

**STUDY OF DIVERSITY BUBARA FISH (*Carangidae*)  
IN WAEHERU BEACH AMBON ISLAND**

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**ABSTRACT**

Waiheru coastal waters are a coastal area that has diverse ecosystems (mangrove forests, seagrass beds, and other marine biota), so that it has quite high potential for coastal and marine resources (both fish and non-fish). The potential of trevally fish resources in Indonesian waters needs to be known so that it can be developed as an asset in marine tourism activities. The trevally fish is a type of surface (pelagic) fish. This fish is very popular with the community and lives in shallow coastal waters, corals and rocks. The aim of this study was to determine the diversity of trevally fish in the coastal waters of Waeheru, the inner part of Ambon Bay. The research was conducted in August 2013. Sample identification was carried out at UPT Laboratory, Ambon Marine Biota Conservation Center. Observational type research is by making direct observations in the field. Sampling stations consist of 3 stations, repeated 3 times at each station. From the results of the study obtained 11 species of Bubara fish (*Carangidae*) and 66 individuals. The highest diversity index value was found at station II, namely, 941 and the lowest was found at station III, namely 1,435. The diversity of fish species that is more commonly found is the *Caranx Sexfasciatus* fish which can be found at each station. The results of water quality measurements in the coastal waters of Waeheru still show a good range for fish life in these waters.

**Keywords:** *carangidae*, *diversity*, *fish*.

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**INTRODUCTION**

Ambon Bay is an estuary waters divided in two by a narrow and shallow threshold. The threshold has a maximum depth of about 15 m which is located between Galala and Poka. The eastern part is known as a shallow inner bay with a depth of about 40 m. Ambon Bay as a whole has a salinity between 32-35 ‰ and a surface temperature between 26-30°C. The rainy season coincides with the blowing of the southeast monsoon which occurs between March and September with relatively weak strength in Ambon Bay.

The dry season coincides with the southwest monsoon blowing from September to March. Between the two seasons there is a transitional season which usually occurs in April and November (Sutomo, 1983). Waeheru coastal waters are a coastal area that has diverse ecosystems (mangrove forests, seagrass beds, and other biota). So that the potential for coastal and marine resources (both fish and non-fish) is quite high. Every ecosystem in the coastal and coastal areas has a very important ecological role, including as a place of care, shelter, foraging, shelter and or migration of various fish species (Erfteemeijer, 1993). Thus, the

sustainability of each ecosystem greatly affects the level of diversity and abundance of fish species in an area. An understanding of the condition of ecosystems in coastal and coastal areas and the availability of complete data on the diversity of biota (especially fish) in an area will be able to become a reference for the management of coastal areas. and beaches, especially in the field of marine fisheries. The people in Ambon call Kuwe Fish as carangidae (carangidae) which are marine biota as an important component of aquatic ecosystems. The presence of carrion fish (carangidae) in this area. The aim of the study was to determine the diversity of carrion fish (carangidae) in the coastal waters of Waeheru Inner Ambon Bay.

## METHOD

This research is an observation type in the laboratory UPT Balai Konservasi Biota Laut Ambon.

