A Study of Water Quality in Water Bodies With and Without Mosquito Larvae in Thara Public Park, Krabi Province, Thailand

Presented by

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Introduction

Mosquitoes are important disease vectors, particularly in public areas such as parks. Stagnant or slow-moving water bodies provide suitable habitats for mosquito larvae. Water quality is therefore an important environmental factor that may be associated with the presence or absence of mosquito larvae.

- **Examples of aquatic habitats conducive to mosquito larval development.**

Fig.1 Examples of aquatic habitats conducive to mosquito larval development.

Objectives

1. To compare water quality parameters between water bodies with mosquito larvae and those without mosquito larvae in Thara Public Park.

2. To compare the occurrence of mosquito larvae in relation to measured water quality parameters.

Study Area

The study was conducted in Thara Public Park, Mueang Krabi District, Krabi Province, Thailand.

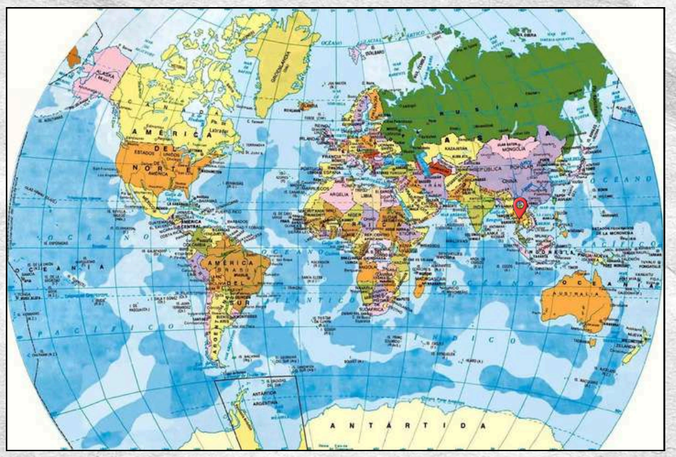


Fig .2 World Map

Fig .3 Thailand Map

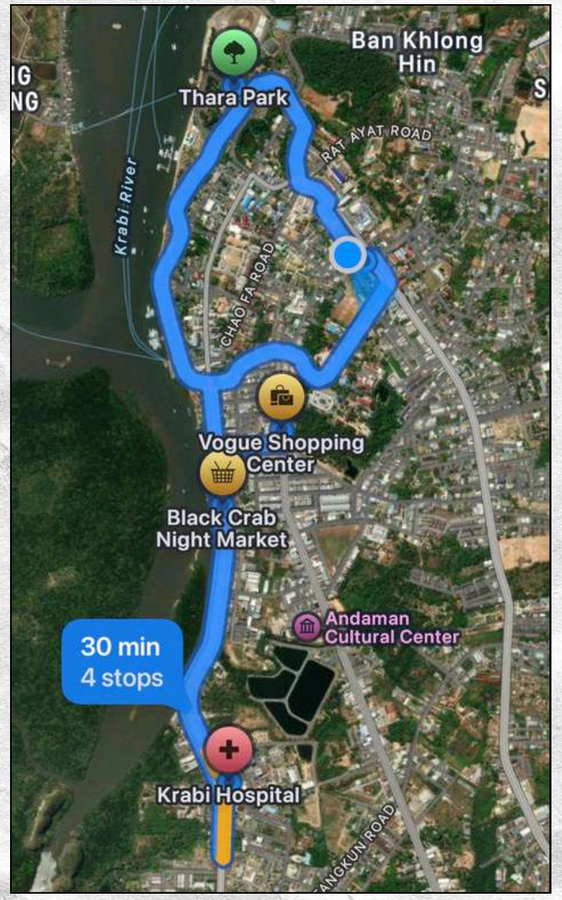


Fig .4 Thara park

Materials and Methods

1. Water bodies within Thara Public Park were surveyed.

PLASTIC BAG
RUBBER BAND
AND PEN

Telephone

PLASTIC SPOON
AND PLASTIC
CUP

SYRINGE AND
MEASURING SPOON

THERMOMETER

2.Water quality parameters, including temperature, pH, dissolved oxygen (D.O.), and salinity, were measured.

Use **SYRINGE AND MEASURING SPOON** dipper to collect water samples.

Put it into **plastic bag**, then tie it securely with **rubber band**

The collected water samples were analyzed to assess water quality, including measurements of **pH** , dissolved oxygen(**D.O.**), **salinity**, and **temperature**

Record the collected data **in the Observer application.**

Bring the samples back to measure **salinity** and record the results.

Classify all the collected data.

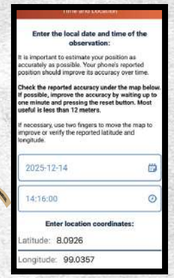
Data were collected during December and January.

