



Identification of Crabs in Mangrove Area Pangkal Babu, Tungkal 1 Village, Tanjung Jabung Barat

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Abstract. Mangrove areas have ecosystem types with unique characteristics. The mangrove ecosystem area in Pangkal Babu Tanjung Jabung Barat is in the process of being developed into an ecotourism area based on the environment, so that it can potentially have an impact on the environment, including the threat of damage to existing natural resources and for the survival of one of the fauna species that make up the mangrove ecosystem, for example crabs. The purpose of this study was to determine the types of crabs caught in the mangrove area of Pangkal Babu, Tungkal 1 Village, Tanjung Jabung Barat. In this method, This research is an exploratory descriptive research. The sample collection was carried out using an exploratory method with sampling using purposive sampling technique. The collected samples will be identified in the laboratory for analysis related to the diversity of the Order Decapoda crustaceans in the mangrove ecosystem area of Pangkal Babu, Tungkal Village 1. Based on the results of the research from the samples, the species found were included in 3 families, namely Portunidae (3 species), Cymononidae (1 species) and Potamidae (1 species). Species belonging to the Portunidae family are *Scylla paramamosain*, *Thranita crenata* and *Carcinus maenas*. Meanwhile, the Cymononidae family is *Cymonomus soela*, and the Potamidae family is *Nanhaipotamon Guangdongense*.

Keywords: Mangrove Area · Identification · Crab

1 Introduction

Pangkal Babu is a coastal area that has a mangrove forest ecosystem that is rich in natural resources in Tungkal Ilir District. In addition, the mangrove area in Pangkal Babu is in the process of being developed into an ecotourism area based on the environment, so that it can potentially have an impact on the environment, including the threat of damage to existing natural resources and for the survival of one type of fauna that makes up the mangrove ecosystem.

The mangrove forest ecosystem is one of the ecosystems that has high productivity compared to other ecosystems with high decomposition of organic matter, and makes it an ecological link that is very important for the life of living things in the surrounding waters [3]. According to Nagelkerken et al. [6] and Yulianti and Sofiana [11], The mangrove ecosystem is also a coastal fisheries habitat with a high diversity of biota species, such as crustaceans, fish, mollusks and other aquatic fauna.

One of the habitats in the mangrove ecosystem is crabs. Crabs are one of the marine organisms belonging to the crustacean group [7]. According to Prianto [10], crabs are arthropods found in land, fresh water and sea water with various sizes and are one of the key species or keystone species that have a very important role in maintaining ecological balance. Crabs have an important role in ecosystems, including converting nutrients and enhancing mineralization, increasing the distribution of oxygen in the soil, helping the carbon life cycle, and providing natural food for various types of aquatic biota. Poupin and Juncker [8], stated that seawater crabs have diverse habitats, namely forest and supratidal areas, brackish water environment areas, sandy beach areas, rocky coastal areas, coral reefs, and mangroves. Certain types of crabs are usually found in mangrove areas such as the Ocypodidae, Sesarmidae, Macrothalmidae, Porcellanidae, Portunidae, Varunidae, and Grapsidae tribes [9].

Research on Identification of Crab Species caught in the Pangkal Babu mangrove area aims to determine the types of crabs caught in the Pangkal Babu mangrove area, Tungkal 1 Village, Tanjung Jabung Barat.

2 Research Methods

This research is an exploratory descriptive research. The sample collection was carried out using an exploratory method with sampling using purposive sampling technique. Sampling with purposive sampling technique was carried out to take data sources with the aim or consideration that the sampling location represented the conditions of the surrounding environment, which included community settlements, and areas traversed by ships. The collected samples will be identified in the laboratory for analysis related to the diversity of the Order Decapoda crustaceans in the mangrove ecosystem area of Pangkal Babu, Tungkal Village 1. Identification is carried out by taking into account the morphological characters of the crabs, namely carapace, claws, abdomen and legs.

2.1 Station Point Determination

Sampling was carried out at two stations, with each consideration representing the conditions of the Pangkal Babu mangrove ecosystem. Station I is a location that represents the closest part of the settlement of Pangkal Babu residents, Tungkal Village 1. This station was chosen with several factors, ranging from household waste disposal such as daily necessities, toilets and others. Station II is an open water location towards the sea which is a transportation route for ships that pass every day.