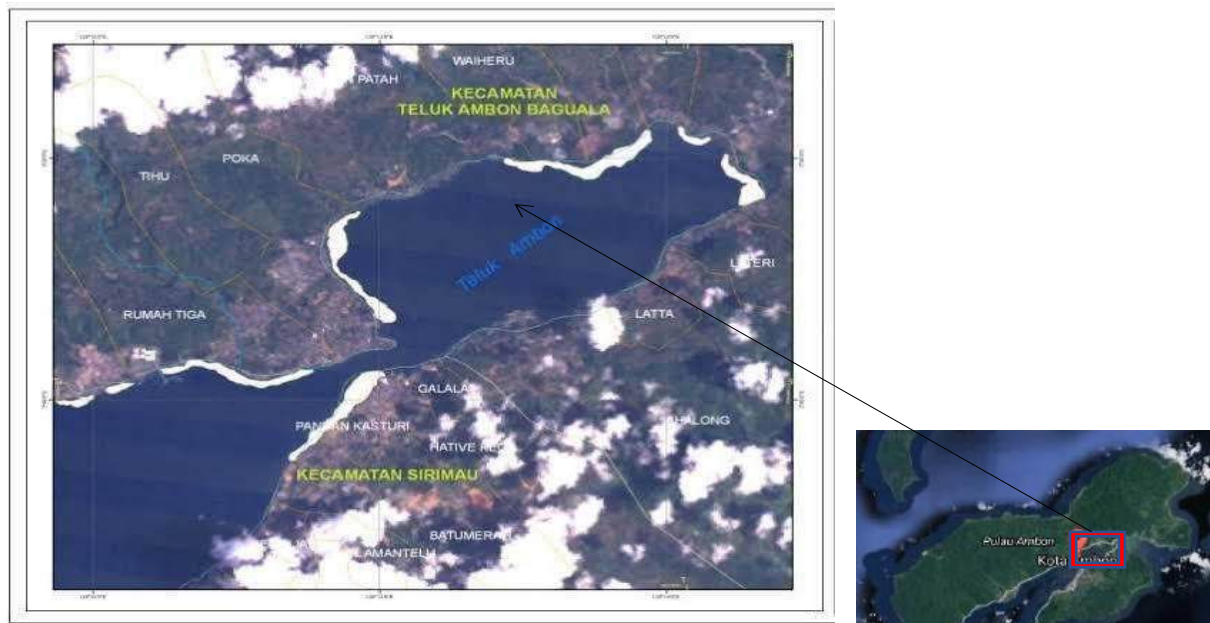


Figure 1. Research Locations of Bubara Fish (Carangidae) in Waeheru Coastal Waters.

## Materials

Boat, thermometer, GPS, pH-meter, salinometer, digital camera, beach net (beach seine), measuring tape, and stationery. The materials used in this study were 10% formalin in plastic bags (5kg) and rubber bands.

## Procedures

Fish sampling was carried out using a beach seine which had a net mouth opening of 35 m (including the wings) and a mesh size of 0.5 cm in the codend. The depth of the water where the nets are withdrawn varies from 60 cm to one meter, depending on the conditions of the location. Fish samples were taken with three repetitions at each station. Operation of beach nets is carried out by 3-4 people in shallow sloping coastal waters by pulling the net towards the shore. Each caught fish species is separated by type and family. Several fish samples were then preserved using 10% formalin solution for further identification purposes and carried out at the UPT Laboratory of the Ambon Marine Biota Conservation Center.

## Data analysis

Diversity values can be determined based on the Shannon-Wiener index

## DISCUSSION RESULT

The results of the study on the diversity of giant trevally fish (Carangidae) can be seen in Table 1 below.

Table 1. Types of Bubara Fish and Number of Individuals (ind./station)

No	Species	Observation Station			Mean
		I	II	III	
1.	<i>Caranx sexfasciatus</i>	9	6	2	17
2.	<i>Megalaspis cordyla</i>	1	-	5	6
3.	<i>Gnathanodon spesiosus</i>	4	2	-	6
4.	<i>Selopsis nemapterus</i>	6	1	4	11
5.	<i>Caranx melamphygus</i>	2	3	-	5
6.	<i>Scomberoides commersonianus</i>	-	-	1	1
7.	<i>Caranx ignobilis</i>	-	4	-	4
8.	<i>Seriolinanigrofasciatus</i>	1	2	-	3
9.	<i>Scomberoides lysan</i>	-	1	7	8
10	<i>Carangoides plagiotaenia</i>	2	-	-	2
11	<i>Caranx para</i>	-	3	-	3
Number of Individuals		25	22	19	66

Table 2. Measurement results of the range of water quality parameter values.

No	Parameter	Research Station			Optimal Environment
		I	II	III	
1.	Temperature (°C)	27.4	27.0	26.5	25 - 32
2.	Salinity (‰)	27.6	28.0	27.3	30 - 35
3.	pH	7.4	7.0	6.5	6.5 - 7
4.	Dissolved oxygen (mg/l)	3.0	3.2	3.5	5 - 6

At stations I, II, and III, two different fish species were found, such as *Caranx sexfasciatus* and *Selopsis nemapterus*. This shows that the environmental conditions that are suitable for breeding and the high tolerance for changes in environmental conditions are possessed by both types of fish species. According to (Kordi, 2010) stated that the type of *Caranx Sexfasciatus* is a type of fish that grows fast. The growth rate in a day can reach 1.7%, *Caranx Sexfasciatus* also has a fairly low feed conversion. So that the two types of fish can be at the three existing stations. The number of individuals caught at station 1 was 25 and the most commonly found was the *Caranx sexfasciatus* fish with a total catch of 9 individuals, so it had the highest percentage of species composition. In addition, these fish were also found at station II with 6 individuals and station III with 2 individuals. This shows food and environmental conditions that support and predatory properties so that *Caranc sexfasciatus* can be at station I, station II and station III (Mudjiono, 2008).

