was 4.9 (20.4%) of standard length. The prepectoral distance was 2.8 (35.1%) of standard length. The preanal distance was 1.4 (71.1%) of standard length, whereas the preventral distance was 2.5 (40.2%) of standard length.

Table 7. Comparison of Meristic and Morphometric Parameters of *M. berndti* with those Reported in Previous Studies.

Parameter	Current Study	Allen & Erdmann (2012)	Randall & Greenfield (2001)
Meristics			
Dorsal Fin (D)	XI.15	X-I, 13-15	XI.13-15
Anal Fin (A)	IV.11	IV, 11-13	IV.11-13
Pectoral Fin (P)	14	14-16	
Ventral Fin (V)	I.7		I, 7
Caudal Fin (C)	17		17
Lateral Line (LL)	28	28-31	28-31
Total Gill Rakers	15+27	35-42	35-42
Morphometrics (ratio; %)			
Ratio of Standard Length			
Body Depth (BD)	2.52	2.3-2.6	2.3-2.65
Ratio of Head Length			
Interorbital Width (IOW)	5.11		4.5-5.2

The data presented in Table 7 also showed that the meristic and morphometric characteristics of *M. berndti* obtained in this study were within the same range, or were consistent with those reported by Randall and Greenfield (2001); Allen and Erdmann (2012). The total length of the specimen obtained was 17 cm. The maximum total length reported for this species is 30 cm, whereas the commonly caught total length is 22 cm (Carpenter, 2025). The total length of the specimen examined in this study was therefore smaller than the maximum total length reported by Carpenter (2025). This difference may be attributed to differences in sampling location.

5. *Myripristis berndti* (Jordan & Evermann, 1903)

Myripristis murdjan (Figure 2E), commonly known as the pinecone soldierfish, is characterized by a dorsal fin with 11 spines and 14 soft rays, an anal fin with 4 spines and 14 soft rays, and a pectoral fin with 15 soft rays (Table 8). This species is also characterized by large eyes, a lower jaw with a pair of tooth patches anteriorly just

outside the gape, 15 upper gill rakers on the first gill arch, a total of 42 gill rakers, 27 lateral-line scales, and a broad interorbital space measuring 3.65–4.4 times in head length. The body is red to dusky red, with reddish-brown scale margins. The opercular membrane is dark brown to black, extending approximately to the mid-eye level. The pectoral axil is dark brown to black. The spinous dorsal fin is pink on the basal two-thirds and bright red on the outer third, while the anterior margins of the soft dorsal, anal, caudal, and pelvic fins are white.

M. murdjan had a body depth of 2.2 (45.3%) of standard length and a head length of 2.6 (38.3%) of standard length, while the snout length was 7.8 (12.9%) of standard length. The eye diameter was 5.6 (17.9%) of head length, and the length of upper jaw was 4.7 (21.4%) of head length. The predorsal distance was 2.2 (45.5%) of standard length, and the prepectoral distance was 2.7 (37.2%) of standard length. The preanal distance was 1.3 (75.8%) of standard length, whereas the preventral distance was 2.3 (43.2%) of standard length.

Table 8. Comparison of Meristic and Morphometric Parameters of *M. murdjan* with those Reported in Previous Studies.

Parameter	Current Study	Allen & Erdmann (2012)	Randall & Greenfield (2001)
Meristics			
Dorsal Fin (D)	XI.14	X-I.13-15	XI.13-15
Anal Fin (A)	IV.12	IV.11-13	IV.11-14
Pectoral Fin (P)	15	14-16	
Ventral Fin (V)	I.7		I.7
Caudal Fin (C)	17		17
Lateral Line (LL)	28	27-32	28-30
Gill Rakers (GR)	15 + 27		
Total Gill Rakers	42	33-44	36-44
Morphometrics (ratio; %)			
Ratio of Standard Length			
Body Depth (BD)	2.2	2.2-2.6	2.3-2.5
Ratio of Head Length			
Interorbital Width (IOW)	4.35		3.65-4.4

The total length of the specimen obtained was 16 cm. The maximum total length reported for this species is 27 cm according to Allen and Erdmann (2012), whereas Randall and Greenfield (2001) reported a maximum total length of 23 cm and a commonly caught length of 18 cm. The total length of the specimen examined in this study was smaller than the maximum total lengths reported by Allen and Erdmann (2012) and Randall and Greenfield (2001), and was also below the commonly caught length reported by Randall and Greenfield (2001). The data presented in Table 8 indicated that the meristic and morphometric characteristics of *M. murdjan* obtained in this study were within the ranges reported by Randall and Greenfield (2001) and Allen and Erdmann (2012).

