



**MOSQUITO LARVAL
PREDATOR DIVERSITY
AND ITS ABUNDANCE**

Presented by Group4

Activity pictures





Overview

- Introduction
- Materials and Methods
- Study site
- Results and discussion
- Conclusion
- References
- Acknowledgements

Introduction



DENGUE FEVER PATIENT STATISTICS 2003-2019



Source: Division of Vector-Borne Diseases, Ministry of Public Health

PRACHATA

Introduction

- The role of predatory aquatic insects in the natural regulation of mosquito larvae has been reported by many researchers.
- However, predators vary markedly in the different habitats that immature and adult mosquitoes frequent.
- Past experimental studies confirmed that predation on immature mosquitoes by macroinvertebrates can be a major driving force in controlling the population size of mosquitoes.

Introduction

Examples of mosquito larvae predators



Water Striders
(จิ้งจกน้ำ)



Bezzia expolita
(มวนน้ำ)



Notonecta glauca
(มวนกรรเชียง)

Objectives

- To study the role of predators in influencing the control of the number of *Aedes* mosquito larvae.
- To study whether predators directly or indirectly influence mosquito population dynamics.
- To study predators, it may be possible to limit the number of *Aedes* mosquito larvae and reduce the density of adults.

Materials and Methods

3 Study sites in Phetchaburi

- away from the dam 1 km.
- away from the dam 3 km.
- away from the dam 5 km.



Study Sites



Fig.1 map thailand



Fig.2 map Phetchaburi

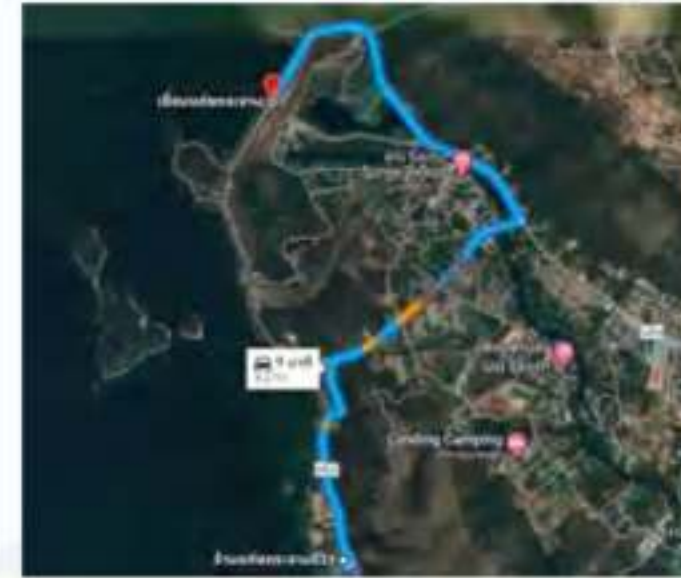


Fig.3 away from the dam 1 km.

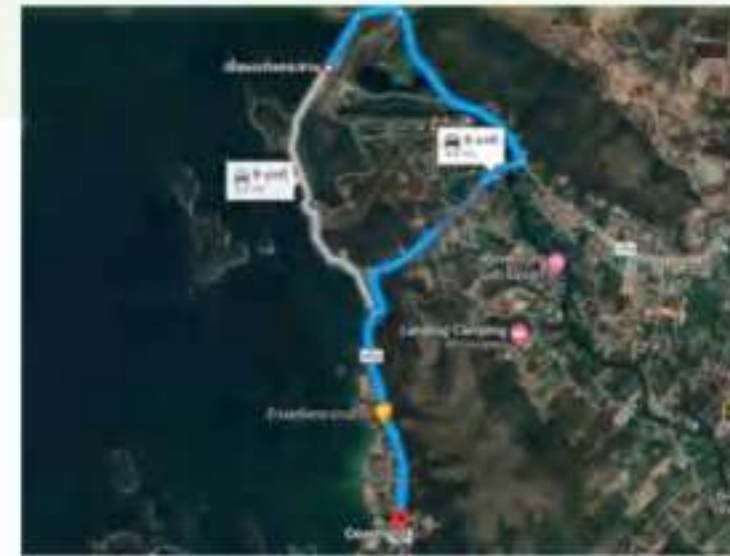


Fig.4 away from the dam 3 km.

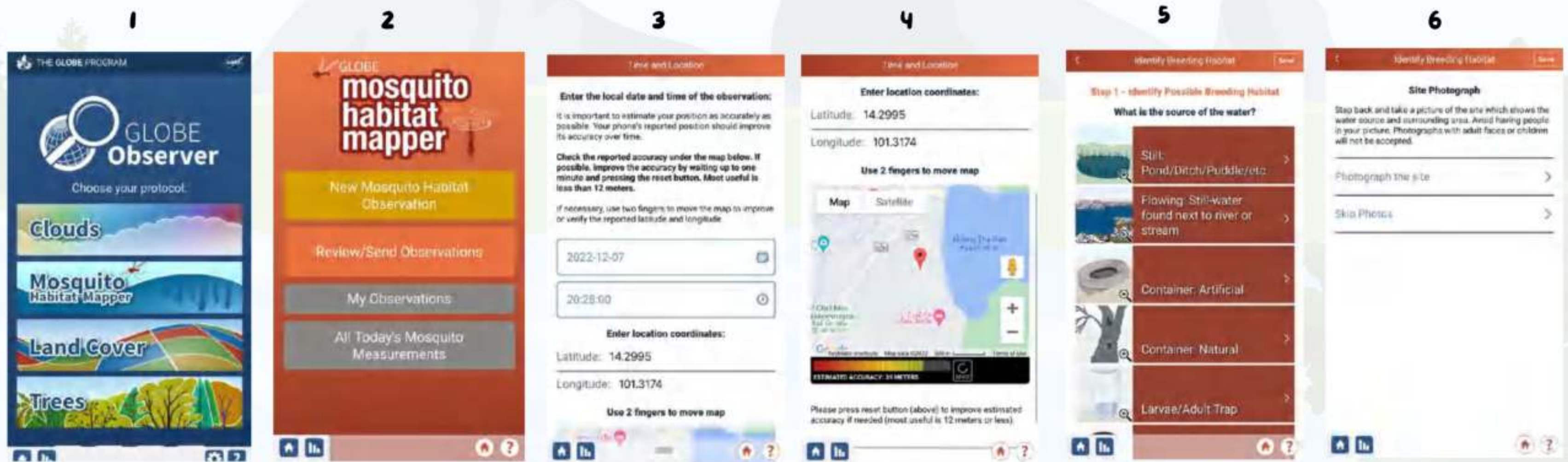


Fig.5 away from the dam 5 km.