2.2 Field Sampling

A. Sampling using Togok fishing gear

Togok has a length of 12 m and a width of 5 m, and a mesh diameter of 2 cm. Togok is installed by utilizing the tides of sea water. Sampling starts from 08.00–10.00 WIB or 14.00–16.00 WIB. Sampling was carried out with fishermen using boats. At low tide, the togok is installed with the front side of the net fixed with wood. Waited about an hour and a half. When the water began to recede the net was opened and then the net was lifted and then the catch was collected, the number of samples was calculated in 1 treatment and grouped according to the same type. Then, the samples were documented and prepared.

B. Sampling using a Gillnet Catcher

The gill nets are white nets made of tangi threads with a length of 20 m and a width of 2.5 m, and a mesh diameter of 5 cm with a weight at the bottom. At the time of installation, the gill nets are flagged as a sign to other fishermen that the net is under the sea. Sampling started from 08.00–13.00 WIB. Sampling was carried out with fishermen using pompong (small boats using engines). Waited for about an hour and a half, then the net was lifted and then the catch was collected, the number of samples was calculated in 1 treatment and grouped according to the same type. Then, the samples were documented and prepared.

3 Results and Discussion

The types of species that were caught at each station are as follows (Tables 1 and 2).




Based on the catches that have been carried out, 3 families were found, namely Portunidae (3 species), Cymononidae (1 species) and Potamidae (1 species). Species included in the family Portunidae are *Scylla paramamosain* with a total catch of 11 individuals, *Thranita crenata* with a total catch of 2 individuals and *Carcinus maenas* with a total catch of 1 individual. Meanwhile, belonging to the family Cymononidae, namely *Cymonomus soela* with a total catch of 3 individuals, and the family Potamidae, namely *Nanhaipotamon guangdongense* with a total catch of 1 individual.

Table 1. Crab catches for each station

No	Spesies	Famili	ST. I	ST. II	Amount
			Togok	gill nets	
1	<i>Scylla Paramamosain</i>	Portunidae	2	9	11
2	<i>Thranita crenata</i>		0	2	2
3	<i>Carcinus maenas</i>		0	1	1
4	<i>Cymonomus soela</i>	Cymononidae	0	3	3
5	<i>Nanhaipotamon guangdongense</i>	Potamidae	1	0	1



The results of the identification of crab samples obtained were 5 types of crabs from 3 families. According to [1], in seen from the spines on the carpus and the teeth on the frontal margin are part of the morphology mud crab (*Scylla* spp.) which is a determinant of *Scylla* species. The *Scylla* grouping begins with the final anterolateral tooth similar to the rest of the teeth in this area. Then it begins to divide in the area of the carpus of the cheliped, where first, the carpus of the cheliped consists of only one reducing spine on the outer surface, and the claws are yellow and orange. Second, the carpus of the cheliped consists of two sharp spines on its outer surface, and the claws are green or purple in color. The first carpal spine is split into two, visible from the frontal part of the carapace. If the frontal part consists of blunt teeth and the claws have sharp spines, so also the carpus has two sharp spines. The carapace is usually dark green or blackish

Table 2. Types of crabs caught

No	Picture	Description
1	 <p><i>Scylla Paramamosain</i> (Kepiting bakau)</p>	<p>It has a brownish green color on the carapace and green on the swimming legs, on the Chela the tip is reddish yellow. Has sharp spines on the Corpus. This crab is usually consumed by local people with habitats around river mouths to the waters towards the sea.</p>
2	 <p><i>Thranita crenata</i> (Kepiting Laut)</p>	<p>Has a greenish-brown color on the carapace, the underside of the body is pale white. At the end of the Chela is brownish red. The swimming legs are brownish yellow. Its habitat is in the coastal area to the sea.</p>
3	 <p><i>Carcinus maenas</i> (Kepiting batu)</p>	<p>Has a small size ranging from 3–5 cm. Carapace dark brown. Has 2 claws (Chela) and swimming legs. There are thorns on the Corpus. Its habitat is in the coastal area to the sea.</p>

