Study of Factors Affecting the Density and Size of Hammer Clam in Different Ages of Mangrove Forests

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Introduction

Hammer clam

Research Questions

Do salinity, soil temperature and soil quality in mangrove forests of different ages affect the density and size of Hammer clams ?

Materials

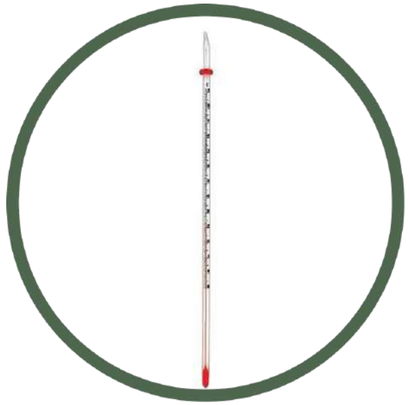
Soil color book

Quadrant

Straw rope

pH meter

N P K test kit



Thermometer

Salinity meter

Flages

Vernier caliper

Methods

study site

mangrove forest site 2

mangrove forest site 1

Take Pictures N-E-S-W

mangrove forest site 1

Take Pictures N-E-S-W

mangrove forest site 2

Data collection of soil

Specify an area to collect data size of 10 x 10 meters

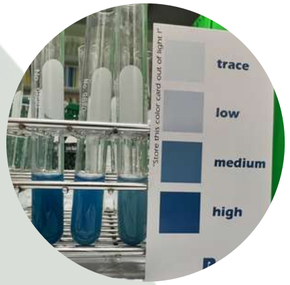
Record the land cover using GLOBE Observer Application .