Methods

GLOBE Observer: mosquito habitat mapper app



1. Choose mosquito item

2. Select the New Mosquito of observation habitat.

3,4 Observe the date and time and the latitude and longitude coordinates of the place where the mosquitoes were found.

5. Choose a container or source where mosquitoes are found.

6. Take a photo of the mosquito larvae found in the container.

Fig.6

Methods

Man made / natural containers



Man made containers (site 1)



Natural containers (site 1)

Fig.7

Methods

Man made / natural containers



Man made containers (site 2)

Fig.8

Methods

Man made / natural containers



Man made containers (site3)

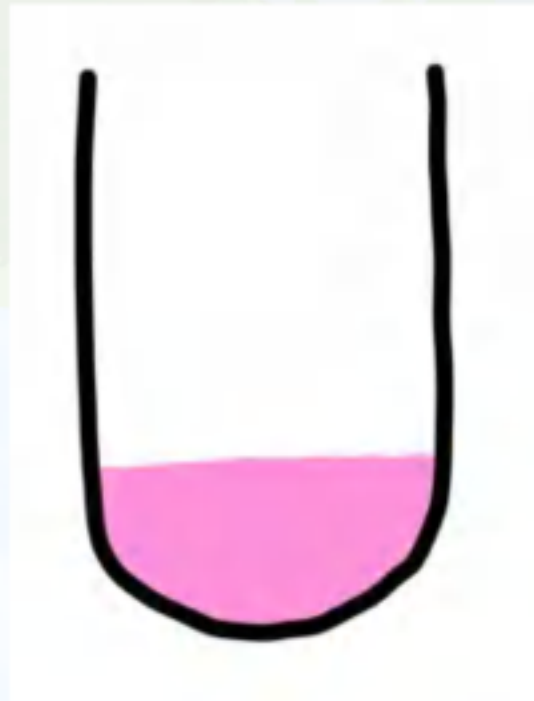


Natural containers (site 3)

Fig.9

Methods

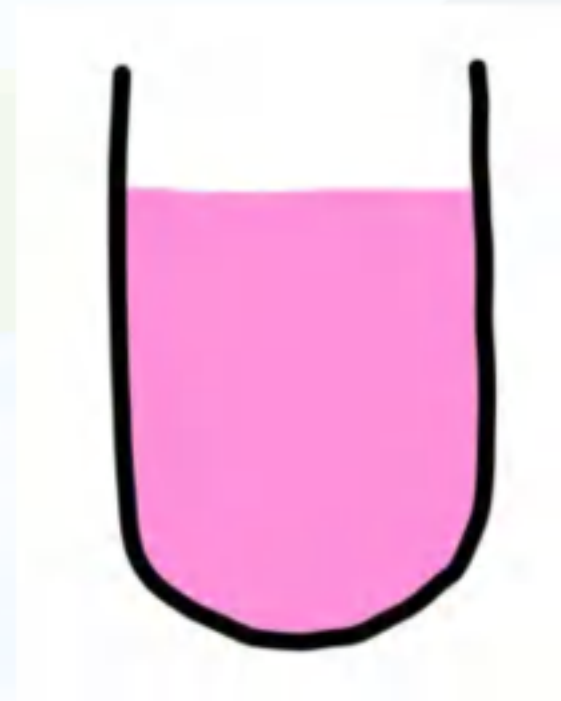
Water Levels
(0-25%, 26-50%, 51-75%, 76-100%)



