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Diversity of Crabs (Brachyura) and Association of Crabs (Brachyura) with Mangroves in Gerupuk Coast of Central Lombok

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Abstract: Mangroves have a function as shelters, nurturing places, spawning grounds, and foraging places, and can be a habitat for wild animals. Brachyura is one of the mangrove biota associations whose lives are influenced by the existence of mangroves. Therefore, the purpose of this study is to determine the diversity of crabs (Brachyura) and the relationship between mangrove density and crab abundance (Brachyura) in the coastal mangrove area of Gerupuk Beach Central Lombok. The crabs (Brachyura) sampled were Brachyura contained in the observation plot, Brachyura on the surface of the substrate was taken by hand, while those in the hole were taken with the help of a shovel. The data obtained were then analyzed with the Pearson diversity index, association, and correlation coefficient. Furthermore, a simple linear regression analysis was carried out with the independent variable (x) mangrove density and the dependent variable (y) crab abundance (Brachyura). The results of this study obtained 7 species of Brachyura consisting of 6 species of the family Ocypodidae and 1 species of the family Grapsidae. The Brachyura diversity index at the research station was moderate to high with values between 1.7-4.0. Furthermore, there are 3 species of crabs (Brachyura) associated with 2 species of mangroves out of 7 species of Brachyura found. The linear regression equation y= 0.2619x + 0.0206 with a pearson correlation coefficient value (r) of 0.79 shows a strong relationship between the variable independek (x) mangrove density and the dependent variable (y) Brachyura abundance. The conclusion of this study is that Brachyura diversity in the Gerupuk Beach mangrove area is included in the medium category and there is a significant relationship between mangrove density and Brachyura abundance.

Keywords: Association; Crabs (Brachyura); Diversity

Introduction

Crabs (Brachyura) are a group of animals from the phylum Arthropoda, class Malacostraca, order Decapoda, and infraordo Brachyura (Eprilurahman et al., 2015). The life cycle of crabs (Brachyura) consists of 4 stages, namely: (1) zoea (larvae), (2) megalopa, (3) juvenile (young crabs), and (4) adult crabs (Siahainenia, 2009). Meanwhile, crabs (Brachyura) feed at night, and eat using their claws (chelipeds) (Kordi and Ghufran, 2010). Furthermore, the food types of crabs (Brachyura) are algae, shrimp, and other animals. As well as crabs (Brachyura) in the form of larvae whose food is plankton (Saparinto & Hidayat, 2010).

Brachyura morphology consists of 3 parts, namely the head (chepalo), thorax, and abdomen (Rusyana, 2013). Crab morphology has diversity, but all crabs (Brachyura) have capids (chelipeds) and 4 walking legs (pleopods) (Prianto, 2007). For example, the genus Uca and Scylla are commonly found in mangrove ecosystems. The crab (Brachyura) genus Uca has differences in the shape of its claws (chelipeds), where the claws (chelipeds) of male crabs are asymmetrical, with one of the claws (cheliped) being larger and the other one very small (Wulandari et al., 2013). In addition, there are 7 families of crabs (Brachyura) commonly found in mangroves, namely crabs (Brachyura) from the

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families Ocypodidae, Sesarmidae, Grapsidae, Macropthalmidae, Portunidae, Parathelphusidae, and Varunidae (Anggraeni et al., 2015). For example, the discovery of crab species (Brachyura) living in the Segara Anakan mangrove area was 1,473 individuals with the highest number of species coming from the Ocypodidae and Sesarmidae families (Zalindri & Sastranegara, 2017).

