Fish Species of fishermen’s catches in Siumat Island, Simeulue Timur Sub-District, Simeulue, Aceh Province, Indonesia

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Abstract. The waters surrounding Siumat Island is a new potential fishing ground in Simeulue Island. However, Information related to fish species in this location is still not widely studied. Therefore, this study aimed to identify fish species caught by fishermen in Siumat Island, Simeulue Timur Sub-District, Aceh Province. The sampling was conducted within 1-20 March 2019. Fish samples were collected from the fish auction location and identified using fish identification books. A total of 243 individuals fish consisting of 54 species and 16 family were identified during the study period. Serranidae was a predominant family with 13 species followed by Lutjanidae and Carangidae with 9 species. From 54 species collected, Turisi Bali (Pristipomoides typus) are the common species found in this location. This research can be used as basic data in making decision for fisheries development in Siumat Island.

1. Introduction

Simeulue is one of the outer and largest islands in Aceh province. [1]. Several studies reveals that this island is highly potential for the Marine fisheries development program. According to Batubara et al. [2] there were 77 species of marine fishes that have economically important found in Simeulue Island waters. To date, information related to the inventory of fish species from Fishermen’s Catches still limited on the main island, while the similar information from the surrounding small islands is still scarce.

Siumat Island is geographically located at 96°37'-57°78 E and 2°64'-82°66 N. Administratively entered into East Simeulue District, Simeulue Regency. Fishing techniques in this area are still mostly traditional. There is only one fisheries landing site in this area. Fish catches are generally collected by collectors to be marketed to the capital district, Sinabang. Until now, an inventory fish species in the siumat island has never been carried out. Therefore, this study aimed to identify fish species caught by fishermen in Siumat Island, Simeulue Timur Sub-District, Simeulue, Aceh Province, Indonesia.
2. Materials and Methods
The study was conducted from 1-20 March 2019 in Siumat island, Simeulue Timur sub District, Simeulue Island (Figure 1). The stages of this research consisted of field observations and administration permit, followed by fish sampling, identification of fish species, and data analysis. Fish sampling was conducted at the fish landing site at 05.00 am and 2.00 pm when the fish auction activity was ongoing. The taxonomic identification of collected fish was performed based on the identification book Kottelat et al. [3], Allen [4], Inger and Kong [5], Vida and Kotai [6], and Ambak et al. [7]. The local name of the fish was identified based on result interviews with local fishermen. The data were presented in tables and graphs.

![Figure 1. Map of Simeulue Island (Red dot indicate the sampling location)](image)

3. Results and Discussion
A total of 243 individuals fish consisting of 54 species and 16 family were identified during the study period (Table 1). The number of fish species found in this study is less than previous studies by Batubara et al. [8]. Nevertheless, the previous research was carried out at eight research stations where many of the fish samples collected from the main island. From 54 fish species that were collected, Turisi Bali (*Pristipomoides typus*) was the predominant species found, as many as 64 individuals.

