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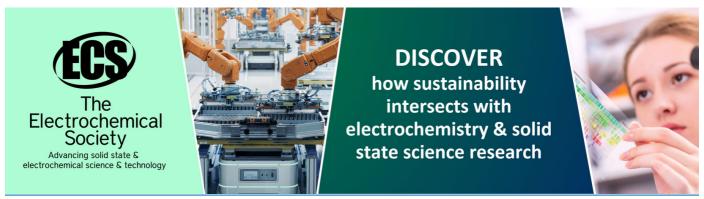
# Checklist of coral fishes in Lhoknga and Lhok Mata le Beaches, Aceh Besar, Indonesia

To cite this article: F M Nur et al 2019 IOP Conf. Ser.: Earth Environ. Sci. 348 012104

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# Checklist of coral fishes in Lhoknga and Lhok Mata Ie Beaches, Aceh Besar, Indonesia

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Abstract. The objective of the present study was to inventory the coral fish fingerling in Lhoknga and Lhok Mata Ie Beaches, Aceh Besar District, Aceh Province, Indonesia. The study was conducted from February to March 2019 in two locations, namely; Lhoknga Beach and Lhok Mata Ie Beach in Aceh Besar District, Aceh Province, Indonesia. The fish sample was caught using a handline hook and casting net. A total of 51 fish were sampled during the study, and it belongs to 8 orders, 11 families, 19 genera, and 25 species. The Labriformes was predominant with six genus and eight species followed by Scorpaeniformes (four species), Perciformes and Blenniiformes, four species respectively. Carangiformes, Mugiliformes, and Gobiiformes with two species, respectively and Anguilliformes with one species. In addition, *Epinephelus* was the predominant genus with four species.

### 1. Introduction

Aceh is one of the provinces that has a big potency on marine resources; this province has 295,370 km<sup>2</sup> of territory sea waters with 2,310 km of the coastal line [1, 2]. Besides, this province also had potency on the inland fishery, for example at least 114 species of freshwater and brackish waters fishes[3-5]; of these 15 species have potency for aquaculture fish target [5]. According to Rudi[6, 7] Aceh province has at least 571 speciesbelong to 53 families of coral fishes. Batubara etal.[8]have reported 77 species of marine fishes from Simeulue Island, while Fadli[9], reported 87 species fromUleeLheue. According to Rudi et al. [10], Aceh waters are situated between the Indian Ocean, Malacca Strait, and the Andaman Sea resulted in combination species from these oceans. However, in general, information of marine fishes in Aceh especially coral fishes was very limited available.

Coral reefs are one of the diverse ecosystems in the world [11], and crucial for fish and other coral biotas [12]. According to Allen and Adrim[13], at least 7,000 species of fish are inhibiting this ecosystem. In Aceh, coral reefs are occurring in several locations[14], for example in Lhoknga and Lhok Mate Ie Beaches in Aceh Besar District. These beaches are very popular as an ecotourism destination for local people because nearby to the city of Banda Aceh[15]. Presently, the condition of coral reefs in these locations has been partly recovered after hitting by the Tsunami in 2004 [16]. Coral reefs in Lhoknga and Lhok Mata Ie Beaches were dominated by *Acropora* sp., *Montipora* sp., *Pocillopora* sp., and *Porites* sp. [6, 10, 17, 18].

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IOP Conf. Series: Earth and Environmental Science 348 (2019) 012104

doi:10.1088/1755-1315/348/1/012104

Presently, there was no information on the coral fish in Lhoknga and Lhok Mata Ie Beaches. This information is very crucial to plant the conservation strategy of marine aquatic resources. This is becausethese beaches are the tourist destination that is very vulnerable to exposure to negative impacts from visitors and gave a further effect on fish life in these regions. Hence, the objective of the present study was to inventory the ichthyofauna in Lhoknga and Lhok Mate Ie Beaches, Aceh Besar District, Indonesia.

#### 2. Material and Methods

#### 2.1 Location and time

The sampling was done during on February 17, 2019 in Lhoknga BeachesandMarch3, 2019 in Lhok Mata IeBeaches. The fish sample was caught using handline hooks and casting net.

