

Research Title: A Study of Seawater Quality at Had Khlong Son, Sikao District, Trang Province

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Abstract

The objectives of this study were to investigate the physical and chemical properties of seawater at Had Khlong Son , Sikao District, Trang Province, specifically focusing on salinity, temperature, dissolved oxygen (DO) levels, and pH values. The results indicated that the seawater quality in the study area was within the optimal range for all measured parameters. Specifically, the salinity, temperature, dissolved oxygen content, and acidity-alkalinity (pH) levels were all found to be appropriate and consistent with healthy marine environmental standards.

Background and Significance

Marine resources are natural resources that are vital to coastal ecosystems, marine life, and the livelihoods of coastal residents, including activities such as fishing, tourism, and recreation. Had Khlong Son in Sikao District, Trang Province, is an important natural tourist destination and an area with continuous utilization of the sea. If seawater quality changes, it may affect the environment and marine organisms.

Currently, human activities such as tourism, littering, and wastewater from communities may unconsciously impact seawater quality. Therefore, monitoring seawater quality is necessary to serve as baseline data for the surveillance and conservation of marine resources.

This research aims to study the seawater quality at Had Khlong Son by examining salinity, temperature, dissolved oxygen, and pH levels for these factors directly fo affect the survival

of marine life. If these values are at appropriate levels, it indicates that the seawater is of good quality. The results of this project will help determine the state of seawater quality at Had Khlong Son and can be used as a guideline for natural resource conservation, as well as to raise awareness among students and local citizens regarding the importance of maintaining sustainable seawater quality.

Objectives

- 1.To study the salinity of seawater in the beach area of Had Khlong Son , Sikao District, Trang Province.
- 2.To study the temperature of seawater in the beach area of Had Khlong Son , Sikao District, Trang Province.
- 3.To study the dissolved oxygen content of seawater in the beach area of Had Khlong Son , Sikao District, Trang Province.
- 4.To study the pH levels in the beach area of Had Khlong Son , Sikao District, Trang Province.

Research Questions

1. Is the salinity of the seawater in the beach area of HadKhlong Son , Sikao District, Trang Province appropriate?
2. Is the temperature of the seawater in the beach area of Had Khlong Son , Sikao District, Trang Province appropriate?
3. Is the dissolved oxygen content of the seawater in the beach area of Had Khlong Son , Sikao District, Trang Province appropriate?
4. Are the pH levels in the beach area of Had Khlong Son, Sikao District, Trang Province appropriate?

Research Hypotheses

1. The salinity of the seawater in the beach area of Had Khlong Son, Sikao District, Trang Province, is appropriate.

2. The temperature of the seawater in the beach area of Had Khlong Son, Sikao District, Trang Province, is appropriate.
3. The dissolved oxygen content of the seawater in the beach area of Had Khlong Son, Sikao District, Trang Province, is appropriate.
4. The pH levels of the seawater in the beach area of Had Khlong Son, Sikao District, Trang Province, are appropriate.

Research Methodology

Materials and Equipment

Salinity Study

- Measurement tool: Salinity Refractometer

Seawater Temperature Study

- Measurement tool: Glass thermometer

Dissolved Oxygen Study

- Measurement tool: Dissolved oxygen (meter/test kit)

Seawater pH Study

- Measurement tool: pH paper

Research Methodology

1. Study Sites Had Khlong Son area, Sikao District, Trang Province.

2. Procedures and Data Collection Seawater Data Collection Seawater quality measurements were conducted following the GLOBE Thailand protocols. The studies of seawater salinity, temperature, dissolved oxygen, and pH levels were carried out as follows:

Seawater Salinity Study

1. Collect seawater samples from the shoreline area of Had Khlong Son, Sikao District, Trang Province, study the salinity of the seawater in the beach area.
2. Study the salinity of the seawater in the shoreline area and at the sea surface of Had Khlong Son, Sikao District, Trang Province uses a Salinity Refractometer for measurement.
3. Measure the salinity of the seawater in both the shoreline area and at the sea surface collects data 3 times.

Seawater Temperature Study

1. Collect seawater samples from the shoreline area of Had Khlong Son, Sikao District, Trang Province, study the temperature of the seawater in the beach area.
2. Study the temperature of the seawater in the shoreline area of Sikao District, Trang Province, uses a glass thermometer for measurement.
3. Measure the temperature of the seawater in the shoreline area, collects data 3 times.

Seawater Dissolved Oxygen Study

1. Collect seawater samples from the shoreline area of Had Khlong Son, Sikao District, Trang Province, for study the dissolved oxygen content of the seawater in the beach area.
2. Study the dissolved oxygen content of the seawater in the shoreline area of Had Khlong Son, Sikao District, Trang Province by using a dissolved oxygen (meter/test kit) for measurement.
3. Measure the dissolved oxygen content of the seawater in the shoreline area by collecting data 3 times.

Seawater pH Study

1. Collect seawater samples from the shoreline area of Had Khlong Son, Sikao District, Trang Province, to study the pH levels of the seawater in the beach area.

2. Study the pH levels of the seawater in the shoreline area of Had Khlong Son, Sikao District, Trang Province, using pH paper for measurement.
3. Measure the pH levels of the seawater in the shoreline area, collecting data 3 times.

Research findings

Trial No.	Seawater salinity (ppt)	Seawater temperature (°C)	Dissolved Oxygen (ml/L)	Seawater pH (pH)
Trial 1	25	26	3.5	7
Trial 2	26	28	3.0	5
Trial 3	25	29	3.0	6
Mean	25.3	27	3.0	6

Based on the table, the average seawater salinity in the beach area was 25.3 ppt. The average seawater temperature was 27°C, while the average dissolved oxygen (DO) concentration was 3.0 ml/L. Additionally, the seawater pH level was recorded at 6.

Conclusion and Discussion

Based on the study of seawater quality at Had Khlong Son, Sikao District, Trang Province, the findings from the beach water samples are summarized as follows: salinity: The average seawater salinity was 25.3 ppt. This result is consistent with the findings reported by Wichairahat (2007). temperature: The average seawater temperature was 27°C, which aligns with the data from Wichairahat (2007). dissolved Oxygen (DO): The average dissolved oxygen level was 3.0 ml/L, a value similar to that observed by Wichairahat (2007) and pH Level: The average pH was 6, indicating slightly acidic conditions for this measurement in agreement with Wichairahat (2007).

Recommendations

1. Expand the study area
2. Conduct further studies in other districts and provinces

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