Mangrove ecosystems are intertidal ecosystems where there is a strong interaction between marine, brackish, riverine and terrestrial waters. This interaction makes the mangrove ecosystem diverse in flora and fauna. Mangroves live in tropical and subtropical regions, especially in latitudes between 25°N and 25°S. Mangroves associate with other organisms such as fungi, microbes, algae, and various fauna and flora to form mangrove communities (Martuti, 2013). Furthermore, there will be interactions between mangrove communities with abiotic and biotic factors to form mangrove ecosystems. In addition, mangroves are considered one of the most typical ecologies of halophytic plants because they are in the zone between land and sea (Pillai & Harilal, 2015). Furthermore, the pH tolerance limit for mangrove growth ranges from 6-8.5 (Wijayanti, 2009). Meanwhile, the optimal temperature of the mangrove ecosystem ranges from 28-30^{o}C. The temperature will affect the production of mangrove leaves, the optimal temperature for leaf production of Rhizophora sp., Ceriops sp. and Lumnitzera sp. is 26-28^{o}C, while Avicennia sp. grows optimally at 18-20^{o}C (Alwidakso et al., 2014).

Crabs (Brachyura) utilize mangrove substrates containing mud to mate, as well as a place to release the carapace or molt (Sugiarti & Gita, 2016). In mangroves, Brachyura crabs feed on leaf litter and organic matter produced by mangroves (Saher and Qureshi, 2011). Thus, one of the factors for the diverse number of crabs (Brachyura) in mangroves is the availability of food derived from the mangrove leaf litter (Soviana, 2004). In addition, the creation of the burrow will form air circulation that causes a breakdown in the sediment, this prevents the accumulation of minerals at the bottom of the sediment, so that the nutrient content remains stable and the fertility of the sediment for vegetation growth is maintained (Muniarti, 2012). Thus, crabs are one of the key species of mangroves. Thus, crabs (Brachyura) are directly associated with mangroves (Syahrera et al., 2016).

Method

The population of this study was all Brachyura found in the coastal mangrove area of Gerupuk Beach. Meanwhile, the sample in this study was all Brachyura found in the plot area. This research was conducted in the mangrove area of Gerupuk Beach. Gerupuk Bay is located in Sengkol Village, Pujut District, Central Lombok Regency. Geographically Central Lombok Regency is located at 116^{o}05'-116^{o}24' east longitude and 8^{o}24'-8^{o}57' south latitude.

The mangrove habitat in this area stretches to an intertidal area of 50 Ha. This area has two seasons, namely the rainy season which usually occurs from November to April with the wettest month being January with an average rainfall of >300 mm per month, and the dry season which usually occurs from May to October with the driest month being August with an average rainfall of <20 mm per month. Meanwhile, the back of this mangrove ecosystem area is surrounded by hills (Anwar and Mertha, 2017). Furthermore, the research was conducted in May 2023. The map of the research location is as follows:

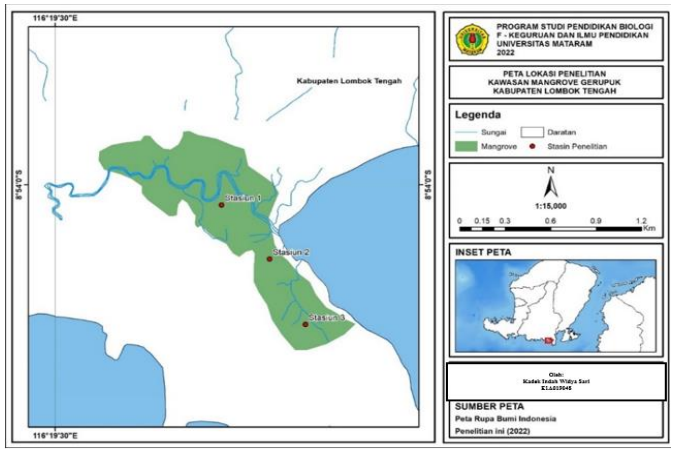

Figure 1. Research sites

The tools and materials used in this research are stationery, ziplock plastic, exam board, label paper, 100 meter roll meter, thermometer, GPS, salinometer, camera, pH meter, soil meter, raffia rope, gloves, and 70% alcohol. Meanwhile, data collection used a combination of line transect and plot method. Determination of transects using purposive sampling method, namely by drawing transect lines along the study area with a distance of about 300 m between transects and considering the dominant mangrove groups on Lombok Island, namely the genus Rhizophora, Avicennia, and Sonneratia (Idrus, 2014). This research location consists of 3 stations, station 1 is near the beach, station 2 is located near the river, and station 3 is located near residential areas. Stations 1 and 2 had sandy mud substrates, while station 3 had muddy substrates. Each research station consists of 3 transects measuring 1×1 meter and there are 3 plots on each transect. And sampling through direct field observation by taking crabs (Brachyura) above the substrate by hand, and using a shovel to take crabs (Brachyura) under the substrate.