Take a soil sample from 5 sampling point to examine soil in the laboratory

Measure the temperature and salinity of the soil

Using GLOBE method to do soil testing

pH



nutrients

organic matter

Data collection of Hammer clam

Use a 50 x 50-centimeter grid,

randomly placed in the sampling area 10 times

Use a vernier caliper to measure

the width and length of the Hammer clam

Results

Study of salinity Soil temperature and pH

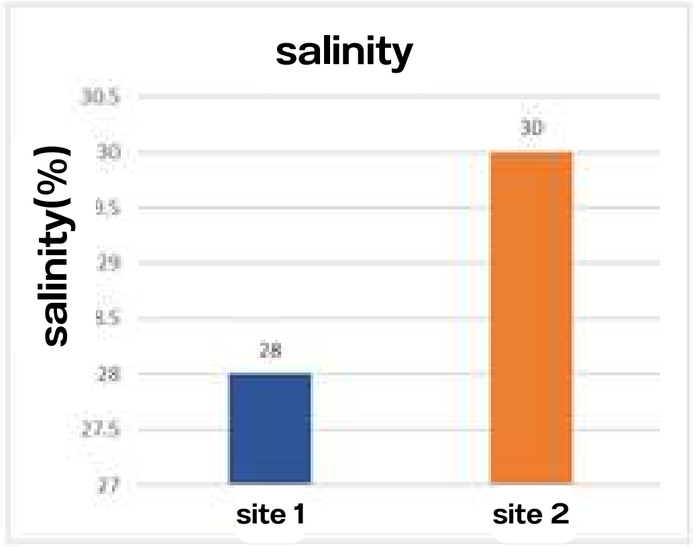


Figure 1 shows Soil salinity

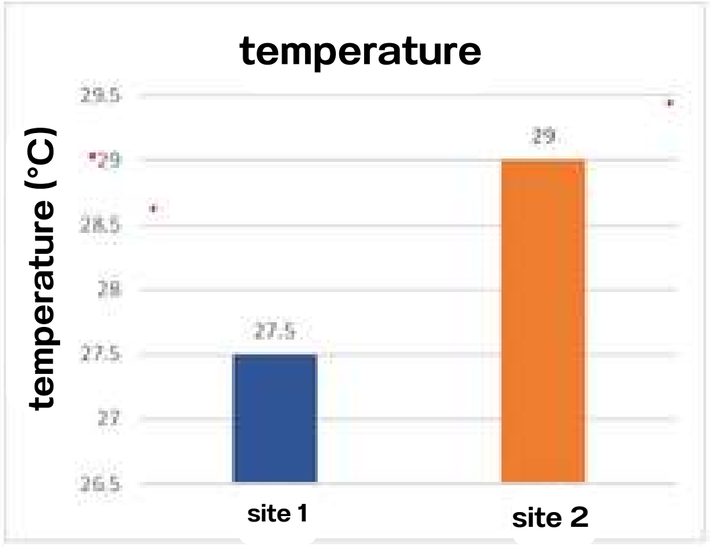


Figure 2 shows Soil Temperature.

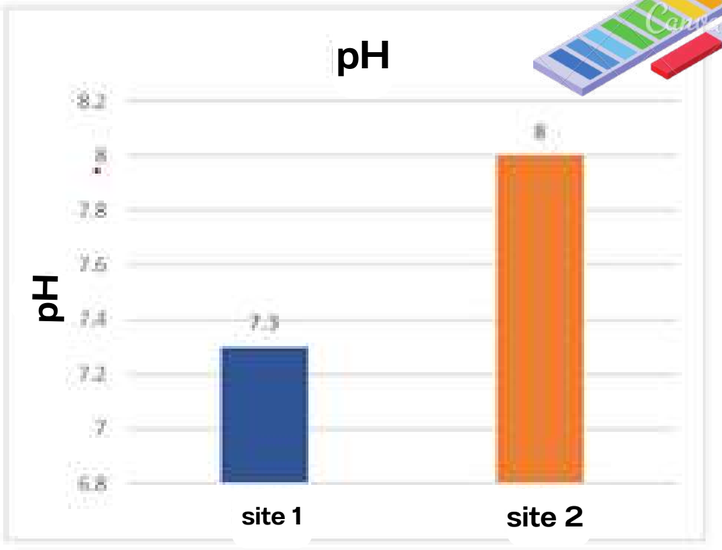


Figure 3 shows Soil pH.