# 2.2Sampling procedure and taxonomicidentification

The sampling location was determined purposively at the site that is suspected of being fish and accessible. The handline hooksandcasting were operated randomly in the waters. The representative of collected species was taken and photographed before preserving in 10% formalin then transported to Laboratory of Ichthyology, Syiah Kuala Unversity for further analysis. The fish samples were identified based onKottelatetal.[19],Allen [20], andFishBase.

### 2.3Data analysis

The data were presented in tablesand graphs then analysed descriptively by comparing the data with previous studies and other relevant reports.

## 3. Results and Discussions

A total of 51 fish were sampled during the study. It belongs to 8 orders, 11 families, 19 genera and 25 species (Table 1, Figure 1 and Figure 2). The Labriformes was predominant with eight species followed by Scorpaeniformes (four species), Perciformes and Blenniiformes, fours species respectively. Carangiformes, Mugiliformes, and Gobiiformes with two species, respectively and Anguilliformes with one species. Based on the family Pomacentridae was dominant in genus and species richness; Besides, Serranidae was also higher in species richness (four species).

Table 1 Ordo Family	Genus and species of fishes i	inLhokngaandLhok Mata IeE	Reaches
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Ordo	Family	C	San anima	Location		T-4-1
		Genus	Species	1	2	Total
Labriformes	Pomacentridae	Abudefduf	Abudefduf sordidus	-	1	1
		Amblyglyphidodon	Amblyglyphidodon curacao	1	-	1
		Chrysiptera	Chrysipteraleucopoma	-	2	2
		Stegastes	Stegastesfasciolatus	-	9	9
	Labridae	Thalassoma	Thalassomajansenii	-	1	1
			Halichoeresbiocellatus	1	-	1
		Halichoeres	Halichoeresmarginatus	1	-	1
			Halichoeressolorensis	-	1	1
Perciformes	Chaetodontidae	Chaetodon	Chaetodon vagabundus	-	1	1
	Terapontidae	Terapon	Terapontheraps	-	4	4
	Lutjanidae	Lutjanus	Lutjanuslemniscatus	1	-	1
Anguilliformes	Muraenidae	Echidna	Echidna nebulosa	-	3	3
Blenniiformes	Blenniidae	Entomacrodus	Entomacrodusvermiculatus	-	1	1
		Istiblennius	Istiblenniuslineatus	1	-	1

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doi:10.1088/1755-1315/348/1/012104

		Salarias	Salariasfasciatus	-	2	2
Scorpaeniformes	Serranidae		Epinephelus bilobatus	-	10	10
_		Eminombolys	Epinephelus hexagonatus	1	-	1
		Epinephelus	Epinephelus magniscuttis	1	-	1
			Epinephelus sp.	1	-	1
Carangiformes	Carangidae	Scomberoides	Scomberoides tala	1	-	1
		Gnathanodon	Gnathanodonspeciosus	1	-	1
Mugiliformes	Mugilidae	Liza	Liza argentea	3	-	3
			Liza macrolepis	1	-	1
Gobiiformes	Gobiidae	Periophthalmus	Periophthalmusargentilineatus	1	-	1
		Valenciennea	Valencienneasexguttata	1	-	1
		Total	-			51

Note: 1: Lhoknga, 2: Lhok Mata Ie

In this study, the order Carangidae, Mugilidae,andGobiidae were onlyfoundonthe Lhoknga beach, whileAnguilliformesfound in Lhok Mata Iebeach, whereasspeciesfromthe order Labriformes, Perciformes, Blenniiformes, andScorpaeniformescanbefound in both sampling locations.