The data obtained was then analyzed using the formula 1. The species diversity index is calculated based on the Shannon & Weiner formula (Krebs, 1994):

$$H' = -\sum Pi \, Ln \, Pi \quad (1)$$
$$Pi = \frac{ni}{N}$$

Description:
H'= species diversity index
ni= number of individuals of the i-th species
N= total number of individuals
The uniformity index is calculated using the Formula 2:

$$E = \frac{H'}{\ln(s)} \quad (2)$$

Description:
E= Uniformity index
H'= Diversity index
S= Number of species

The dominance index was calculated using Simpson's Formula 3 (Odum, 1993):

$$R = \frac{(S-1)}{(\ln(N))} \quad (3)$$

Description:
D= Dominance index
ni= Number of individuals of the i-th species
N= total number of all individuals

Determination of the association of two species refers to Ludwig & Reynolds (1988) using the 2 x 2 contingency table method.

Table 1. 2x2 contingency table

		Jenis B		
		Ada	Tidak ada	
Jenis A	Ada	A	b	m = a + b
	Tidak ada	C	d	n = c + d
		r = a + c	s = b + d	N = a + b + c + d

Description:
a = Number of sample units containing species A and species B
b = Number of sample units containing species A only, B absent
c = number of sample units containing species B only, A absent
d = number of sample units that do not contain species A and species B
N = Number of sample units observed

Result and Discussion

Environmental Parameters of Mangrove Area on Gerupuk Beach, Central Lombok

Environmental condition measurements were conducted at the three research stations. Environmental conditions observed were temperature (°C), salinity (‰), pH, dissolved oxygen (DO), nitrate levels, and phosphate levels. Temperature measurements were carried out using an environmental thermometer, while a pH meter was used to determine the acidity of mangrove area waters at the three research stations. Meanwhile, to determine the value of DO, nitrate levels, and phosphate levels were carried out in the laboratory using the spectrophotometer method.

Table 2. Environmental parameters of the Gerupuk coastal mangrove area

Parameter	Stasiun		
	St. 1	St. 2	St. 3
Suhu (°C)	28,9	29	29
Salinitas (‰)	32	32	31
pH	7	7,18	7,2
DO (mg/L)	3,72	3,51	3,41
Kadar Nitrat (mg/L)	0,7	0,63	0,61
Kadar Fosfat (mg/L)	31,86	30,07	28,29

The results of the measurement of environmental parameters at the research site can be seen in Table 2. The observation of environmental conditions at each research station showed an average temperature value of 28.8-29 ° C, salinity 31-32‰, pH 7.10-7.20, dissolved oxygen 3.41-3.72 mg/L, nitrate levels 0.61-0.7 mg/L, and phosphate levels 28.29-31.86 mg/L. In addition, the results also showed that the substrate of the 3 research sites was sandy mud.

The temperature in the coastal mangrove area of Gerupuk Beach was 28.8-29°C. Meanwhile, observations in the North Gorontalo Dudepo Island mangrove area resulted in temperatures ranging from 27.8-30 ° C (Usman & Hamzah., 2013). Observations in the mangrove area of the Mangrove Restoration and Learning Center (PRPM) of Pekalongan City showed a temperature range of around 28-31 ° C. The magnitude of the temperature value at each mangrove habitat station is caused by the intensity of sunlight received by the water, the amount of water volume inundated in the mangrove habitat, and weather conditions (Aksornkoae, 1993). In addition, the magnitude of the temperature value can include the temperature range that can be used as a place for biota to live and develop. Meanwhile, the large difference in temperature at each observation station is caused by differences in data collection time and mangrove density (Pratiwi & Ernawati., 2016).