(continued)

Table 2. (continued)

No	Picture	Description
4	 <p data-bbox="197 504 373 557"><i>Cymonomus soela</i> (Kepiting Pantai)</p>	<p data-bbox="558 257 1060 451">Has a body size ranging from 3–7 cm. This type of crab at first glance looks like a spider. It has claws that are not as big as crabs in general. Has long swimming legs. Has a yellow color on the top and bottom carapace is black. At the end of the swimming legs are brownish red. Its habitat is in the coastal area to the sea.</p>
5	 <p data-bbox="197 804 510 857"><i>Nanhaipotamon guangdongense</i> (Ketam keripik)</p>	<p data-bbox="558 575 1044 707">Has a small body size ranging from 3–5 cm. Body color dark brown. Has a smooth carapace. Has a dactylus and swimming legs that are flattened and have hair on the edges. Habitat in shallow waters and river mouths.</p>

brown. The claws and legs are brownish-purple in color, irregular patterns, then these characteristics are the type of *S. tranquebarica*. In male pleopods there is a marble pattern on the claws [1].

Scylla paramamosain has 6 spines between the eyes that are sharp triangular and pronounced spines on the propodus, while on the carpus the spines appear reduced (small). This is in accordance with [4], who stated that the characteristic of *S. paramamosain* is to have a pair of spines that are not very clearly visible on the propodus, spines on ICS and OCS are also reduced.

From the catch, it was also found that *Thranita crenata* has the characteristics of a hexagonal-shaped carapace, the dorsal surface of the carapace is smooth, but is covered by short velvety setae; four sharp spines behind the outer corner of the orbit, the base of the fourth spine has an incline that extends to the dorsal center of the carapace; carapace face with six lobes with the middle lobe wider than the others, behind the carapace face there is an elongated carving forming two lobes separated by a shallow groove;. On the legs, merus is equipped with three sharp spines. A pair of unequally sized, merus claws equipped with three pointed spines on the anterior edge and serrations on the posterior edge; carpus with three sharp spines and one blunt spine on the outer surface, one sharp spine at the joint with the merus; claw palm with three sharp spines (one at the tip and two in the middle) and one blunt spine on the ventral surface, on the outer surface there is a line extending from the base of the palm to the tip of the pollex; the cutting edge

of the pollex is equipped with six molars in the center of the back. Habitat in shallow waters in sublittoral areas and close to river mouths [5].

In addition, *Carcinus maenas*, which is included in the Portunidae family, has a small body size ranging from 3–5 cm. Carapace dark brown. Has 2 claws (Chela) and swimming legs. There are thorns on the Corpus. According to [7], the posterior margin of the carapace is almost straight. Cheliped a little off balance. Has walking legs 1–4 smooth, and somewhat stocky. Its habitat is in the estuary area, mud flats, and rocks.

The species *Cymonomus soela* belongs to the family Cymononidae. Has a body size ranging from 3–7 cm. This type of crab at first glance looks like a spider. It has claws that are not as big as crabs in general. Has long swimming legs. Has a yellow color on the top and bottom carapace is black. At the end of the swimming legs are brownish red. According to [7], the eye shaft fuses with the carapace. Its habitat is in the coastal area to the sea.

Nanhaipotamon guangdongense belongs to the family Potamidae. Has a small body size ranging from 3–5 cm. Body color dark brown. Has a smooth carapace. Has a dactylus and swimming legs that are flattened and have hair on the edges. According to [2], this species has highly variable morphological characteristics within the same population with a combination of brown, orange and white c.

4 Conclusion

Based on the results of the research from the samples, the species found were included in 3 families, namely Portunidae (3 species), Cymononidae (1 species) and Potamidae (1 species). Species belonging to the Portunidae family are *Scylla paramamosain*, *Thranita crenata* and *Carcinus maenas*. Meanwhile, the Cymononidae family is *Cymonomus soela*, and the Potamidae family is *Nanhaipotamon Guangdongense*.

Suggestion

Further research is needed on other types of crustaceans and species diversity in the Pangkal Babu Mangrove Area, Tungkal 1 Tanjung Jabung Barat Village.

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