The results of the study at station II the number of individuals caught was 28 individuals and the most caught were the *Caranx sexfasciatus* 6 individuals and the *Caranx ignobilis* fish species with 4 individuals. number of individuals 1 tail. This is because the *Selopsis nemapterus* fish is often in environmental conditions that have a lot of food so that the *Selopsis nemapterus* fish often moves from place to place to find food according to the existing environmental conditions. According to (Peristiwady, 2006) explained that the presence of fish is not only influenced by the type of food and how to eat, but also the environment and the place where the biota lives or where the biota are located.

Results of the research at station III showed that the number of individuals caught was 16 individuals and the most commonly caught was the *Scomberoides lysan* fish with a total of 7 individuals. Most of these fish are caught at station III due to their high tolerance for environmental changes and the nature of fish which are generally in schools and are able to live in fairly dense conditions. According to (Mudjiono, 2008) explained that this fish has a great tolerance for salt/salinity levels. This type of fish has a relatively faster growth speed, also has a fairly high feed conversion. Based on the number of fish caught from the three observation stations, it appears that this type is the most. Most of the fish caught were *Caranx sexfasciatus* with a total of 17 individuals. This was because the *Caranx sexfasciatus* preferred to be in calm or unwavering waters, and were able to adapt to the environmental conditions they occupied. Based on Table

2, it can be seen that the temperature in the coastal waters of Waeheru at station I ranges from 27.4, for station II it ranges from 27.0 and for station III it ranges from 26.5. This temperature is still in accordance with seawater temperatures in general. According to (Ilahude) the temperature in tropical sea waters ranges from 25.6-32.30C, and between 20 - 30<sup>0</sup>C (Nybaken, 1992). The metabolic rate of fish and other aquatic animals increases directly with increasing temperature. Increased metabolism also means increased oxygen demand.

## CONCLUSION

The diversity of trevally fish in the coastal waters of Waeheru, the inner part of Ambon Bay, is still in the very low category, because it is heavily influenced by various physical, chemical, and environmental factors.

## REFERENCES

- Sutomo 1983. Zooplankton around the inner Ambon Bay area. VI National Congress of Biology. Surabaya.
- Erftemeijer, P.L.A. & G.R. Allen. 1993. Fish fauna of seagrass beds in South Sulawesi, Indonesia. Res. West. Aust. Mus 16 (2): 269-277.
- Masuda, H and G.R. Allen 1987. Sea fishes of the world (Indo-pacific region). Yama-Kei Publisher Co. Tokyo, Japan. : 528 pp.
- Munro, I.S.R. 1967. The fishes of New Guinea. Dept. of Agriculture, Stock and Fisheries, Port Moresby, New Guinea: 651 pp.
- Fachrul, M. F. 2007. Bioecological Sampling Method. Literary Earth. Jakarta.
- Kordi, K. M. G. H. 2010. Harvesting Profits from Bobara Fish Aquabusiness. Andy. Yogyakarta.
- Mudjiono. 2008. Environmental Conditions of the Ambon Bay Coastal Area. Indonesian Marine Oceanology Research. Book I. Biology, Geology, Environment and Oceanography. Research and Development Center for Oceanology-LIPI.
- Musimdy, T. 2006. Economically important marine fish in Indonesia: Identification Guidelines. National Institute of Oceanology. Indonesian Institute of Sciences. Jakarta
- Ilahude, A and Lisaputra. 1980. Normal Distribution of Hydrological Parameters in Jakarta Bay. Jakarta Bay Book, Study of Physics, Chemistry and Biology. National Institute of Oceanology. Indonesian Institute of Sciences. Jakarta
- Nybakken, J. W. 1992. Marine Biology. An Ecological Approach. PT. Gramedia Pustaka Utama. Jakarta.