The salinity of waters at 3 mangrove observation stations on the coast of Gerupuk Beach is still in a good range for mangrove survival. This is because the

salinity of waters influenced by tides ranges from 5-34, if the salinity is less than 28 ppt then the growth of mangroves regressed (Aksornkoae, 1993). Furthermore, dissolved oxygen levels at the three stations were 3.72; 3.51; and 3.41, respectively. The results of DO observations in Yusuf & Muhsoni's (2020) research at 5 mangrove stations in Kwanyar District, showed that station 3 had the highest value with 9.08 mg/l, and the lowest was around 2.87 mg/l at station 1. The greater the dissolved oxygen content in the mangrove area, the better the life of biota in it. In addition, oxygen dissolving power can be reduced due to rising water temperature and increasing salinity.

The pH value in the three research locations ranged from 7.10 to 7.20. The pH level in the waters is one of the environmental parameters that affect the life of organisms in it. The higher the degree of acidity, the more it will support decomposing organisms to decompose organic matter that falls on mangroves (Putri et al., 2021). soil pH in mangrove areas is also one of the factors that influence macrozoobenthos habitat. If the soil acidity is excessive, it will cause the soil to be very sensitive to biological processes, such as the process of decomposition of organic matter by macrozoobenthos. The process of decomposition of organic matter will generally reduce the acid atmosphere, so that macrozoobenthos will remain active in its activities (Arief, 2003).

The content of nutrients such as nitrate and phosphate in waters has an important influence and is necessary for the growth of aquatic organisms. Both factors are important for the growth of organisms, so they can be used as indicators of water quality and fertility (Utami et al., 2016). Nitrate levels at stations 1, 2, and 3 were 0.7; 0.63; and 0.61 mg/L, respectively. Meanwhile, the average results of nitrate content in mangrove areas in Mertasari and Suwung Bali landfill watershed are 25.579 mg/L and 25.904 mg/L (Dewi et al., 2017). The highest nitrate content is located at station 1 because station 1 is where the river enters the mangrove area. The distribution of nitrate levels is getting higher towards the coast and the highest levels are found in estuarine waters, due to the source of nitrates from land, namely waste discharges containing nitrates (Budiasih, 2015). Meanwhile, phosphate levels at stations 1, 2, and 3 were 31.86; 30.07; and 28.29 mg/L. The phosphate content at the three stations is high, this is because there is road construction that causes a lot of industrial waste to be disposed of or passing through mangrove waters. While the phosphate content in mangrove areas in Pantai Labu, Deli Serdang Regency ranges from 2.6-2.8 (Yahra et al., 2020).

Brachyura in the Coastal Mangrove Area of Gerupuk Beach, Central Lombok

There are 2 families of Brachyura found at the three research stations which can be seen in Figure 2, namely the Ocypodidae and Grapsidae families. 6 species found belonging to the Ocypodidae family are *Uca rosea, Uca triangularis, Uca vomeris, Uca forcipata, Uca perplexa,* and *Uca vocans*. While in the Grapsidae family only one species was found, namely *Metopograpsus thukuhar*. The number of crab species (Brachyura) found in this study is more than the research of Putriningtias et al (2014) in the mangrove ecosystem in Karimunjawa National Park, Central Java, which found 4 species of Brachyura from 4 different genus families, namely Brachyura species *Macropthalmus parvimanus* (Family Macrophthalmidae), *Uca vocans* (Family Ocypodidae), *Metopograpsus thukuhar* (Family Grapsidae), and *Thalamita crenata* (Portunidae). Meanwhile, Fauzan et al (2020) found 7 species of crabs (Brachyura) in the Pagatan Besar Mangrove Ecotourism Area, Tanah Laut Regency. The results of this discovery are much less when compared to the findings in the research of Redjeki et al (2017) who found 12 species of Brachyura in the Segara Anakan mangrove forest, Central Java and Pratiwi (2007) who found 40 species of Brachyura in the Mahakam Delta mangrove forest. And Jacobs et al (2019) found Brachyura species found during research on mangrove forests in Lamanggo and Tope villages, including the genus *Scylla* sp.