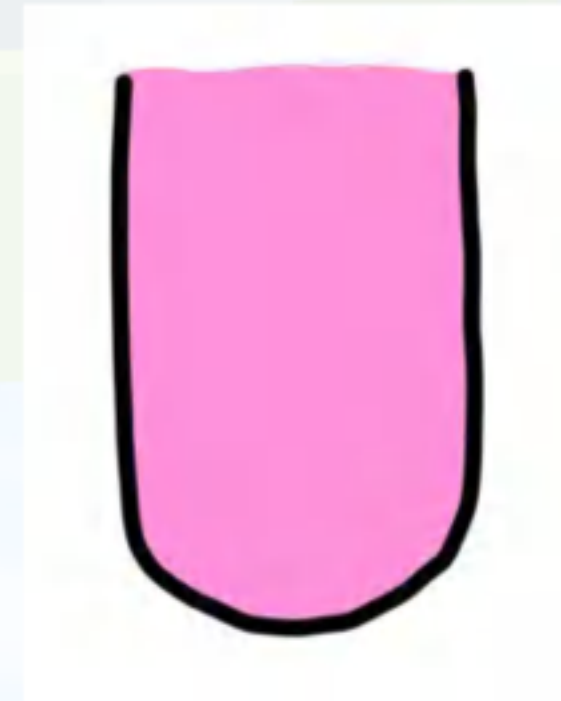
0-25%



26-50%



51-75%



76-100%

Fig.10

Methods



Fig.11 Identifying different types of mosquitoes

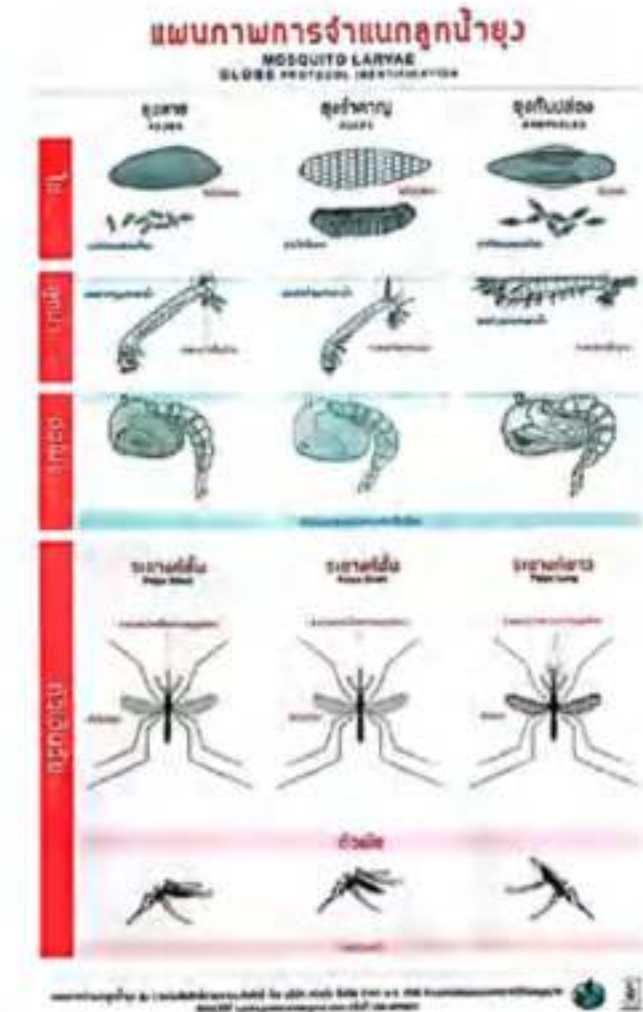


Fig.12 Identifying different types of mosquitoes

Methods

Species of larvae mosquitoes



Fig.13 *Genus Culex*



Fig.14 *Aedes albopictus*



Methods

Species of larvae mosquitoes



Fig.15 *Armigeres subalbatus*

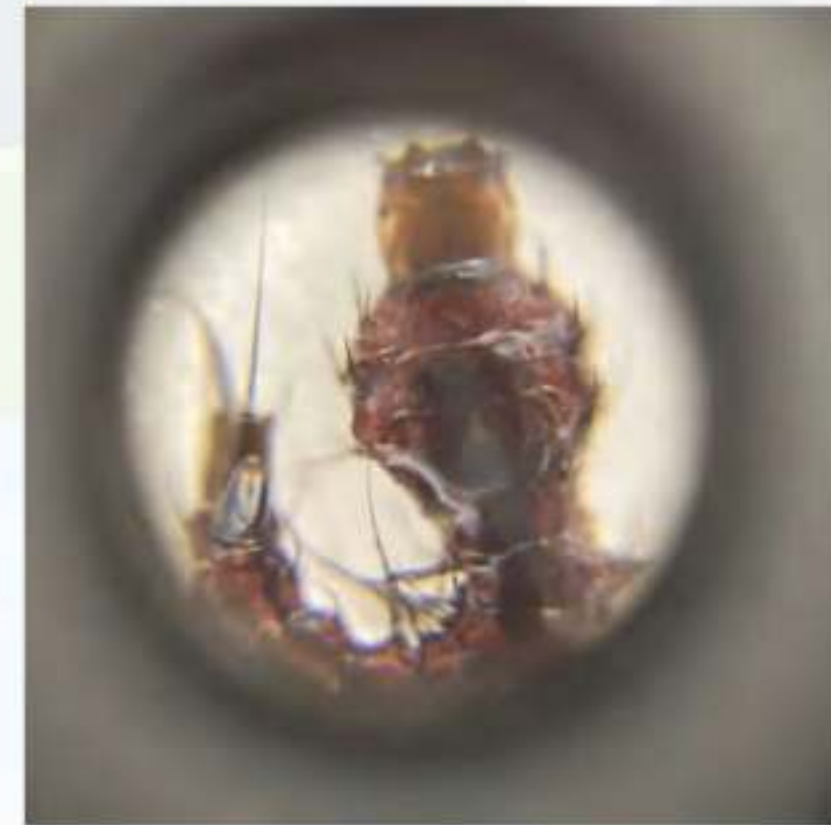


Fig.16 *Toxorhynchites*

Methods

Species of larvae mosquitoes



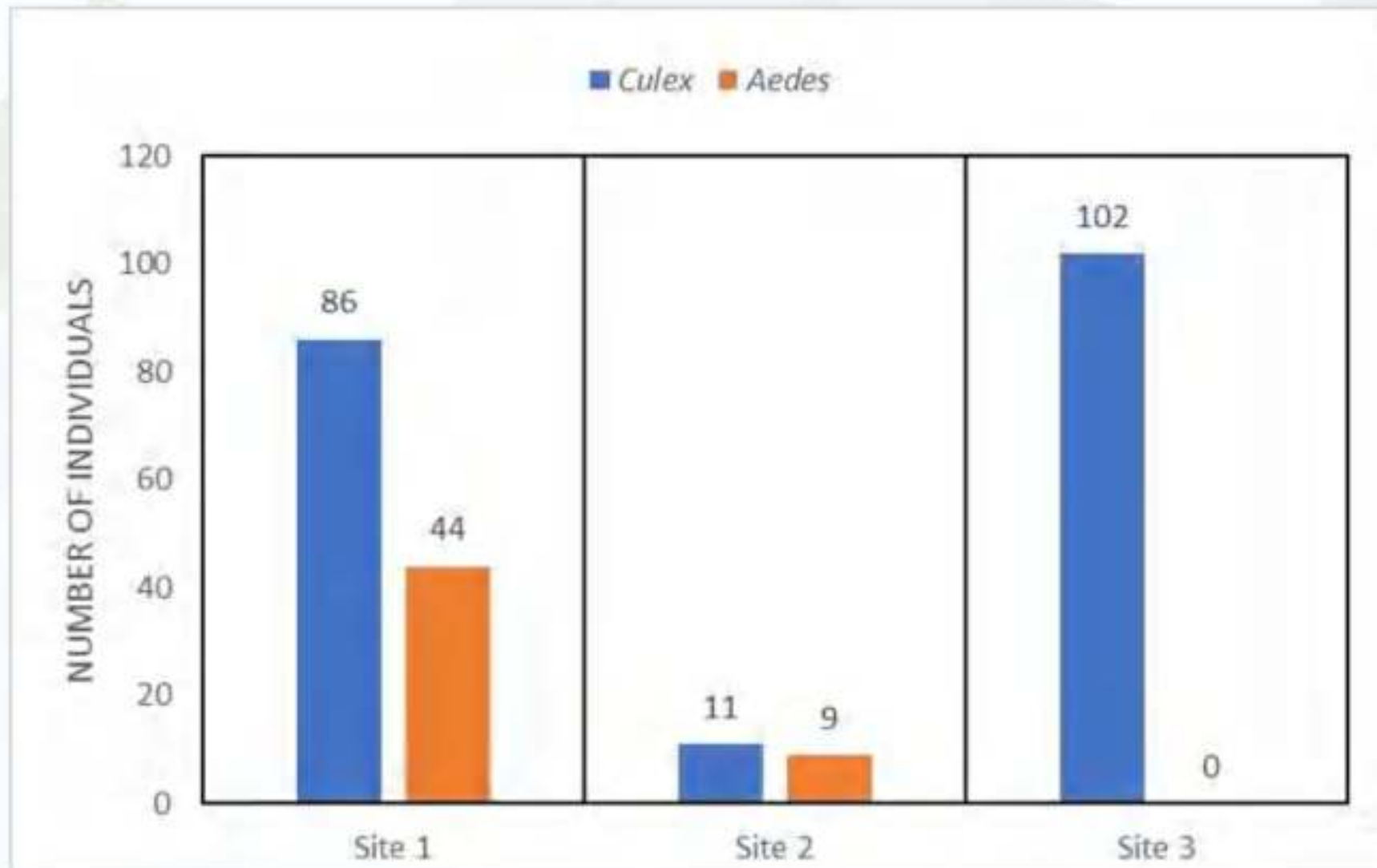
Fig.17 *Veliidae*
(small water strider)



