

Study of the behavior of the fiddler(*Uca bangali*) in the area of Ban Modtanoi area,
Kantang district, Trang province

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ABSTRACT

This research has studied residential areas. In the Modtanoi area, Kantang District, Trang Province, the area is divided into 2 areas: high density area and low density area. In each study area randomly divided into 5 areas, using a 50x50 cm quadrat to study male and female behavior. And to study the quality of the soil such as soil texture Soil moisture Soil organic matter and soil pH were studied by 20 fiddler crabs per area and 20 per sex and counting the number of behaviors. The data were collected every week for a period of 4 weeks.

We found 4 behaviors of male fiddler crabs classified as one behavior found in female crabs, namely feeding and 4 behaviors found in male crabs: feeding, cleaning of the claws. (gripping), waving, fighting (fighting). It was found that in 2 minutes, the male in high density area. The four types of behavior rates were higher than males in the low density area. But on the other hand, the female In high density area. There will be a rate of behavior lower than females in low density areas and in high density areas, the higher the organic matter of the soil. Significantly low density areas including low density areas had significantly lower soil pH than those of high density areas .from the study, it was found that the frequency of behavior rates of the four types and soil quality were positively related to low density areas.

Research Question and Hypothesis

1. Two areas of study: high density area and low density area. Is there a variety of frequencies and behaviors?

Two areas of study: high density area and low density area. There is a variety of different frequencies and behaviors.

2. Does the quality of the soil in that area cause diversity in behavior?

The quality of the soil affects the diversity of behavior.

Introduction and Review of Literature

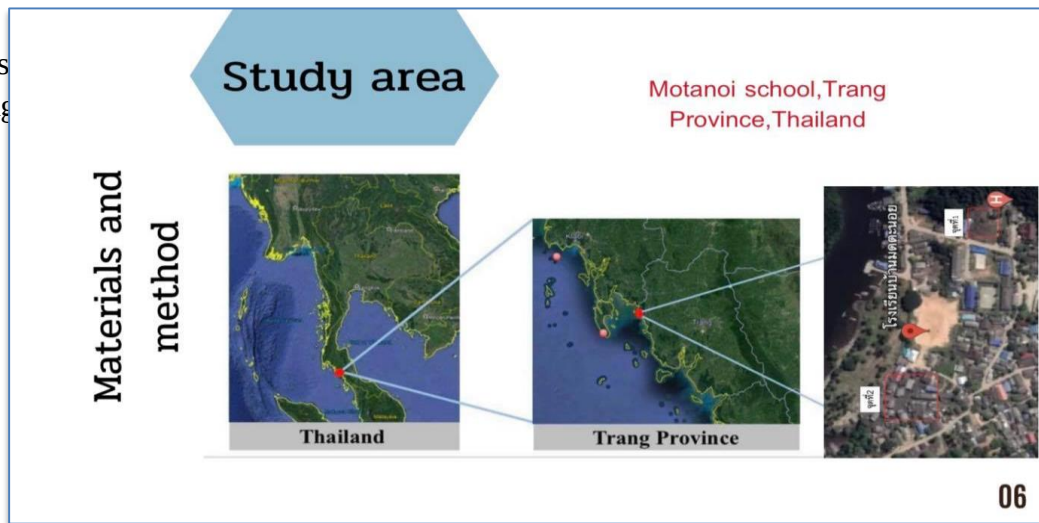
From the past to the present, mangrove forests are areas that land animals. And sea creatures live together which cannot be found in other ecosystems Mangrove forests are the most abundant of the coastal ecosystems, and thus are important areas in the life cycle of many living things. Especially the creatures that are reputed to be "Developers of clay," that is, a crab claw, which is a crab claw. This is comparable to a measure of the abundance of mangrove forests. Since fencing has a mechanism in the digestive system and excretory system that is beneficial to the ecosystem, the fiddler crab is a type of crab that eats organic substances in the sediments. And in the outer part of the fencing crab there is an appendage for separating organic matter from the sediment and forming the remainder of the sediment into a mass called `` dung ". And high carbon which is a factor that contributes to the rate of soil turnover Therefore, fencing crabs are important factors for changing soil environmental factors. By causing modification of soil texture and soil chemistry.

The behavior of the fiddler crabs is also an important factor affecting the local ecosystems. Both feeding It is the eating of nutrients on the soil and then through the digestion mechanism into artificial dross. Waving is the behavior of waving its claws to show greatness. Beautiful and courtship as well. Gripping is the beauty of the claws of the male crab. And finally, fighting is the behavior of fighting for housing.

In the area around Mod Ta Noi area, Trang Province, it is an area where a wide variety of species and a large number of species of scallop crabs are found. The habitats of each crab species differ and may affect the soil quality indication. Therefore, the researcher group would like to study Behavior of fencing crabs in different areas around the wasp beach. To find the relationship with soil quality in that area to promote the conservation of the fiddler crabs population It also promotes the restoration of the fertility of the mangrove forest to continue.

Research Methods and Materials

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Kantang



Map Of Mot Ta Noi, Kantang District, Trang Province

2. Determination of intervals and determination of sampling points

Sample collection The research team collected behavior samples. The size of fencing crabs and soil quality at Mod Ta Noi Beach during December 2020 to February 2021 during low tide by dividing the study area into 2 areas: Point 1, mangrove forest in front of Ban Mod Ta Noi School, point 2, area where community habitats. The Wintanoi house, as shown in picture 1.



Figure 1 shows the study area of mangrove forest at Ban Mod Ta Noi community, Kantang district, Trang province.