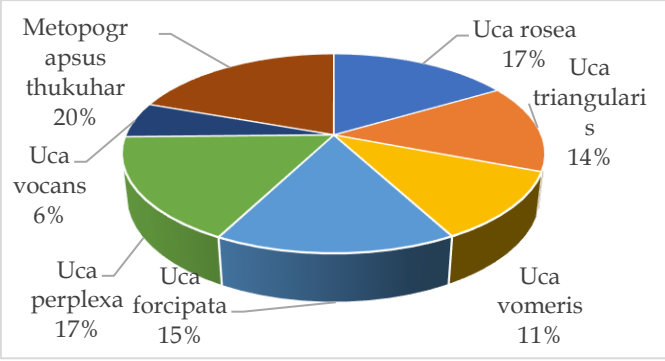

Figure 2. Crab (Brachyura) in Gerupuk Beach Mangrove Area

The total number of Brachyura found at the three research stations was 356 individuals. *Metopograpsus thukuhar* was the species with the highest number of

individuals at 51 (20% of individuals/species). While *Uca vocans* is the species with the lowest number of individuals, which amounted to 23 individuals (6% number of individuals / species). Species of fiddler crabs *(Uca* spp.) from the Ocypodidae family were most commonly found in this study. This shows that the genus *Uca* is more commonly found on sandy mud substrates, because *Uca* is able to adapt well to several environmental factors in the ecosystem. However, the presence of *Uca* is limited to areas exposed to tides. Generally, this crab (Brachyura) is active during the day (diurnal) when the sea water recedes. In addition, mangrove vegetation around the research plots was relatively mature, which could provide litter (nutrients) as the main food source for *Uca* spp.

The Grapsidae family has six genera consisting of 41 species spread throughout the world. However, in this study only one species was found, namely *Metopograpsus thukuhar*. Crabs (Brachyura) from the Grapsidae family are commonly found crawling on the surface or into mud holes around mangroves. *Metopograpsus thukuhar* is commonly found in mangrove areas in the Indo-Pacific. In addition, *Metopograpsus thukuhar* can hide in small holes formed by cutting mangrove roots and inserting the roots into the mud (Vannini et al., 1997).

Crab (Brachyura) Diversity in Gerupuk Beach Mangrove Area

Analysis of diversity index values (H'), uniformity (E), dominance (D), and species richness (R) can show the stability of the Brachyura community in an ecosystem. The results of observations of the three stations, based on the Shannon-Wiener diversity level category, showed that the level of Brachyura diversity at each station on the coast of Gerupuk Beach was classified into the medium-high category. Stations 1 and 3 show values of 1.7 and 1.9 which are included in the medium category. Meanwhile, station 2 showed a result of 4.0 which is included in the high category (Table 3). The diversity index value of crabs (Brachyura) in the mangrove conservation area of Polo Village, Bunta District, Banggai Regency is also classified in the medium category with a diversity index value of 1.4280 (Haruna et al., 2022). Furthermore, the same results were also found in the research of Redjeki et al (2017) in the Segara Anakan Cilacap mangrove area which ranged from 1.47-2.23 including in the moderate category. In addition, the diversity index value of crab species (Brachyura) in the West Alas Sumbawa mangrove forest area is classified in the low category, which is worth 0.34 (Zulfiqri et al., 2020). And the diversity index of crabs (Brachyura) in the mangrove area of Purworejo Regency, Central Java at station 1 and station 2 is classified as medium and at station 3 is classified as low, with consecutive values of 1.67; 1.90; and 0.64 (Rahayu et al., 2018).

Table 3. Diversity index (H'), uniformity (E), dominance (C), and richness (R) of Brachyura species in the coastal mangrove area of Gerupuk Beach, Central Lombok.

