

A Study of Seawater Quality at Had Khlong Son, Sikao District, Trang Provinc



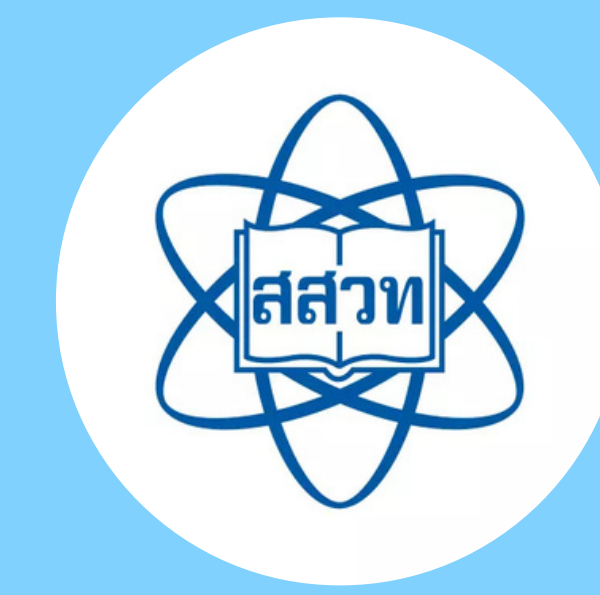
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Abstract

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.

Research Questions

Seawater resources are vital natural resources for coastal ecosystems, marine life, and the livelihoods of local communities, supporting activities such as fishing, tourism, and recreation. Had Khlong Son, located in Sikao District, Trang Province, is a significant natural attraction with continuous maritime utilization. Any changes in seawater quality could potentially lead to adverse impacts on the environment and marine organisms.

Introduction

Seawater resources are vital natural resources for coastal ecosystems, marine life, and the livelihoods of local communities, supporting activities such as fishing, tourism, and recreation. Had Khlong Son in Sikao District, Trang Province, is a significant natural attraction with continuous maritime utilization. Any changes in seawater quality could potentially lead to adverse impacts on the environment and marine organisms. Currently, human activities—such as tourism, littering, and untreated wastewater from communities—may unknowingly affect seawater quality. Consequently, monitoring seawater quality is essential to establish a baseline 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 (DO),and pH levels. These parameters directly influence the survival of marine life; maintained at optimal levels, they indicate healthy water quality.The findings of this project will provide insight into the current environmental state of Had Khlong Son. Furthermore,this data can serve as a guideline for natural resource conservation and help raise awareness among students and the local community about the importance of sustaining seawater quality for the future.



Research Methods

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:

Carrying Out Investigations

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.

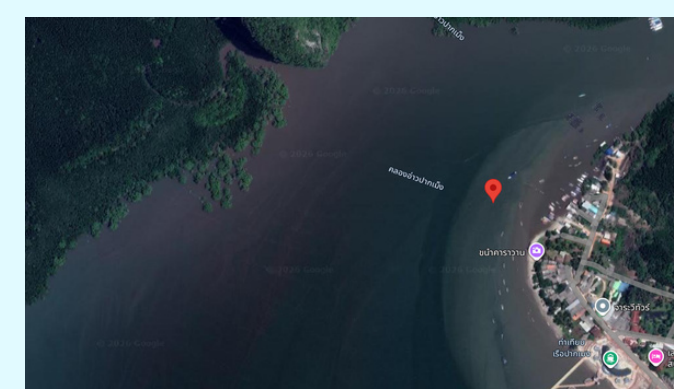
Seawater Dissolved Oxygen Study

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.

Map of Study Site(s)



The study was conducted at Khlong Son Beach, Sikao District, Trang Province, based on the following geographic coordinates:

- Latitude: 7.5097 N
- Longitude: 99.3103 E

GLOBE Badges

1.problem solver

Monitoring the quality of seawater at the beach, Had Khlong Son ,Sikao District, Trang Province, is necessary in order to use it as basic information for monitoring and conserving marine resources.

2.Associate

Ms. Anchalee Thong-o-iam, Ms. Amalina Panitprom, and Ms. Tassanan Kimkaew conducted this research to demonstrate the optimal seawater quality parameters at Khlong Son Beach, Sikao District, Trang Province, with the aim of supporting the monitoring and conservation of marine resources.

3.Data Scientist

This research focuses on evaluating the seawater quality at Khlong Son Beach, Sikao District, Trang Province. The study converts environmental conditions into a dataset through four key variables: salinity, temperature, dissolved oxygen (DO), and pH levels. Standardized measuring instruments were utilized to ensure data accuracy and reliability for further processing and analysis

Results

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

Material and Equipment



Salinity Refractometer



glass thermometer



dissolved oxygen



pH paper

Discussion

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

Conciusions

Based on the study of seawater quality at Had Klong 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).

Bibiography

Seawater Quality at Had Klong Son, Sikao District, Trang Province.

<http://pioneer.netserv.chula.ac.th/~rsompop/karuvijai50/%CA%D3%A4%D1%AD%20%C7%D4%AA%D1%C2%C3%D0%CB%D1%B4.pdf> (Wichairahat, 2007)

<https://warning.dmcrc.go.th/th/knowledge/detail/2785> (Department of Marine and Coastal Resources, 2013)