Fig.18 *Veliidae*
(small water strider)

Results and discussion

Species of larvae mosquitoes



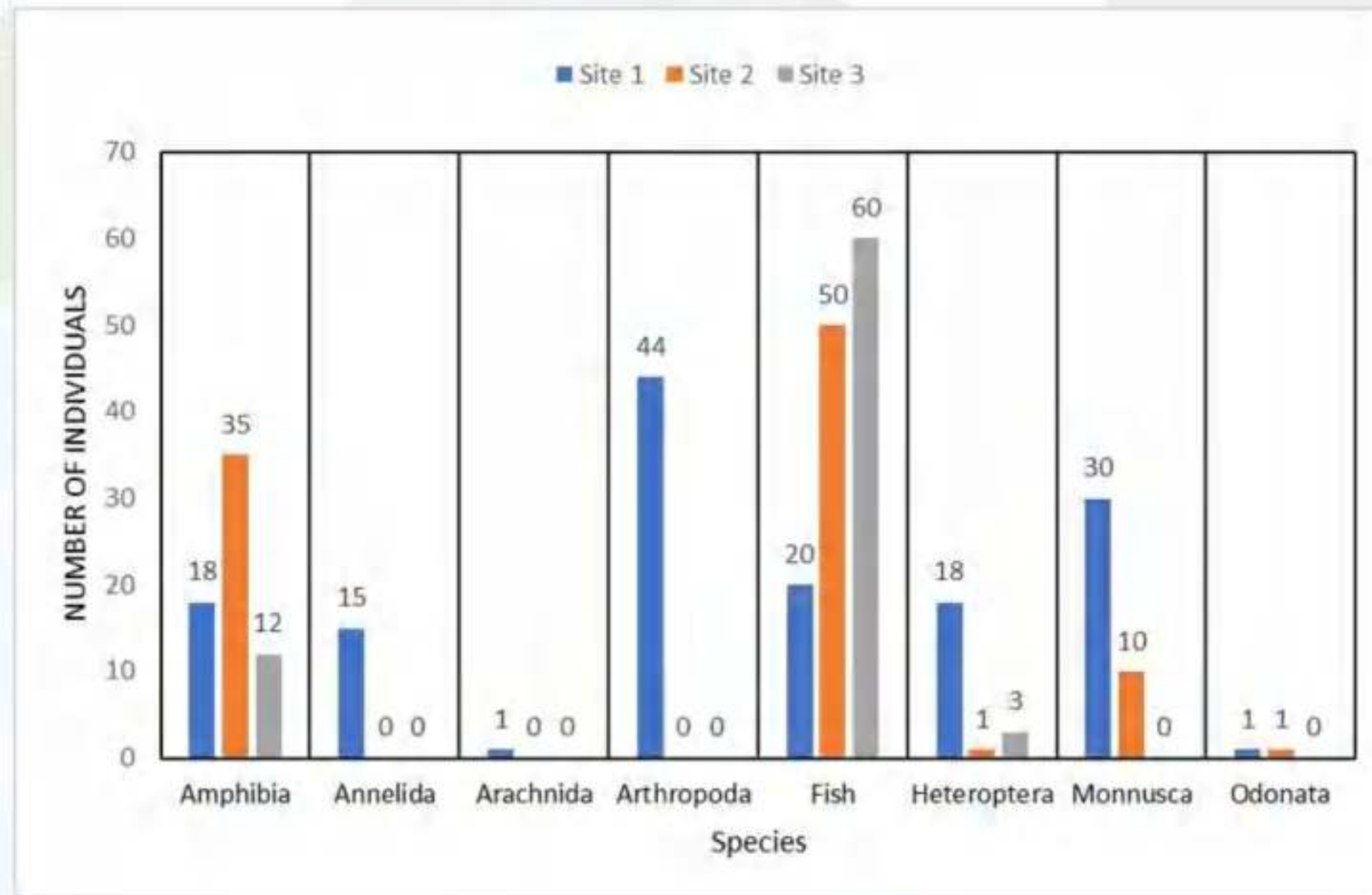
Site 1 found 86 Culex mosquito larvae and 44 Aedes mosquito larvae.

Site 2 found 11 Culex mosquito larvae and 9 Aedes mosquito larvae.

Site 3 found 102 Culex mosquito larvae, but no Aedes larvae were found.

Results and discussion

Species of predators



Site 1 The most predators species are Arthropoda.

Site 2 the most predators species are Fish.

Site 3 the most predators species are also Fish.

