Research Report

Study water quality that affects the diversity and density of benthic fauna in the mangrove forest at Laem Thewat Viewpoint. Palian District, Trang Province, Thailand

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Research Title: Subject Study water quality that affects the diversity and thickness of animals. Ground Mangrove forest at the viewpoint of Laem Thua Palian District, Trang Province Thailand

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abstract

The purpose of this study was to study the impact of water quality on the diversity and density of benthic fauna in mangrove forests. It considers environmental factors such as water temperature, salinity, Acid-base properties and the amount of dissolved oxygen in water. The study was conducted in 3 mangrove areas, which are used as indicators of water quality and ecosystem fertility.

The results of the study showed that the physical and chemical factors of the water affect the diversity of benthic animals in mangrove forests. The water quality is good, resulting in high density and diversity of benthic animals. Reflecting the integrity of the ecosystem in the study area.

Keywords: Water quality, Benthic animals, Mangrove forest

Preamble

Origin and importance

Mangrove forests are an important ecosystem in Thailand. It is important to maintain the natural balance and is a nursery for aquatic animals. It is home to many species and helps prevent coastal erosion. Benthic animals in mangrove forests are important for the ecosystem because they play a role in the process of nutrient circulation. Improving water quality and being a food source for living beings.

Studies between water quality and the impact on the diversity and density of benthic fauna in mangrove forests are therefore important for the conservation and restoration of mangrove areas. Therefore, human activities such as chemical-based agriculture must be developed, which may affect water quality in mangrove areas, which may reduce the diversity and population of benthic animals.

Therefore, the researchers are interested in studying the quality of water. Oxygen content in water, water temperature. Base acidity properties of water The salinity of the water and the diversity of benthic animals in the mangrove forest at Ban Laem Thua viewpoint. Lipang Subdistrict, Palian District, Trang Province to apply the knowledge gained in the conservation and restoration of mangrove ecosystems and can be used in the development of coastal communities.

Research Question

Water Quality Acidity Water base, dissolved oxygen content, water salinity, water temperature. Does it affect the diversity and density of benthic animals in mangrove forests?

Research Hypothesis

Water Quality Acidity Water base, dissolved oxygen content, water salinity, water temperature. This affects the diversity and density of benthic animals in mangrove forests.

Early Variable: Water Quality
Variables Accordingly: Diversity of benthic fauna
Control Variables: Venue and measurement method

Materials, equipment and methods of conducting research

Control Variables: Venue and measurement method

Materials and equipment

1. thermometer
2. Water Oxygen Monitoring Kit
3. Litmus paper
4. Water Sampling Bottles
5. Hydrometer
6. Measuring cylinder
7. beaker
8. Random Table

How it works

Determine the study point.

This research was conducted in the area of the Laem Thuak mangrove forest. Palian District, Trang Province is located on the coordinates of latitude. 7.1740625 North Degree Longitude 99.7513125 North Degree

Conduct a study by designating water collection points. 3 This is because it is a place where an ecosystem occurs on the coast or estuary, which is influenced by the confluence of seawater and fresh water. Most mangrove forest areas are often fertile clay or muddy soils. It is considered an important area for the environment and economy in many aspects, as a habitat for aquatic animal nursery and mangrove forest conservation.

Measure water quality according to the methodology of GLOBE By studying water quality, inspection, Acidity Water base, dissolved oxygen content, water salinity, water temperature, density of benthic animals in mangrove forests. as follows

1. Study the acid-base properties of water by dipping Universal Indicator paper in sample water, waiting for the color of the paper to change. The measured pH is measured by the colored band of the test kit .
2. Study the amount of dissolved oxygen in water by collecting water, immerse the sample collection bottle under water by filling it completely, and close the lid under water. A total of 3 inspections were conducted . The average value should be between the test sets.
3. The salinity of the water was studied by gargling the measuring cylinder with sample water twice and adding the sample water to the measuring cylinder of 500 milliliters. Measure the temperature of the water. Slowly lower the hydrometer to read the specific gravity of the water and compare the specific gravity of the water in the table .
4. Study the water temperature by submerging the thermometer in water about 10 centimeters deep. The water temperature reading is collected 3 times.
5. Study benthic animals in mangrove forests By selecting 3 points. In the study of benthic animals. Put a random table on it. A total of 3 areas to be studied . Wait for the data of each point by counting the number of slots of the random table. Data collection 3 times

Part 1 to study water quality Acidity-base value of water Dissolved oxygen content, water salinity, and water temperature This affects the diversity and density of benthic animals in mangrove forests.