Stasiun	H' (Kategori)	E (Kategori)	C (Kategori)	R (Kategori)
I	1.7 (sedang)	0.4 (sedang)	0.2 (TAD)	1.1 (rendah)
II	4 (tinggi)	0.8 (tinggi)	0.2 (TAD)	1.2 (rendah)
III	1.9 (sedang)	0.4 (sedang)	0.2 (TAD)	1.3 (rendah)

The diversity value obtained shows variation between stations, this is because the composition and number of species found at each location are different. This diversity index value shows that Brcahyura in the coastal area of Gerupuk Beach is relatively stable because the environmental parameters and substrate are favorable. However, there is competition between species in supplying nutrients (Akhrianti, 2019). In addition, water quality also determines the high diversity in an ecosystem. And the value of species diversity will be high if the community consists of many species and there is no dominating species. Conversely, the value of species diversity will be low if the community consists of few species and there is a dominant species (Indriyanto, 2006). Furthermore, moderate diversity values can be caused by environmental factors and the lack of predators that result in the Brachyura community not too much. So that the community at the research site has not too many species (Rau et al., 2013). And the moderate value of diversity indicates that the environmental conditions support the survival of crabs (Brachyura) or the mangrove area is suitable to be used as a habitat and has the potential to grow and develop the crab (Brachyura).

The Brachyura uniformity index at the three stations is classified as medium-high, with a value of 0.4 at station 1 including the medium category, 0.8 at station 2 including the high category, and 0.4 at station 3 including the medium category. Research by Putriningtias et al., (2019) in the mangrove area of Langsa City, Aceh showed that the crab diversity index value of Station A (0.60) included the medium

category, Station B (0.65) included the high category, Station C (0.61) included the high category, Station D (0.59) included the medium category and Station E (0.59) included the medium category. The species uniformity index (E) is influenced by the magnitude of the diversity value of a species and the total number of species. This means that the higher the value of species abundance, the more evenly distributed a species is in a habitat, and vice versa. The higher the uniformity index of a community means that environmental conditions are more stable. Conversely, the lower the uniformity index value means that the environmental conditions are more unstable. The low value of uniformity indicates the condition of the community in the environment is depressed (Supriadi et al., 2015).

The dominance level of Barchyura species in the coastal mangrove area of Gerupuk Beach, Central Lombok shows that there are no dominating species (Table 3). The dominance index value shows species richness and the balance of the number of individuals of each species. The results of this study found a dominance index of 0.2 which means that there are no dominating species and crabs (Brachyura) found in this study area have good adaptation to environmental conditions. A dominance index value close to 0 means that no species dominates the waters so that each individual at the research station has the same opportunity to live in the area (Dewi et al., 2017). This is supported by the uniformity value (E) at each station which shows a high category, meaning that each mangrove species is evenly distributed and there is no dominating species.

The observation results of the species richness index (R) ranged from 1.1-1.3 including the low category. The value of the richness index (R) tends to be high if there are many species in a community and each species is represented by one individual. Whereas in this study the value of species richness is low because the number of species found tends to be small but the number of individuals found is large. The species richness index (R) shows the richness of species in a community. The high value of species richness can be influenced by the large number of species and individuals in the community (Nasir & Dewantara., 2019). In addition, the species richness index is influenced by the level of diversity and the size of the research plot, the higher the diversity value and the larger the research plot, the higher the species richness index value (Kusmana & Azizah., 2021).

Association of Crabs (Brachyura) and Mangroves in Gerupuk Beach, Central Lombok

Relationship analysis using 2x2 contingency tables showed that not all Brachyura and mangrove species were associated with each other. Brachyura species associated with mangrove species can be seen in Table 4. The results of the research conducted showed that 7 species of Brachyura were found in the mangrove ecosystem on the coast of Gerupuk Beach. There are 3 species of Brachyura, namely *Uca rosea, Uca triangularis,* and *Metophograpsus thukuhar* which are associated with the 2 mangrove species found in the study site, namely *Rhizophora mucronata* and *Avicennia lanata.*

Table 4. Association of Brachyura with Mangroves in Gerupuk Beach, Central Lombok

Spesies Brachyura	Spesies Mangrove	
	Rm	Al
Uca rosea	-	
Uca triangularis		+
Metograpsus thukuhar	-	

Description: Rm (*Rhizophora mucronata*); Al (*Avicennia lanata*)

Research by Jones (1984) says there are generally six families of crabs (Brachyura) associated with mangroves, namely Mictridae, Grapsidae, Portunidae, Geocarcinidae, Oxypodidae, and Xanthidae. Ocypodidae and Grapsidae have many species and are dominant in mangrove ecosystems. There are nine species of the family Ocypodidae and seven species of Grapsidae in the mangrove ecosystem that have morphological and physiological adaptability to temperature and salinity, which causes the ability to survive in all mangrove habitats.