Results and discussion

House index



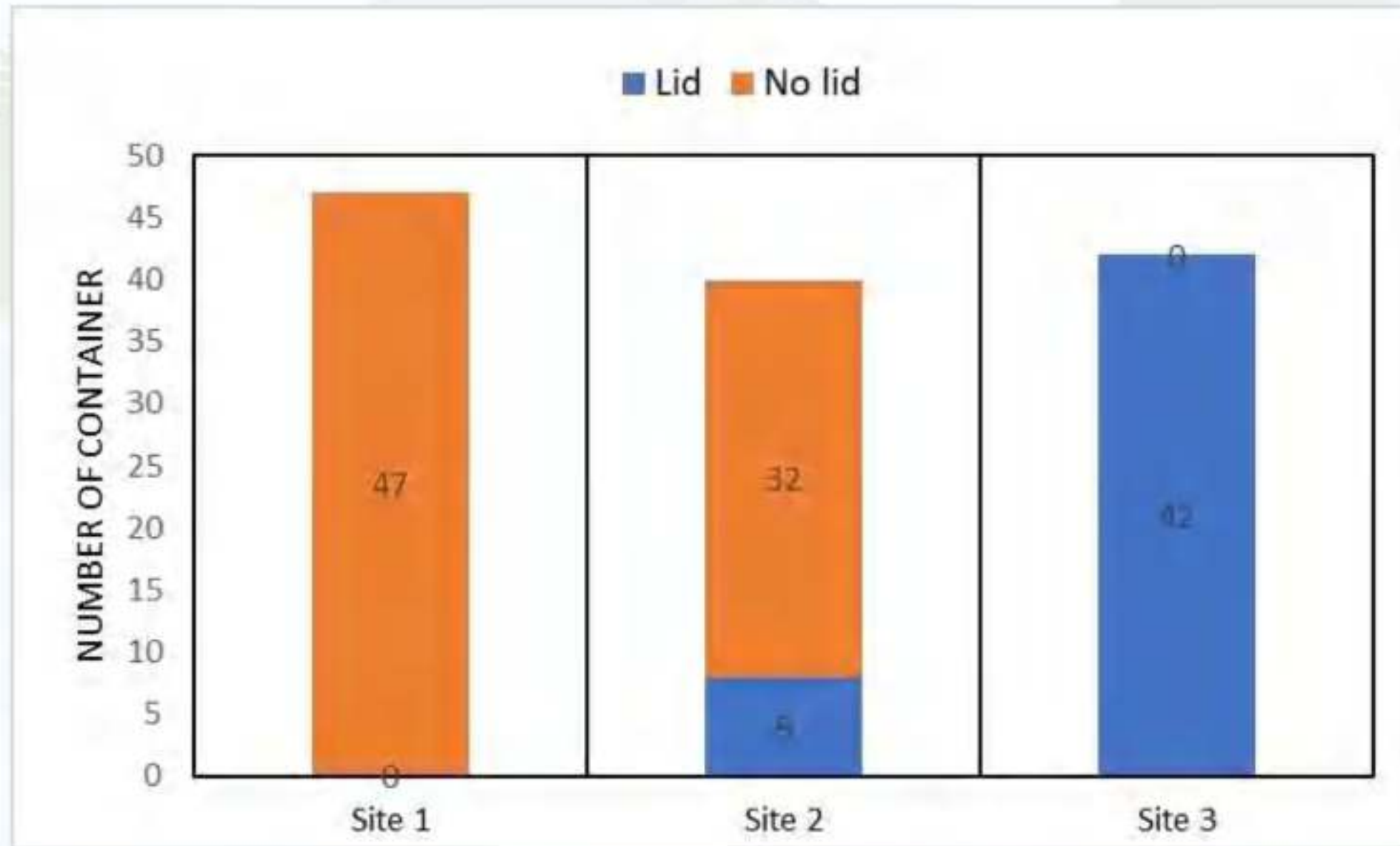
Site 1 from a total of 30 house Found 12 containers with larvae and Found 18 containers that does not have larvae.

Site 2 from a total of 30 house Found 10 containers with larvae and Found 20 containers that does not have larvae.

Site 3 from a total of 30 house Found 9 containers with larvae and Found 21 containers that does not have larvae.