3.Mosquito larvae were collected and identified using a handheld microscope and reference guides.

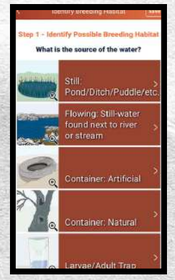
4.Geographic coordinates were recorded using the GLOBE Observer application.

1. Select the mosquito item.

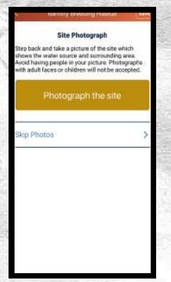
2. Select “New Mosquito Habitat Observation.”



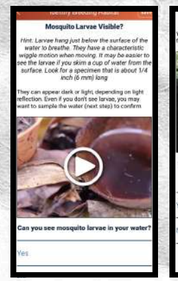
3. Record the date, time, geographic coordinates (latitude and longitude), and map location of the mosquito survey site.

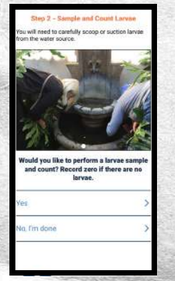


4. Select the type of container in which stagnant water and mosquito larvae were detected.

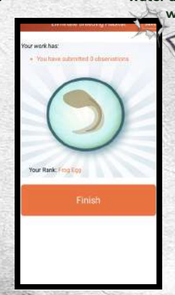


5. Take photographs of the container where mosquito larvae were found as supporting evidence.





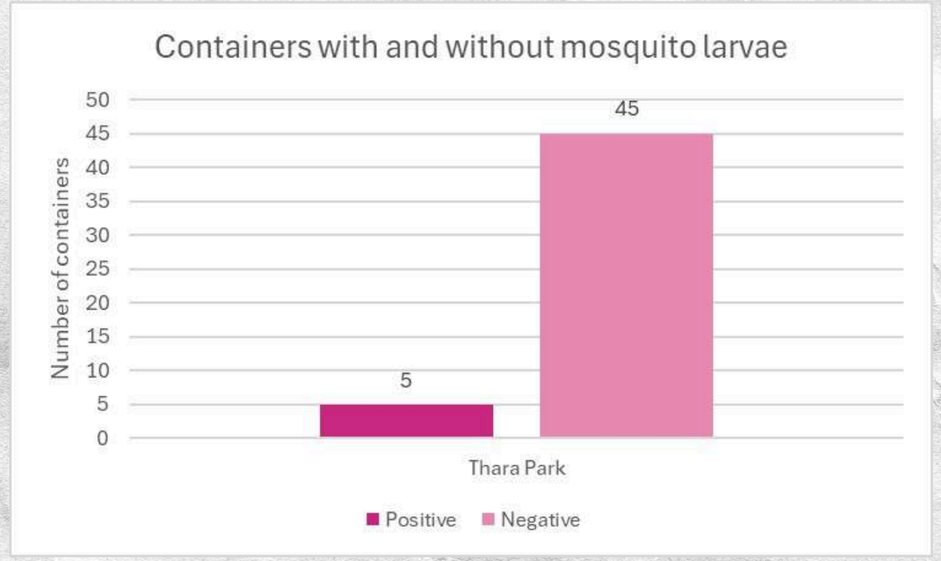
6. Complete all required questions accurately and truthfully according to the observed conditions.



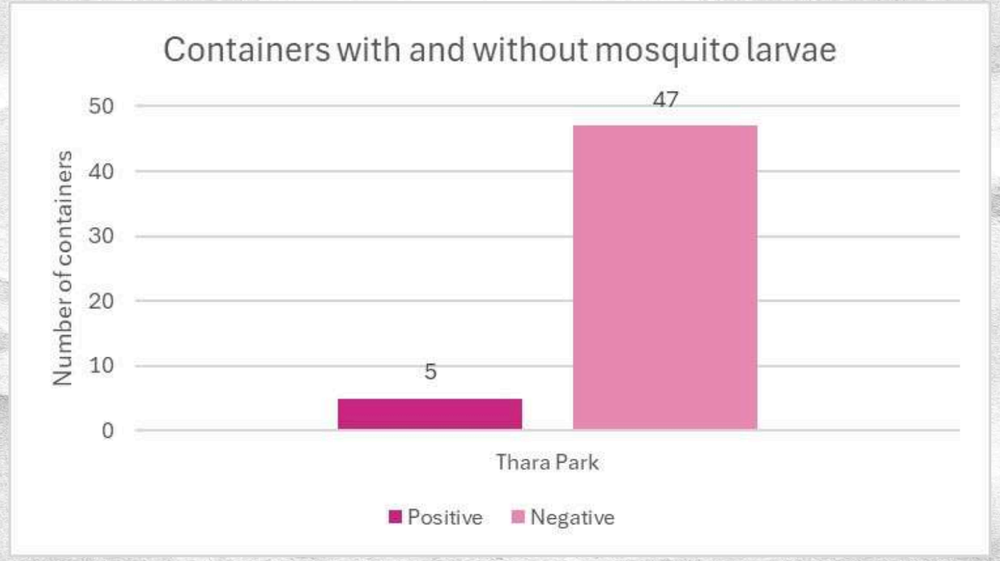
7. Save the recorded data to complete the observation process.