6. *Sargocentron tiereoides* (Bleeker, 1853)

Sargocentron tiereoides (Figure 2F), commonly known as the pink squirrelfish, had a dorsal fin with 11 spines and 13 soft rays. The anal fin had 4 spines and 9 soft rays (Table 9). The body is silvery pink with longitudinal red stripes. The head is red with a silvery reflection on the cheek and operculum. The dorsal spines are pink to light pink, with a dark red submarginal band and white membrane tips. The other fins are red to yellowish red, with dark red upper and lower margins on the caudal fin. The anterior margins of the anal and pelvic fins are white with a dark red submarginal band, while the pectoral-fin base is dark red. Four oblique scale rows are present on the cheek. The mouth of *S. tiereoides* is terminal, and the upper jaw extends to between the vertical line just anterior to the pupil and the mid-eye region.

Table 9. Comparison of Meristic and Morphometric Parameters of *S. tiereoides* with those Reported in Previous Studies.

Parameter	Current Study	Allen & Erdmann (2012)	Randall & Greenfield (2001)	FishBase (2025)
Meristics				
Dorsal Fin (D)	XI.13	XI.12-14	XI.13-15	XI.12-14
Anal Fin (A)	IV.9	IV.9-10		IV.9-10
Pectoral Fin (P)	14	14-16		
Ventral Fin (V)	I.7		I.7	
Caudal Fin (C)	17		17	
Lateral Line (LL)	39	39-44		
Gill Rakers (GR)	8 + 12	6-8 + 12-14		
Morphometrics (ratio; %)				
Ratio of Standard Length				
Body Depth (BD)	2.6	2.6-2.9		2.6-2.9
Head Length (HL)	2.8			2.6-2.85
Ratio of Head Length				
Snouth Length (SnL)	3.72			3.45-3.95
Length of Upper Jaw (LUJ)	2.49			2.45-2.6
Longest Dorsal Spine (LDS)	2.25			2.25-2.7
Longest Anal Spine (LAS)	1.6			1.25-1.6

The body depth of *S. tiereoides* was 39.2% of standard length, while the head length was 2.8 (35.4%) of standard length. The snout length was 10.5 (9.5%) of standard length, eye diameter was 7.0 (14.2%) of head length, and postorbital head length was 4.2 (23.7%) of head length. The length of upper jaw was 7.0 (14.2%) of head length. The predorsal distance was 2.4 (40.9%) of standard length. The prepectoral distance was 2.7 (37.3%) of standard length. The preanal distance was 1.3 (74.4%) of standard length, whereas the preventral distance was 2.5 (40.6%) of standard length. Table 9 also showed that the meristic and morphometric components obtained in this study were within the ranges reported by Allen and Adrim (2003), Randall and Greenfield (2001), Allen and Erdmann (2012), and FishBase (2025). This finding indicates that the identification of this coral reef fish species was accurate.

The total length of the specimen obtained was 18 cm. The maximum total length reported for this species is 19.5 cm according to Allen and Erdmann (2012) and FishBase (2025). The total length of the specimen examined in this study was slightly smaller than the maximum total length reported by both references, but it reached 92.31% of the reported maximum total length.

7. *Siganus fuscescens* (Houttuyn, 1782)

Siganus fuscescens (Figure 2G), commonly known as the mottled spinefoot, was represented by three specimens in this study. *S. fuscescens* had a dorsal fin with 13 spines and 10 soft rays. The anal fin had 7 spines and 9 soft rays. The pectoral fin had 14–15 soft rays, while the pelvic fin had 2 spines and 3 soft rays. The gill rakers numbered (7–8) + (13–17) (Table 10).