Results and discussion

Lid / No lid containers



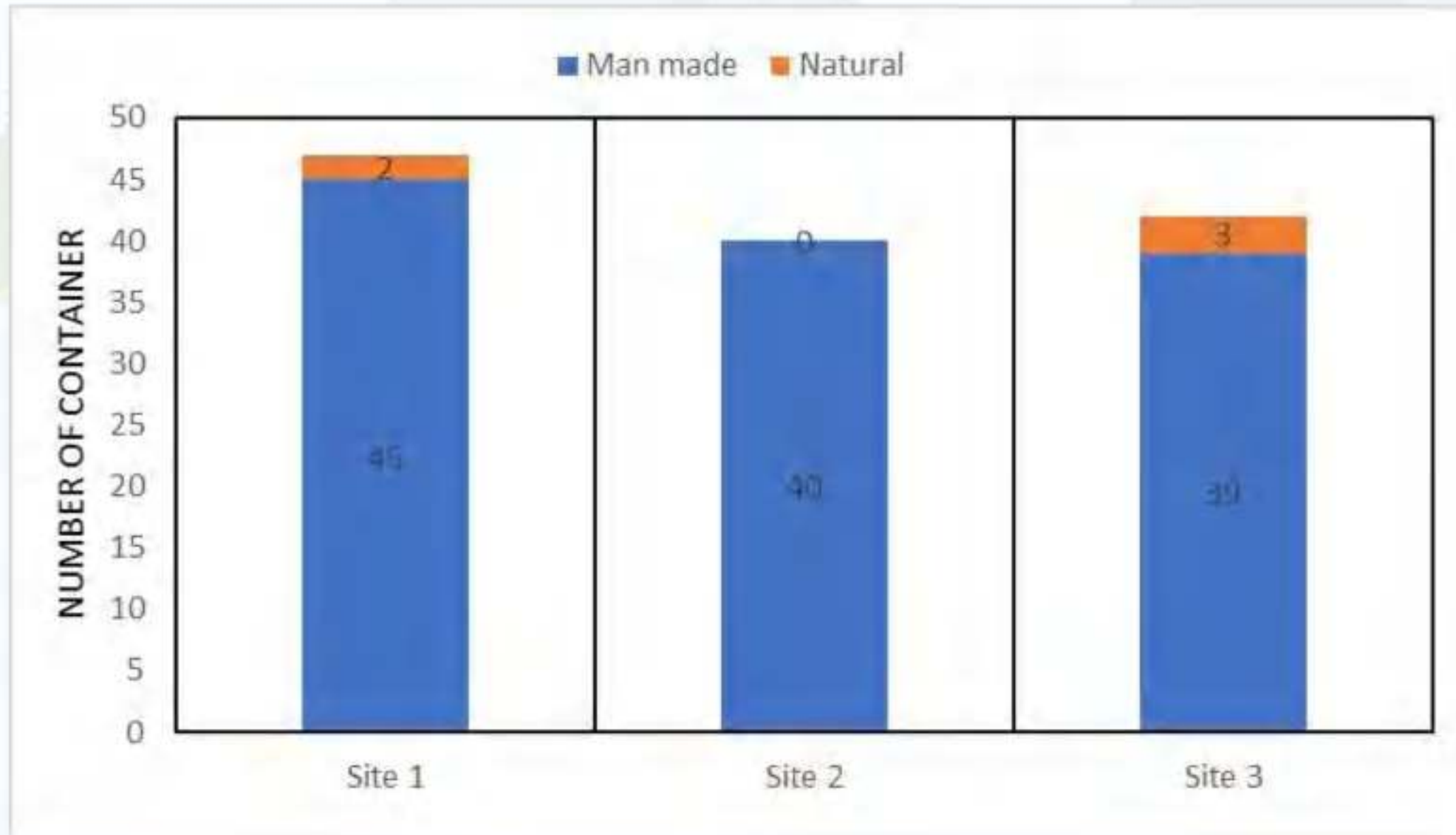
Site 1 found 47 containers that doesn't have a lid.

Site 2 found 32 containers that doesn't have a lid and found 8 containers that have a lid.

Site 3 found 42 containers that have a lid.

Results and discussion

Man made / natural containers



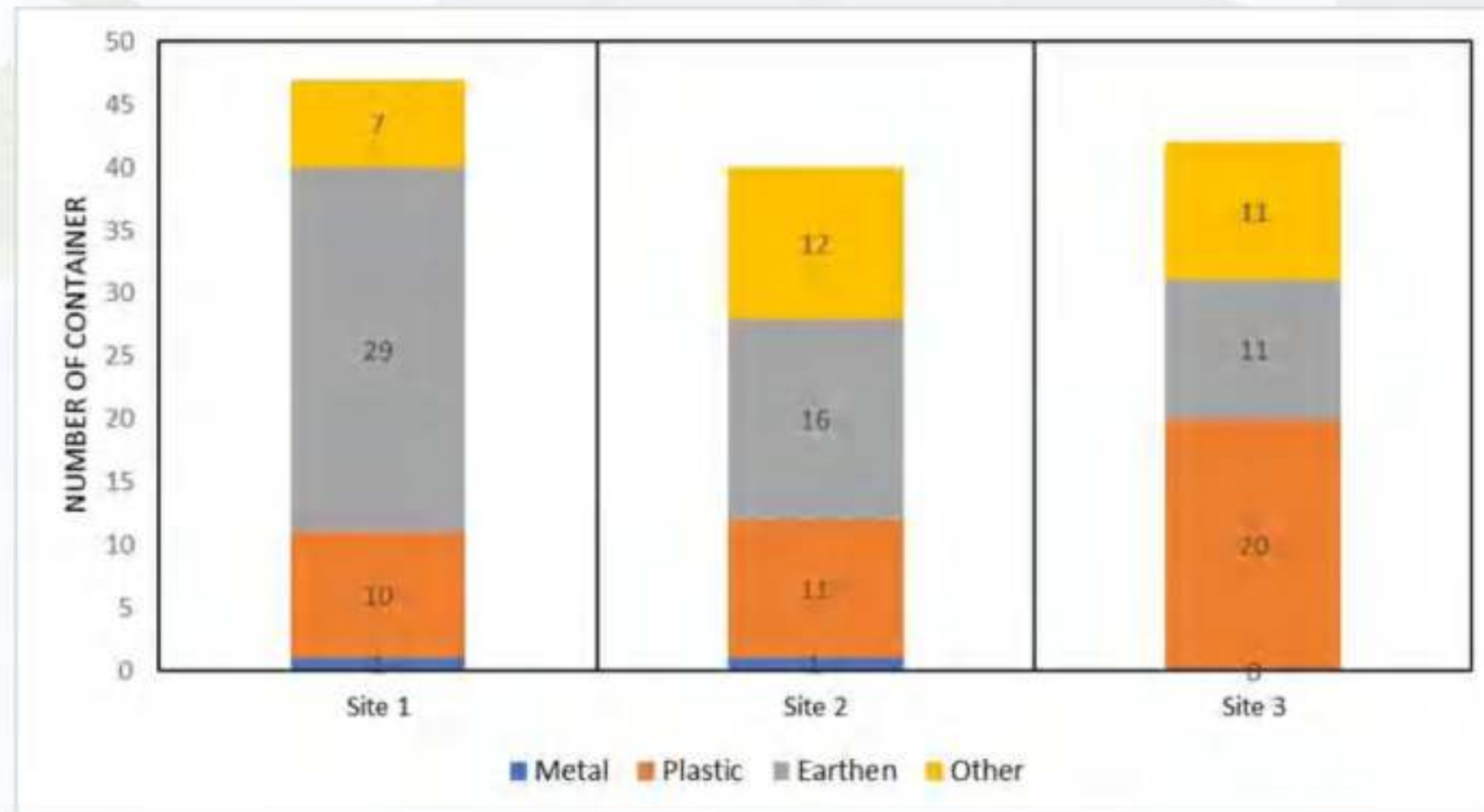
Site 1 Found 45 man made containers and found 2 natural containers.

Site 2 Found 40 man made containers and not found natural containers.