Results

- **Water bodies with vs without mosquito larvae**



Graphs of data collected during December



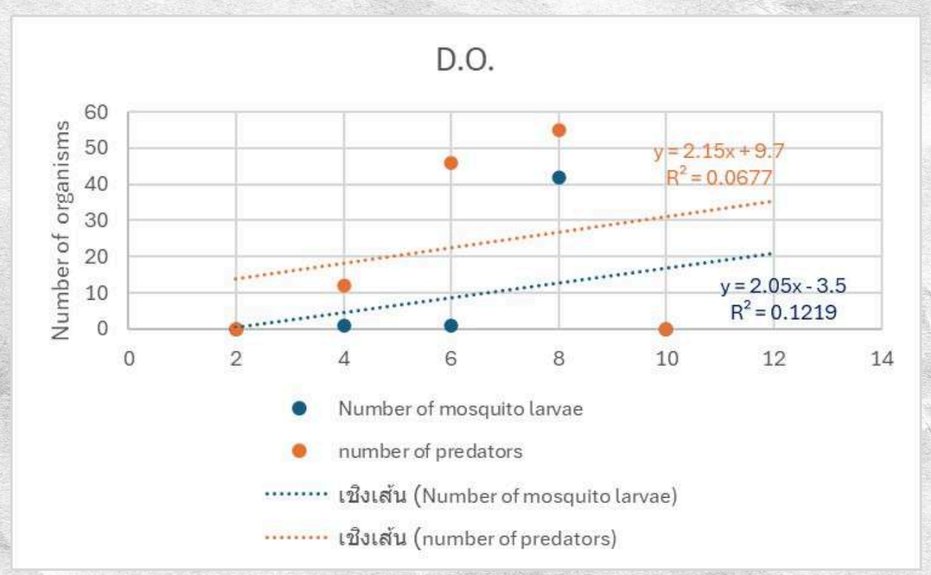
Graphs of data collected during January

Fig.5 Graph illustrating containers with and without mosquito larvae

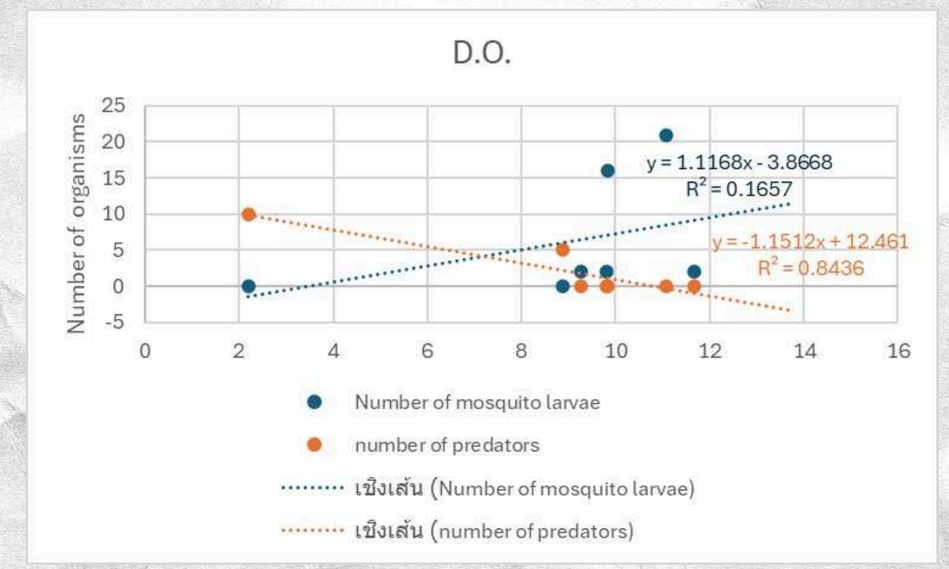
Differences in water quality parameters were observed between water bodies with and without mosquito larvae.