1.Study on the acidity-base properties of water in the mangrove forest at the Cape Toot viewpoint. Palian District, Trang Province

Mangrove forest area at the Cape Great-Grandfather viewpoint.	Acid-base of water
1st	6
2nd	7
3rd	7
average	6.77

Table 1 shows the study of the acid-base properties of water in the mangrove forest at the Cape Great-Great-Greatness Viewpoint. Palian District, Trang Province

2.Study on the amount of dissolved oxygen in water Mangrove forest area at Laem Thuan viewpoint, Palian District, Trang Province

Mangrove forest area at the Cape Great-Grandfather viewpoint.	Dissolved oxygen content in water (mg/L)
1st	5.8
2nd	6
3rd	6
average	5.93

Table 2 shows the results of the study on the amount of dissolved oxygen in the water in the mangrove forest at the Great-Grandfather Observatory. Palian District, Trang Province

3.Study on salinity in the mangrove forest at Laem Thua Viewpoint Palian District, Trang Province

Mangrove forest area at the Cape Great-Grandfather viewpoint.	Salinity of water (ppm)
1st	30
2nd	30
3rd	30
average	30

Table 3 shows the results of the study of salinity values in the mangrove forest at the Laem Thut viewpoint. Palian District, Trang Province

4.Water Temperature Study Mangrove forest area at the Cape Great-Grandfather viewpoint. Palian District, Trang Province

Mangrove forest area at the Cape Great-Grandfather viewpoint.	Water Temperature (degrees Celsius)
1st	27
2nd	28
3rd	28
average	27.67

Table 4 shows the results of the water temperature study. Mangrove forest area at the Cape Great-Grandfather viewpoint.Palian District, Trang Province

5. Study benthic animals in the mangrove forest at the Cape Great-Grandfather viewpoint. Palian District, Trang Province

Mangrove Forest Area	Benthic animals in mangrove forests	Benthic animals found at designated points.
Point 1		4 Sword Claw Crabs 1 red claw crab 4 red-eyed clams
Point 2		4 Sword Claw Crabs 1 flat coconut milk 2 white sword crabs
Point 3		5 Sword Claw Crabs 3 white sword crab balls 2 fragrant conch shells

Table 5 shows the results of the study of benthic animals in the mangrove forest at the Cape Great-Greatness Viewpoint. Palian District, Trang Province

From the table of benthic animals in the mangrove forest, 6 species of benthic animals were found , which can be calculated as density. as follows

- Point 1: Sword-clawed crab has a density of 16 percent, red-clawed crab has a density of 4 percent, and red-eyed clams have a density of 16 percent.
- Point 2: Sword-clawed crab has a density of 16 percent, white-clawed crab has a density of 8 percent, and low-top coconut milk has a density of 4 percent.
- Point 3: Sword-clawed crab has a density of 20 percent, white-clawed crab has a density of 12 percent, and fragrant conch has a density of 8 percent.

Summary and discussion of research results

According to the study, the study of water quality and biodiversity of benthic animals in mangrove forests at the viewpoint of Cape Tau, Palian District. Trang Province Thailand It was found that water quality affects the diversity of organisms, which has an acidity value. Average water base 6.67 The amount of dissolved oxygen in water. 5.93 mg/L Average water salinity 30 ppm Average water temperature 27.67 °C Benthic animals studied 3 It was found that there were benthic animals. 6 The types are as follows:

1. The average density of sword-clawed crabs is 17.33 percent.
2. The average density of red claw crabs is 1.33 percent.
3. White-clawed crabs have an average density of 6.67 percent.
4. The average density of red-eyed clams is 5.33%.
5. The average density of low-top coconut milk is 1.33 percent.
6. Fragrant conch has an average density of 2.67 percent.

The quality of the water studied was at a good level, resulting in a high density and diversity of subsoil in the mangrove forest.

Suggestion

Mangrove forests in other areas with more benthic fauna should be studied.

Acknowledgments

In doing research projects, Study on water quality that affects the diversity and density of benthic fauna in the mangrove forest at Laem Thut Viewpoint Palian District, Trang Province Thailand There are many steps to be carried out. Data Acquisition Study of Measurement Methods experiment The project was completed well. Throughout this period, the project organizers have received assistance and advice in various aspects as well as encouragement from many people. The project organizers are very aware and grateful for the kindness of everyone. On this occasion, I would like to thank all of you. as follows

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Researchers

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