| No | Family     | No | Species                  | Local Name          | Total (Ind) |
|----|------------|----|--------------------------|---------------------|-------------|
| 1  | Serranidae | 1  | Aethaloperca rogaa       | Babalamar/priok     | 7           |
|    |            | 2  | Cephalopholis argus      | Masjoko             | 2           |
|    |            | 3  | Cephalopholis sonnerati  | Kerapu Kodok       | 8           |
|    |            | 4  | Cephalopholis spiloparaea| Kerapu Merah       | 4           |
|    |            | 5  | Epinephelus sp.          | Entai Manok         | 1           |
|    |            | 6  | Epinephelus faveatus     | Entai Safari       | 4           |
|    |            | 7  | Epinephelus fuscoguttatus| Entai              | 1           |
|    |            | 8  | Epinephelus morrhua      | Entai Minyak       | 1           |
|    |            | 9  | Epinephelus bleekeri     | Entai Manok        | 2           |
|    |            | 10 | Epinephelus malabaricus  | Kerapu Kecap       | 1           |
|    |            | 11 | Plectranthias sp         | Entai Kodok        | 1           |
|    |            | 12 | Variola albimarginata    | Sawai Dalam        | 11          |
|   | Family                | Species                                | Common Name         | Quantity |
|---|-----------------------|----------------------------------------|---------------------|----------|
| 13| Balistidae            | Variola louti                          | Sawai Gosong       | 6        |
| 14| Balistidae            | Balistapus undulatus                   | Jabung Merah        | 4        |
| 15| Balistidae            | Balistoides viridescens                | Jabung              | 4        |
| 16| Melichthys niger      | Pseudobalistes flavimarginatus         | Jabung              | 2        |
| 17| Balistidae            | Pseudobalistes fuscus                  | Kertas              | 1        |
| 18| Balistidae            | Pseudobalistes viridescens             | Jabung              | 1        |
| 19| Belonidae             | Platybelone platyura                   | Todak               | 1        |
| 20| Caesionidae           | Caesio teres                           | Jumbo Lotung        | 15       |
| 21| Caesionidae           | Caesio xanthonota                      | Jumbo               | 2        |
| 22| Carangidae            | Carangoides ferdau                     | Gabui               | 1        |
| 23| Carangidae            | Carangoides orthogrammus               | Bongbong            | 2        |
| 24| Carangidae            | Caranx melampygus                      | Gabui Hijau         | 1        |
| 25| Carangidae            | Decapterus macrosoma                   | Carai               | 2        |
| 26| Carangidae            | Decapterus sp                          | Meong-Meong         | 2        |
| 27| Carangidae            | Elagatis bipinnulata                   | Salam               | 1        |
| 28| Carangidae            | Pantolobus radiatus                    | Babelang            | 2        |
| 29| Carangidae            | Seriola rivoliana                      | Kerong Bali         | 3        |
| 30| Carangidae            | Uraspis uraspi                         | Bongbong            | 1        |
| 31| Chanidae              | Channos channos                        | Agam                | 1        |
| 32| Clupeidae             | Sardinella fimbriata                   | Tamban              | 1        |
| 33| Haemulidae            | Plectorhinchus orientalis              | Kerapu Balabing     | 1        |
| 34| Kyphosidae            | Kyphosus cinerascens                   | Narui               | 2        |
| 35| Lethrinidae           | Gymnocranius microdon                  | Langguran           | 2        |
| 36| Lethrinidae           | Lethrinus sp                           | Bercam              | 1        |
| 37| Lutjanidae            | Aprion virescens                       | Langguran           | 1        |
| 38| Lutjanidae            | Lutjanus decussatus                    | Belang Sarik        | 3        |
| 39| Lutjanidae            | Lutjanus fulvus                        | Kunik               | 3        |
| 40| Lutjanidae            | Lutjanus gibbus                        | Tanduk              | 4        |
| 41| Lutjanidae            | Lutjanus kasmira                       | Remong              | 13       |
| 42| Lutjanidae            | Lutjanus monostigma                    | Pit Pasir           | 2        |
| 43| Lutjanidae            | Paracaesio sordida                     | Jumbo Lotung        | 1        |
| 44| Lutjanidae            | Pristipomoides multidentes             | Turisi Bantal       | 22       |
| 45| Lutjanidae            | Pristipomoides typus                   | Turisi Bali         | 64       |
| 46| Mullidae              | Parupeneus heptacanthus                | Pinang-Pinang       | 3        |
| 47| Priacanthidae         | Priacanthus sagittarius                | Senter              | 1        |
| 48| Scaridae              | Scarius rubroviolaceus                 | Bayam               | 2        |
| 49| Scombridae            | Auxis rochei                           | Sure Timpik         | 13       |
| 50| Scombridae            | Gymnosarda unicolor                    | Sisik Bergigi       | 1        |
| 51| Scombridae            | Katsuwonus pelamis                     | Sure Musang         | 2        |
| 52| Scorpaenidae          | Scorpaenopsis dibulous                 | Nepu                | 1        |
| 53| Scorpaenidae          | Sphyraena barracuda                    | Tangkulo            | 1        |
| 54| Sphyraenidae          | Sphyraena barracuda                    |                     |          |

Serranidae was a predominant family with 13 species (24%) followed by Lutjanidae and Carangidae with 9 species (17%) (Figure 2). According to Konishi, the Order of Perciformes
(including Serranidae, Lutjanidae, and Carangidae) was a commercial fish group that most widely distributed in the Southeast Asian region [9]. The number of families of this order in the Southeast Asia region estimated to 48 families [10]. Serranidae is one of the commercial importance of fishes and has a very high economic value mainly in Hong Kong (reach to US $ 50 /kg) [11].

![Figure 2. Composition of families based on number of species.](image)

The composition of fish caught by fishermen on Siumat Island was identical to the results of similar previous studies in the waters of Simeulu Island [2]. Besides that, Hastuty et al. also reported that the eastern coast of Weh Island also had a similar fish composition as this study [12]. Nevertheless, the number of fish species from family Lutjanidae and Carangidae on Siumat Island was still higher than the eastern coast of Weh Island.

Although Serranidae was a predominant family found, however, based on the number of individual fish, family Lutjanidae most founded compared to other families (Figure 3). The species of fish most collected in this study were Turisi bali (*Pristipomoides typus*), Turisi bantal (*Pristipomoides multidens*) and Jumbo Lotung (*Caesio teres*) which were 64, 22 and 15 individuals respectively. Turisi bali (*Pristipomoides typus*) and Turisi bantal (*Pristipomoides multidens*) were known as commonly fish found in Indonesian waters, for instance, Arafura Sea and the Timor Sea [13], Cendrawasih bay [14] and Bali, Sumbawa and Maluku waters [15].

Based on interviews result, hook and selective gillnet dominated the fishing gear used by Siumat Island fishermen. Therefore there is a possibility of many other species of fish cannot be caught by fishermen. According to Jarwanto et al. the size and type of fishing gear can affect the efficiency of fishing operations, more varied size and type of fishing gear used, causing fish capturing area becomes more extended [16]. Thus the number and species of fish potentially captured will be increased. The distance from the fishing landing site to the fishing ground regularly ranges from 3 to 20 nautical miles.
Figure 3. Composition of families based on total individu of fishes.

4. Conclusion
A total of 243 individuals fish consisting of 54 species and 16 family were identified during the study period. Serranidae was a predominant family with 13 species followed by Lutjanidae and Carangidae with 9 species. From 54 species collected, Turisi Bali (*Pristipomoides typus*) are the common species found in this location. This research can be used as basic data in making decision for fisheries development in Siumat Island.

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