Results

- **Dissolved oxygen: larvae present vs absent**



Graphs of data collected during December



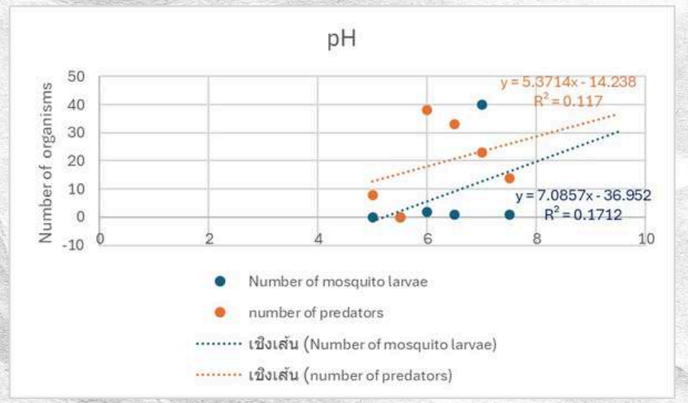
Graphs of data collected during January

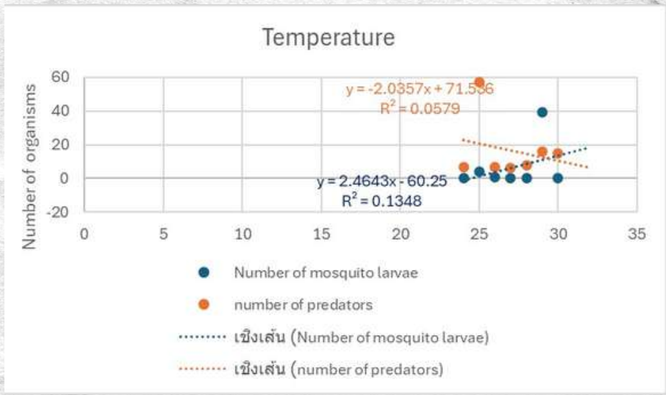
Fig.6 Graph showing the Distance (D.O.) of Thara Park.

Differences in water quality parameters were observed between water bodies with and without mosquito larvae.

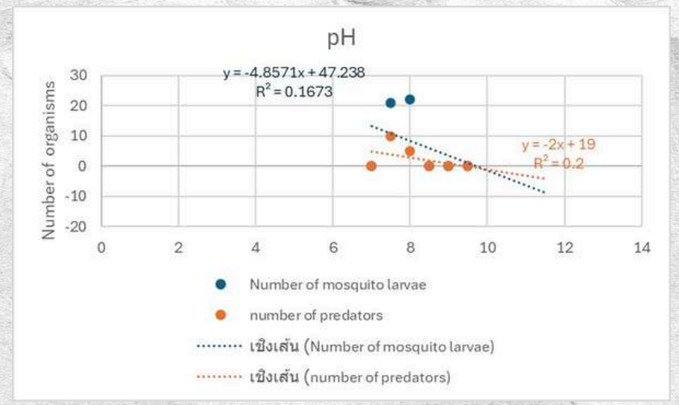
Results

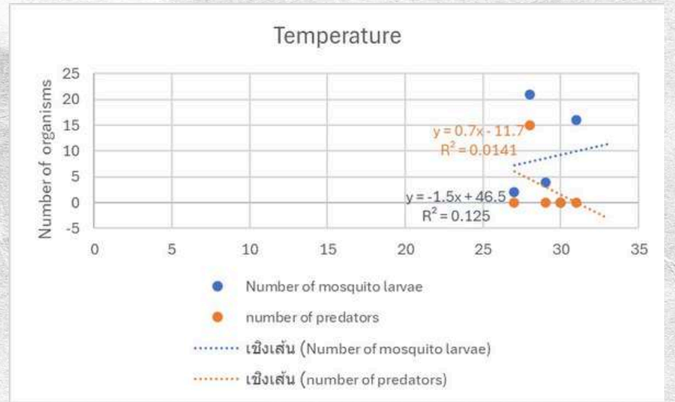
- **pH / Temperature**





Graphs of data collected during December





Graphs of data collected during January

Fig. 7 shows the salinity graph of Thara Park.

Differences in water quality parameters were observed between water bodies with and without mosquito larvae.

Conclusion

The study found differences in water quality parameters between water bodies with and without mosquito larvae in Thara Public Park. Water bodies where mosquito larvae were observed were generally characterized by stagnant or slow-moving water, while water bodies with better circulation were less frequently associated with mosquito larvae.

Differences in water quality parameters, including dissolved oxygen, pH, salinity, and temperature, were observed between the two types of water bodies. These findings indicate variations in water characteristics associated with the presence and absence of mosquito larvae based on the parameters examined in this study.

References

Thai Health Promotion Foundation. (2021). Mosquito-borne diseases. Retrieved January 2, 2026, from https://shorturl.asia/gVU0G

Piyaratne, M. K., Amerasinghe, F. P., & Amerasinghe, P. H. (2005). Physico-chemical characteristics of mosquito breeding habitats in Sri Lanka. Journal of Vector Borne Diseases, 42(2), 61–67

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Project Team