Site 3 Found 39 man made containers and not found natural containers.

Results and discussion

Metal plastic earthen / other containers



Site 1 found 1 Metal ,10 Plastic, 29 Earthen and 7 Others.

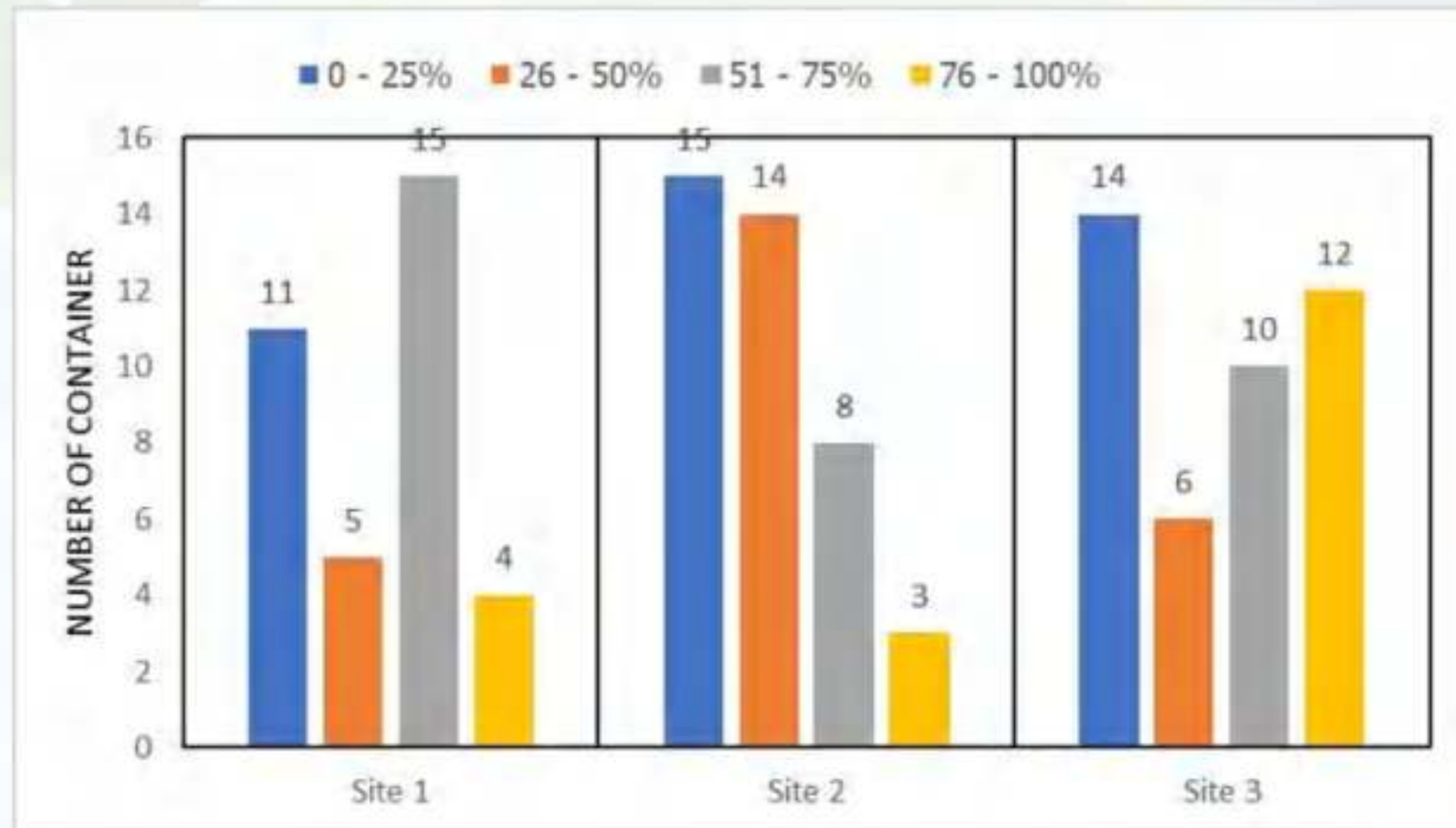
Site 2 found 1 Metal, 11 Plastic, 16 Earthen 7 and 12 Others.

Site 3 not found Metal,found 20 Plastic, 11 Earthen and 11 Others.

Results and discussion

Water Levels

(0-25%, 26-50%, 51-75%, 76-100%)



