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**DIVERSITY OF SPECIES FISH IN THE ECOTOURISM AREA MANGROVE BEACH IN  
INDAH KAPUK JAKARTA**

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**ABSTRACT**

This study aims to analyze the diversity of fish species found in the Mangrove Ecotourism area in Pantai Indah Kapuk. This research was conducted 2 times, namely on May 26 -June 12 2020. Fish sampling in this study used a data survey method. The results obtained were 39 fish which were classified into 8 fish species and belonged to 6 families. The goldfish species (*Cyprinus carpio*) belonging to the Cyprinidae family is the species with the highest number found in the Pantai Indah Kapuk Mangrove Ecotourism area. From observations made at 2 stations, 9 goldfish (*Cyprinus carpio*) were obtained. Apart from carp (*Cyprinus carpio*), the most common species found in the 2 research stations was catfish (*Clarias gariepinus*) with a total of 7, followed by mujaer fish (*Oreochromis mossambicus*) and swamp sedge fish (*Trichogaster trichopterus*), each of which found as many as 5 tails. Then other species have a number of individuals that vary between 3-4 tails. Based on the results of research conducted at 2 stations, the Fish Species Diversity index in the Mangrove Ecotourism Area in Pantai Indah Kapuk is in the low category with a value of 1.9.

**Keywords:** *fish, mangroves, diversity*

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**INTRODUCTION**

One type of special interest tourism that has the potential to be developed in the Jakarta area is ecotourism, especially ecotourism that is developed in forest areas. The emergence of this ecotourism trend has developed in the DKI Jakarta area, especially the northern coastal area of Jakarta. In these coastal areas there is a population of mangrove forest vegetation or mangroves. Mangroves in the northern part of Jakarta play a major role in preventing coastal abrasion, balancing water and air quality, and preventing seawater intrusion (Ganida, 2016 in Febriyanto, O., 2020). Mangrove ecosystems also act as natural habitats for various types of aquatic biota and terrestrial organisms (Kusmana, 1996; Kathiresan and Bingham, 2001), both as feeding grounds, nursery grounds and as breeding grounds. ) (Nybakken, 1992; Bengen 2004; Anwar and Gunawan 2006; Giesen et al., 2006). The function of the mangrove ecosystem as a feeding ground, spawning ground, and nursery ground will make fish congregate and become a suitable habitat for fish (Redjeki, 2013). The fish found in the mangrove ecosystem, either living or just transiting to spawn and raise their young, will add to the biodiversity of the ecosystem (Puteri, D., Hasan S., Ahmad M., 2017).

Species diversity and wide distribution of fish also play an important role in the ecosystem (Kottelat et al., 1993). Fish play a role in maintaining the balance of the food chain cycle in the waters (Kottelat et al., 1993) and can also be used as a bioindicator of water quality (Hendrata, 2004), but until now there has been

no report on the diversity of fish species found in the Mangrove Ecotourism area. Pantai Indah Kapuk, even though this area has quite a lot of potential fish resources. Therefore, this study aims to determine the diversity of fish species found in the Pantai Indah Kapuk Mangrove Ecotourism area.

## METHODE

This research was conducted in the Pantai Indah Kapuk Mangrove Ecotourism area. The time for carrying out the research was May/26/2020 and June/12/2020. The tools used in this study were writing instruments used to take notes when conducting interviews with anglers. The research method used to determine the diversity of fish species found in the Pantai Indah Kapuk Mangrove Ecotourism area is a quantitative research method, namely the data survey method. This data collection technique was carried out by direct observation to the field and conducting interviews with anglers in the Pantai Indah Kapuk Mangrove Ecotourism area. The sampling technique uses a systematic random method technique, namely determining the station (location) of observation by dividing it based on the desired number of stations. In this study, the research area will be divided into 2 stations with a distance of  $\pm 200$  m per station. At each station interviews will be conducted with anglers regarding the fish species that have been caught and calculate the number of each type of fish that has been caught by each angler.