Pairs of Brachyura and mangrove species that are positively associated indicate that the pairs influence each other, that is, they can live together and require the same resources. Whereas negatively associated Brachyura and mangrove species pairs indicate that the two species tend not to be found together in a habitat. Brachyura species that are not associated with each other illustrate that these pairs do not influence each other, meaning that they can live together but require different resources. This is also evidenced from the results of data collection, that the Brachyura species found in the plots are inhabiting stems, roots, and substrates. For example, the species *Uca rosea* and *Metophograpsus thukuhar* are usually found around mangrove roots. While the species *Uca vocans* and *Uca vomeris* are more often found immersed in muddy substrates and sandy mud.

Relationship between Mangrove Density and Brachura Abundance

The correlation coefficient explains the strength of the linear relationship and the direction of the relationship between two random variables. If the correlation coefficient is positive, then the two variables have a unidirectional relationship, meaning that if the value of variable X is high, then the value of variable Y will also be high. Conversely, if the correlation coefficient is negative, then the two variables have an inverse relationship, meaning that if the value of X is high, the value of variable Y will be low and vice versa (Sarwono, 2006).

The results of calculations with simple linear regression analysis to determine the magnitude of the relationship between mangrove density (variable X) and the abundance of Brachyura (variable Y) in the study area can be shown by the equation y = 0.2619x + 0.0206 (Figure 3) has a positive relationship means that any increase in variable X (mangrove density) will result in an increase in variable Y (abundance of Brachyura). As well as the coefficient of determination (R2) obtained is 0.6173. This means that the abundance of Brachyura influenced by mangrove density with any increase in mangrove density by one unit can increase the abundance of Brachyura by 0.2619. The coefficient of determination (R2) obtained is 0.6173, meaning that the effect of mangrove density on Brachyura abundance is 61.73% and 38.27% is influenced by other variables, such as sediment, sunlight availability, and litter (Gazali et al., 2019).

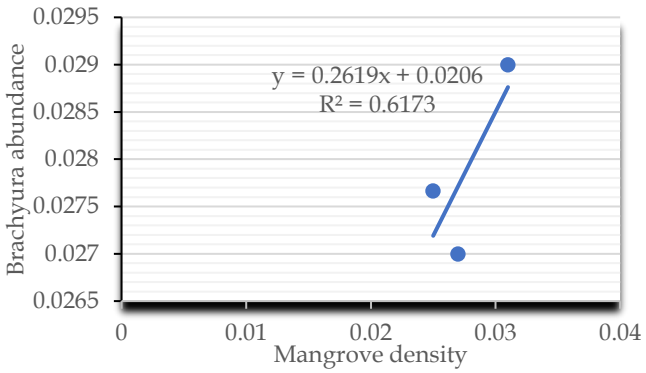

Figure 3. The results of the analysis of the relationship between mangrove density and the abundance of Brachyura at Gerupuk Beach.

Conclusion

Based on the research that has been done, it can be concluded that there are 7 species of Brachyura found in this study, with an average Brachyura diversity index of 2.5 which is classified in the medium category. And there are 3 species of Brachyura associated with 2 mangrove species. Avicennia lanata is positively associated with Uca triangularis, while Rhizophora mucronata is negatively associated with 2 Brachyura species, namely Uca rosea and Metopograpsus thukuhar.

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Author Contributions

Kadek Indah Widya Sari conceptualization, which includes research ideas, design with methodology, and data analysis. Abdul Syukur and Lalu Zulkifli conceptualization has been carried out by reviewing investigation research, literature review, and provided feedback on the manuscript.

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Conflicts of Interest

The author declares no conflict of interest.

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