Results

Study of nutrients and organic matter in the soil

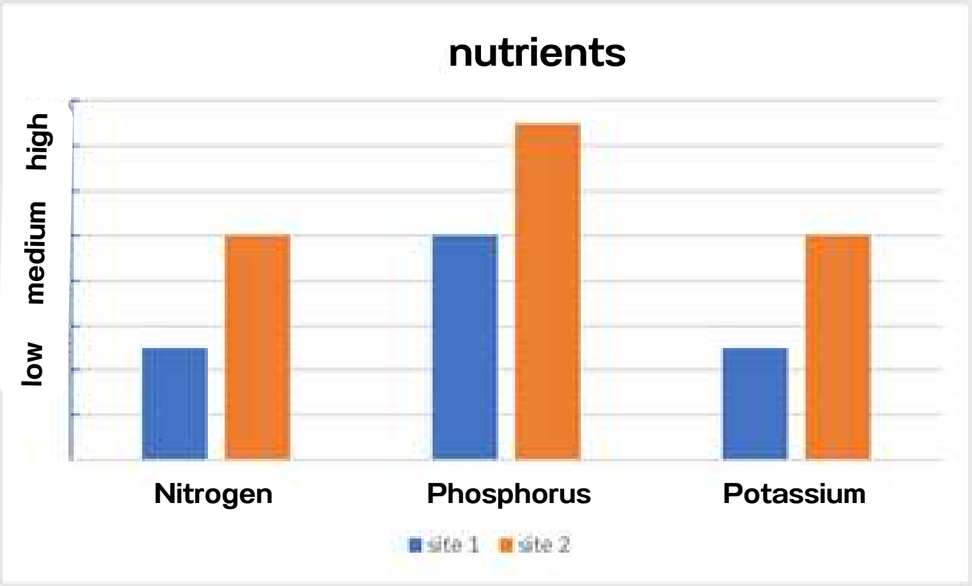


Figure 4 shows the nutrients in the soil

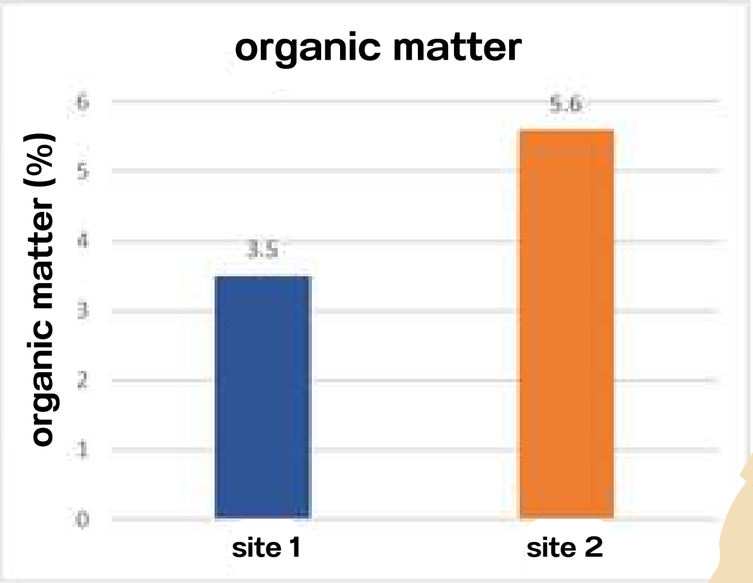


Figure 5 shows the amount of organic matter in the soil

Results

Study of nutrients and organic matter in the soil

Study area	Number of Hammer clam (units/square meter)	Hammer clam size (cm)	
		Width (cm)	Length(cm)
mangrove forest site 1	6.2±0.35	4.18±0.42	7.06±0.34
mangrove forest site 2	14.8±0.17	4.82±0.19	8.22±0.27

Figure 6 Sizes and numbers of Hammer clam

Conclusion

The 10-year-old mangrove forest (mangrove forest site 2) is suitable for establishing a habitat and food source for the Hammer clam.

As a result, the population density of the Hammer clam The 10-year-old mangrove forest (mangrove forest site 2) is higher and the Hammer clam in that area are larger thanThe 30-year-old mangrove forest (mangrove forest site 1)

Benefit

The purpose of this study was to investigate whether the salinity values of mangrove forests of different ages were investigated, whether there were differences in temperature and soil quality, and how they affected the population density and size of the Hammer clam in the mangroves in order to be used as a guideline for the conservation of Hammer clam species and areas in the mangrove forest in the future.

Acknowledgements

Institute for the Promotion of Teaching Science and Technology

Walailak University

Ban Mod Tanoi Community

Princess Chulabhorn Science High School Trang

Citations

Alongi, D. M. (1994). The role of bacteria in nutrient recycling in tropical mangrove and other coastal benthic ecosystems. Hydrobiologia, 285 : 19-32.

Ahmad Ismail,Aliteza Safahieh(2005).Copper and Zinc in intertidal surface sediment and Telescopium telescopium from Lukut River, Malaysia . Retrieved November 25, 2022. https://scholar.google.co.th/scholarhlTelescopium+telescopium+research&btnG=

Dafit Ariyanto(2019).Food preference on Telescopium telescopium (Mollusca: Gastropoda)based on food sources in mangrove ecosystem.Accessed on 9 November2022. http://www.plantarchives.org/PDF%2019-1/913-916%20(4553).pdf.

Department of Global Studies for Environment Development (GLOBE) IPST. Measurement principle. Retrieved December 1, 2022. https://globefamily.ipst.ac.th/globe-protocols.

Husein et ,. al. 2017. Study of density and distribution of Mangrove Snail (Telescopium telescopium) in mangrove waters of Kaledupa District, Wakatobi District. Jurnal Mangrove. 2 (3): 235-242.

Malik Wajid (2021). A Size-dependent Bioaccumulation of Metal Pollutants, Antibacterial and Antifungal Activities of Telescopium telescopium, Nerita albicilla and Lunellacoronata. Retrieved November 11, 2022. https://www.sciencedirect.com/science/article/pii/S138266892100140X.

THANK YOU