## DISCUSSION RESULT

Based on the research results obtained by conducting interviews with anglers in the Pantai Indah Kapuk Mangrove Ecotourism area, 8 species of freshwater fish were found which were classified into 6 families. The number of fish obtained in this study were 39 individuals. The goldfish species (*Cyprinus carpio*) belonging to the Cyprinidae family is the species with the highest number found in the Pantai Indah Kapuk Mangrove Ecotourism area. From observations made at 2 stations, 9 goldfish (*Cyprinus carpio*) were obtained from the catches of anglers. According to Kottelat et al. (1993) in Hamidah (2004) the large number of members of the Cyprinidae family were found, because this family is the largest freshwater fish in every place in the world, except Australia, Madagascar, New Zealand and South America.

Apart from carp (*Cyprinus carpio*), the most common species found in the 2 research stations was catfish (*Clarias gariepinus*) with a total of 7, followed by mujaer fish (*Oreochromis mossambicus*) and swamp sedge fish (*Trichogaster trichopterus*), each of which found as many as 5 tails. Then other species have a number of individuals that vary between 3-4 tails.

Table 1. Fish Species Found at Each Station

No	Family	Species	Local name	Jumlah Individu		Total Individu
				26 Mei 2020 (Stasiun 1)	12 Juni 2020 (Stasiun 2)	
1.	<i>Cyprinidae</i>	<i>Cyprinus carpio</i>	Ikan Mas	5	4	9
2.	<i>Cichlidae</i>	<i>Oreochromis mossambicus</i>	Ikan Mujaer	3	2	5
3.	<i>Cichlidae</i>	<i>Oreochromis niloticus</i>	Ikan Nila	3	1	4
4.	<i>Pangasiidae</i>	<i>P. hypophthalmus</i>	Ikan Patin	1	2	3
5.	<i>Clariidae</i>	<i>Clarias gariepinus</i>	Ikan Lele	4	3	7
6.	<i>Channidae</i>	<i>C. striata</i>	Ikan Gabus	1	2	3
7.	<i>Osphronemidae</i>	<i>Osphronemus goramy</i>	Ikan Gurame	2	1	3
8.	<i>Osphronemidae</i>	<i>Trichogaster trichopterus</i>	Ikan Sepat Rawa	3	2	5
Total				22	17	39

Table 2. Diversity Index

Diversity Value	Category
$H' \leq 2,0$	Low
$2,0 < H' \leq 3,0$	currently
$H' \geq 3,0$	Height

Table 3. Fish species diversity index at each station

Station	Diversity Value	Category
1	1,96	Low
2	1,98	Low

The diversity of fish species in an area is an illustration of the richness of fish in that area. Little or much diversity of species/types can be seen from the diversity index ( $H'$ ). Diversity ( $H'$ ) has the greatest value if all individuals come from different species (Odum, 1993 in Samitra, D., Zico F.R., 2018). The diversity index can be calculated using the Shannon-Wiener formula (Ludwing, et al., 1988).

Based on the results of the research that has been done, the index value of fish diversity at all stations in the Pantai Indah Kapuk Mangrove Forest Ecotourism area is 1.9. Based on the diversity index criteria, observation stations 1 and 2 are in the low category. The high or low value of the diversity index depends on the variation in the number of individuals of each fish species caught. The greater the number of fish species and the variation in the number of individuals of each species, the greater the level of diversity of fish in an aquatic ecosystem, and vice versa. The smaller the number of fish species and the variation in the number of individuals of each species, the lower the diversity of fish in an aquatic ecosystem (Sriwidodo et al., 2013). According to Indriani et al. (2009), the diversity of fish species is also closely related to the condition of mangrove vegetation, namely the higher the intensity of disturbance in the mangrove area, the lower the number of fish species owned.

## CONCLUSION

Based on the results and discussion, it can be concluded that in the Pantai Indah Kapuk Mangrove Ecotourism area, 8 species of freshwater fish were found which were classified into 6 families. The goldfish species (*Cyprinus carpio*) belonging to the Cyprinidae family is the species with the highest number found in the Pantai Indah Kapuk Mangrove Ecotourism area. Then, the index value of fish diversity at all stations in the Pantai Indah Kapuk Mangrove Forest Ecotourism area is 1.9. It can be concluded that the value of diversity of fish species in the Pantai Indah Kapuk Mangrove Forest Ecotourism area is in the low category.

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