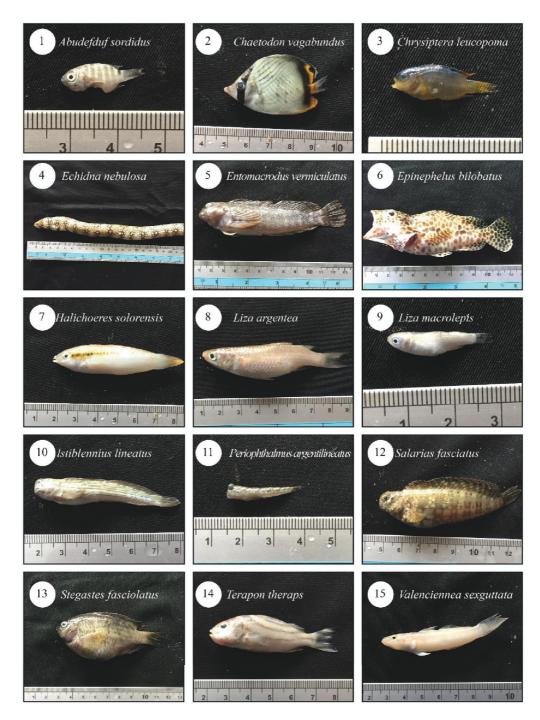
A total of two species i.e. *Chrysipteraleucopoma* and *Chaetodon vagabundus* have been reported by Rudi [6], while 23 species were the new record from these areas. The *Epinephelus* was predominant genus in these locations with four species, namely *E. hexagonatus*, *E. magniscuttis*, *Epinephelus* sp.(Found in Lhoknga beach) and *E. Bilobatus*(Found in Lhok Mata Iebeach)where *E. bilobatus* was predominant within this genus[21], and this species has been listed in the IUCN Redlist. Lutjanidae[22], Muraenidae, Serranidae [23], CarangidaeandMugilidae are a popular species for consumption[22, 23]. Besides, Pomacentridae, Labridae, Chaetodontidae, Terapontidae, Blenniidae, andGobiidae had potency as ornamental fish and promises to be export commodities.

Coral reefs are essential for the fish; this ecosystem provides shelter and food for larvae and fingerling fish [24]. Therefore, most of the fish caught during the sampling is still at fingerling stage. Based on this result, it is strongly recommended that these locations should be determined as the Marine Protected Areas.

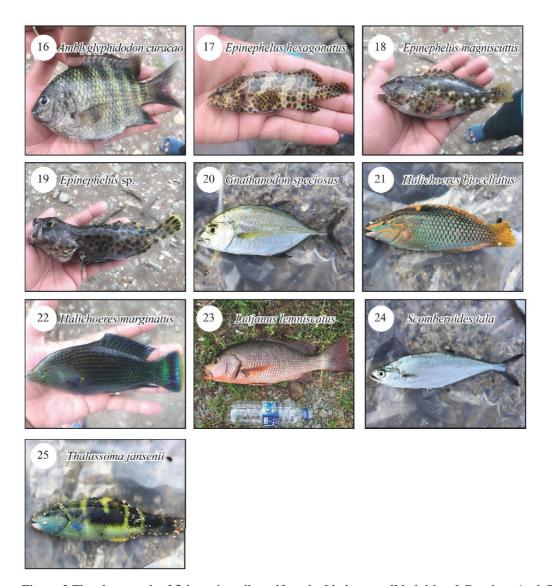
Table 2. The taxonomic composition of fishes of Lhoknga and Lhok Mata IeBeaches

No	Order	∑ Family	Σ	Σ
			Genera	Species
1	Labriformes	2	6	8
2	Perciformes	3	3	3
3	Anguilliformes	1	1	1
4	Blenniiformes	1	3	3
5	Scorpaeniformes	1	1	4
6	Carangiformes	1	2	2
7	Mugiliformes	1	1	2
8	Gobiiformes	1	2	2
	Total	11	19	25

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**Figure 1.**The photograph of fish species collected from the Lhoknga and Lhok Mata Ie Beaches, Aceh Besar, Indonesia



**Figure 2.**The photograph of fishspeciescollectedfromthe Lhoknga and Lhok Mata IeBeaches, Aceh Besar, Indonesia

# 4. Conclusion

A total of 51 fish were sampled during the study, it belongs to 8 orders, 11 families, 19 genera, and 25 species. The pomacentridaeandserranidaewere predominant with four species members followed by blenniidae(threespecies), labridae, mugilidae,carangidaeand gobiidae, twospecies respectively. Chaetodontidae, terapontidae, lutjanidae,andmuraenidaewith one species.

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