This fish is olive green or brown on the upper body and silvery on the lower body. It often has a dark blotch below the base of the lateral line. Adults may develop mottled markings when frightened. The spines are slender, sharp, and venomous. The thoracic midline is positioned between the dorsal region. Based on morphometric measurements, *S. fuscescens* had a body depth of 2.6–2.8 (35.8–37.9%) of standard length. Head length ranged from 3.8 to 4.0 (25.1–26.4%) of standard length, while snout length was 7.6–8.1 (12.4–13.2%) of standard length. Eye diameter ranged from 9.9 to 11.1 (9.0–10.1%) of head length, postorbital head length was 8.5–9.5 (10.5–11.7%), and length of upper jaw was 11.8–13.9 (7.2–8.5%) of head length. Predorsal distance was 3.1–3.6 (28.0–32.5%) of standard length, and prepectoral distance was 4.0–4.3 (23.0–25.1%) of standard length. Preanal distance was 1.8 (54.2–54.9%) of standard length, whereas preventral distance was 3.0–3.7 (24.2–32.8%) of standard length.

Table 10. Comparison of Meristic and Morphometric Parameters of *S. fuscescens* with those Reported in Previous Studies.

Parameter	Current Study	Fishbase (2025)	Woodland (2001)
Meristics			
Dorsal Fin (D)	XIII.10	XIII.10	XIII.10
Anal Fin (A)	VII.9	VII.9	
Ventral Fin (V)	II.3		II.3
Caudal Fin (C)	17		17
Morphometrics (ratio; %)			
Ratio of Standard Length			
Body Depth (BD)	2.6-2.8		2.3-2.9
Ratio of Longest Dorsal Spine			
Last anal spine	1.9-2.1		1.3-1.5
Longest dorsal ray	0.9-1.0		0.5-1

The length of dorsal-fin base was 1.3–1.4 (72.2–75.7%) of standard length, and the length of anal-fin base was 2.1–2.2 (45.7–47.8%) of standard length. The depth of caudal peduncle was 11.2–12.8 (5.7–8.9%) of standard length. The length of pectoral fin was 4.8–4.9 (20.2–20.8%), length of pelvic fin was 7.3–8.2 (12.0–12.1%), and length of caudal fin was 3.1–3.7 (27.2–31.9%) of standard length. The longest dorsal-fin spine length was 10.0–10.8 (9.2–10.0%) of standard length, the longest dorsal-fin soft ray length was 10.6–11.2 (9.0–9.4%), the longest anal-fin spine length was 11.6–12.2 (8.2–8.6%), the longest anal-fin soft ray length was 15.0–15.1 (6.6–6.7%), the last dorsal spine length was 20.6–21.4 (4.7–4.9%), and the last anal spine length was 16.6–17.1 (5.8–6.0%) of standard length.

The maximum total length of the specimens obtained was 40 cm. The maximum total length reported for this species is 40 cm according to FishBase (2025) and Woodland (2001), while the commonly caught length is 25 cm. The maximum total length of the specimens examined in this study was therefore consistent with the maximum total length reported by FishBase (2025) and Woodland (2001), and was greater than the commonly caught length reported in those references. Table 10 showed that the meristic and morphometric characteristics of *S. fuscescens* obtained in this study were within the ranges reported by Woodland (2001) and FishBase (2025).

CONCLUSION

A total of seven coral reef fish species were recorded in the waters around Osi Island, namely *Lutjanus rufolineatus*, *Lutjanus fulviflamma*, *Pterocaesio tesselata*, *Myripristis berndti*, *Myripristis murdjan*, *Sargocentron tiereoides*, and *Siganus fuscescens*. The identification and description of these seven species showed variation in morphometric ratios, including standard length, total length, and other morphometric components, among the species examined. Variation in meristic characters was also observed, particularly in the number of dorsal-fin, pectoral-fin, pelvic-fin, and anal-fin rays.

ACKNOWLEDGEMENTS

The authors would like to thank the Government of Osi Hamlet, Eti Village, West Seram Regency, for granting permission to conduct field data collection in Osi Hamlet. The authors also express their gratitude to the Head of the Center for Maritime Studies, Pattimura University, for providing laboratory facilities for this research.

AUTHOR CONTRIBUTIONS STATEMENT

The authors declare that their respective contributions to this manuscript are as follows: SH was the main contributor who designed the study, wrote the manuscript, and revised the article. IK and FR were contributing authors who assisted in the implementation of the study and contributed to manuscript revision. The authors have submitted a signed Author Declaration Statement.

CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest with any party regarding the publication of this article.

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