3. Determination of study area

Explore the mangrove forest Ban Modtanoi Community, Kantang District, Trang Province, comparing the population of the fiddler crabs in each area. By looking for areas with high population density of fiddler crabs and Areas with low density of fiddler crab populations. Designate the area with the highest population of fiddler crabs as High Density (HD) and the less populated area as Low Density (LD) area.

4. The study of male and female fiddler crab behavior

1. A specific quadrat was randomly placed in regions with high fiddler crab densities and at least 5 quadrat densities each. Very dense and little Set up a video shooting box in the area of Quadrat studied to observe the behavior of the crab for 2 minutes, as shown in Figure 2.



Figure 2 shows how to collect video data on the behavior of the fiddler crab.

2. The recorded video was taken in the area with high density of the fiddler crab and in the area with the low density of the fiddler crab. To classify the sexes and count the number of behaviors, including feeding and behavior found in male crabs, four behaviors: feeding, cleaning, gripping, waving, fighting. Data were randomly collected at 20 samples, divided into 20 males and 20 females, totaling 80 pigs.

5. Soil quality study in areas with very dense and less dense crabs.

1. Soil samples were collected from each Quadrat by using a planting spoon to scoop the inner soil surface of the Quadrat to study the quality of the soil as follows. Weighing 100 g of soil samples from each Quadrat, weights them in a 120 ° C incubator for 24 hours and weigh the soil after baking.

2. To determine the pH of the soil, 20 grams of soil samples from each Quadrat were dissolved in a 40 ml beaker of water and mixed with a measuring device. The pH value is immersed in a beaker and read the value.

3. Characterize the soil texture. According to the guide for the classification of soils using the touch method in the field as shown in Figure 3

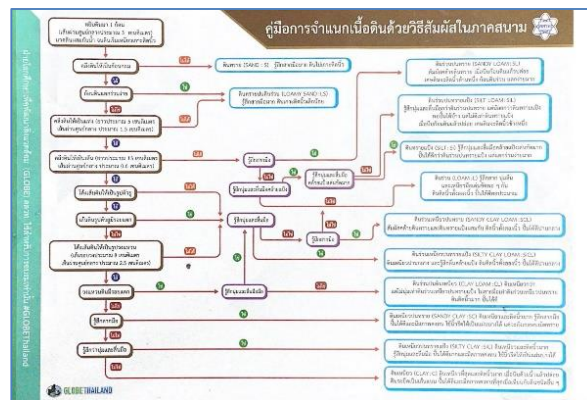


Figure 3 shows a guide for the classification of soil by the touch method in the field

Results

1. The study of the behavior of the male fiddler crabs

Study the behavior of the male fiddler crabs in the high density and the low density areas. The results were shown in Table 1.

Table 1 shows the values of behavioral numbers of male fencing crabs in high and low density areas.

Behavior	High density (times/minute)	Low density (times/minute)
feeding	12	8
waving	8	4
gripping	5	3
fighting	1	0.5

2. The study of the behavior of female fiddler crabs

Study the behavior of female fiddler crabs in high and low density areas. The results were obtained according to Table 2.

Table 2 shows the values of behavioral numbers of male fencing crabs in high and low density areas.

Behavior	High density (times/minute)	Low density (times/minute)
feeding	13	20

3. Soil Quality Study

Study the soil quality in high and low density areas. The results were shown in Table 3

Table 3 showing the soil texture. Soil moisture Soil organic matter and soil PH in high and low density areas.

	Study area	
	High density	Low density
Soil texture	Loamy sandy soil	Sandy soil and loamy soil
Soil moisture	20.35 $\pm$ 0.72	23.58 $\pm$ 0.56
organic matter in the soil	1.80 $\pm$ 0.19	1.40 $\pm$ 0.11
pH	5.33 $\pm$ 0.09	5.6 $\pm$ 0.24

Discussion and conclusion

1. The behavior of the male claw crabs was studied in high and low density areas. It was found that the males showed 4 behavioral behaviors: feeding, griping, waving and fighting. Crabs in high-density area were greater than those in low-density area for all behaviors. The feeding behavior in the high density area was 12 times/minute while in the lower density area had 8 times/minute. The griping behavior in the high density area was the mean of 5 times/minute while in low-density area had 3 times/minute. The Waving behavior in high-density area had 8 times/minute while low-density area had 4 times/minute and the fighting behavior in high-density area had 1 times/minute while in the low density area had 0.5 times/minute. From studying the behavior of female fencing crabs in high and low density area. It was found that the female fencing crabs exhibited one behavioral behavior: feeding, in the high density area was 13 times/minute while in the lower density area had 20 times/minute.

2. The study of soil texture characteristics. Soil moisture Soil organic matter and soil PH in each area From the study of soil texture Soil moisture Soil organic matter and soil PH in each area were found to be in the high density area. The soil is sandy loam. In low-density areas The soil texture is sandy and loamy soil. In a very dense area The moisture content is less than the density area. But in reverse Very dense regions Has the value of organic substances In low-density areas In very dense regions, the soil texture is more acidic than in low density areas.

It can be concluded that the areas with high density and the less dense areas had different soil quality. The denser areas had higher soil quality than the less dense areas. As a result, it affects the behavior of fiddler crabs. Male fiddler crabs are found in four behaviors: feeding, cleaning, gripping, waving, fighting in dense areas. Soil quality had a higher average of all behaviors than in low density areas where soil quality was lower. On the other hand, only one female fiddler crabs were found, feeding, in which the higher the average, the lower the eating behavior in the low-density areas.

Acknowledgments

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