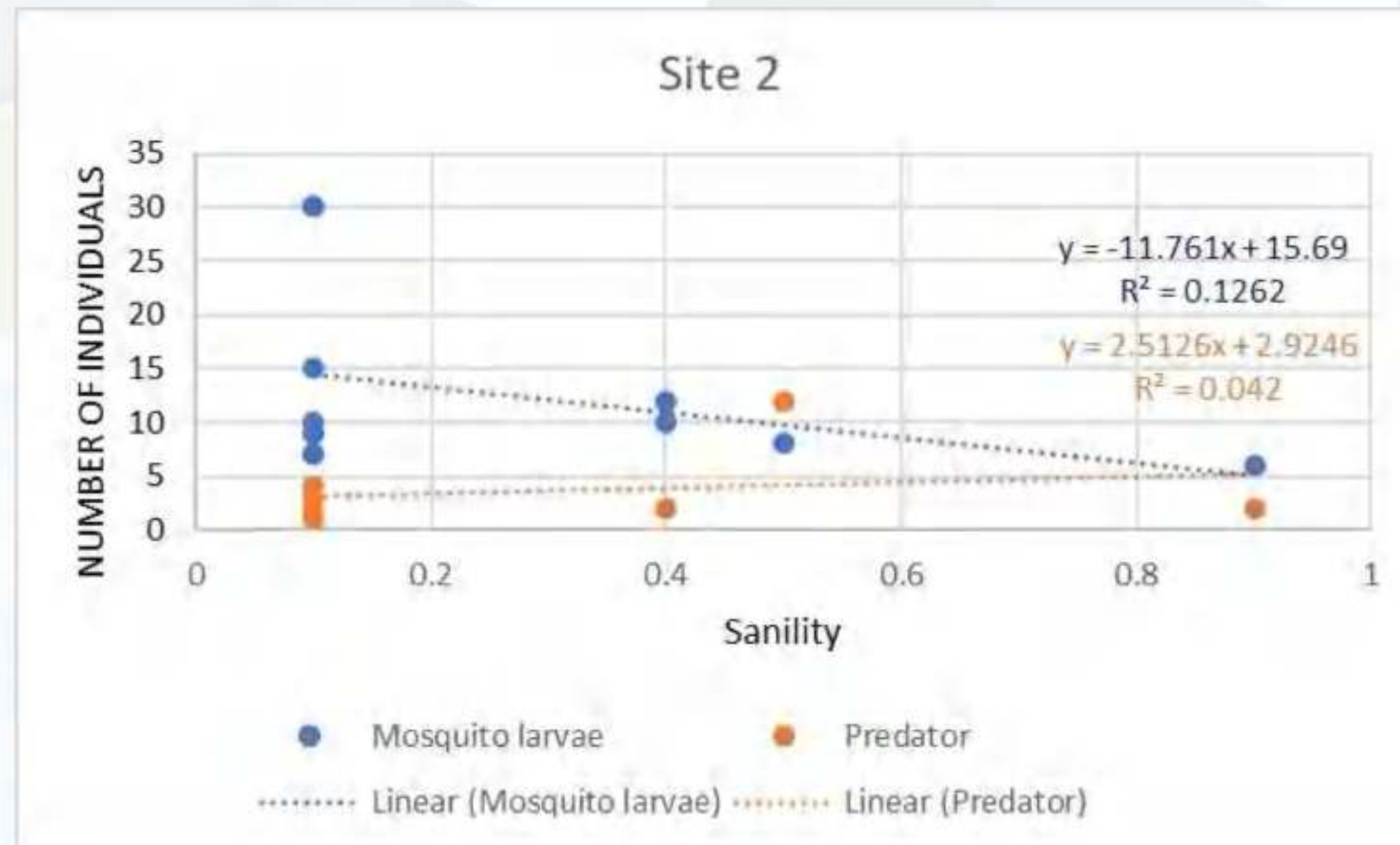
Site 1 found the highest water content of 51-75%.

Site 2 found the highest water content of 0-25%.

Site 3 found the highest water content of 0-25%.

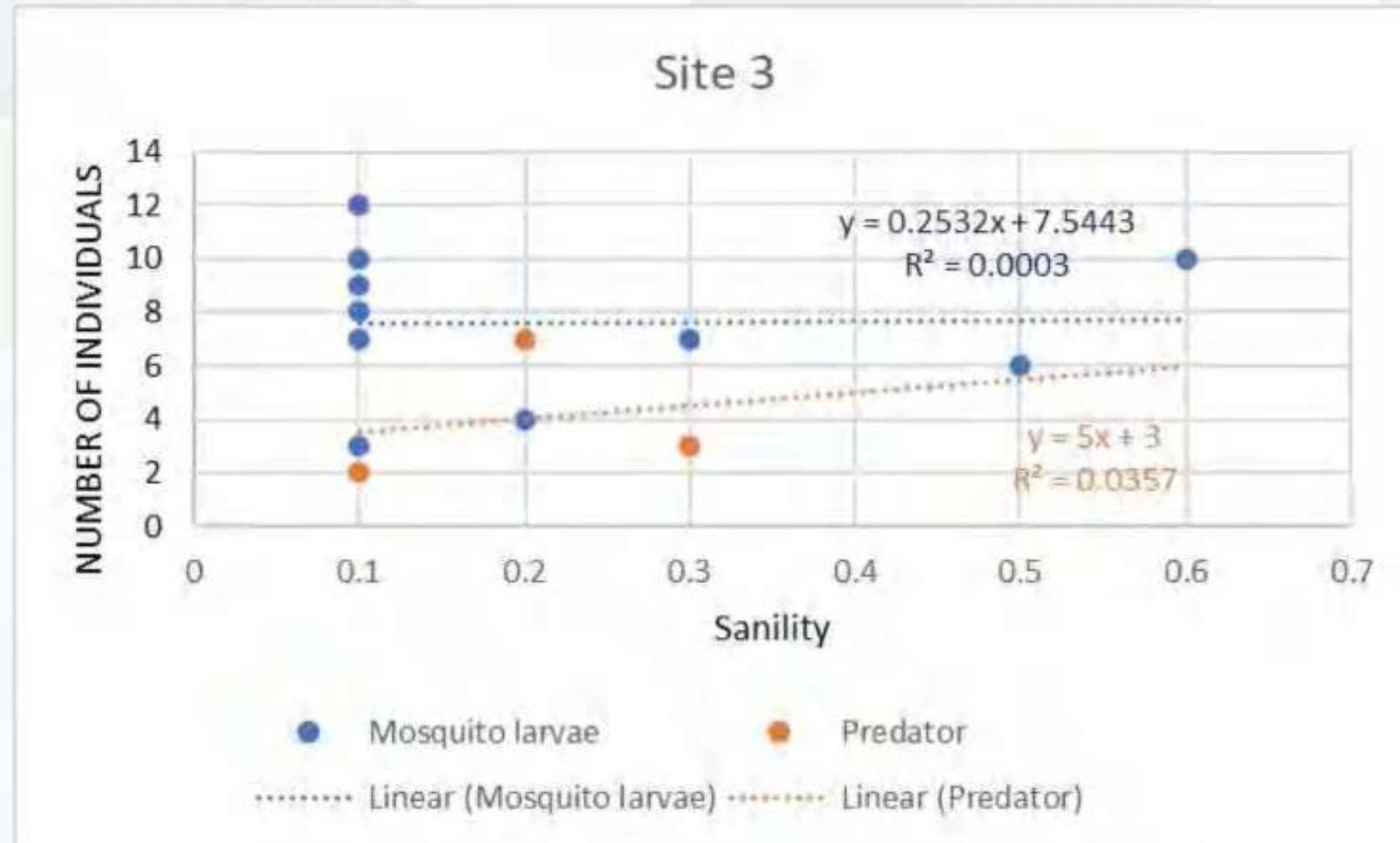
Results and discussion

Compare water pH and the number of mosquito larvae and predators.



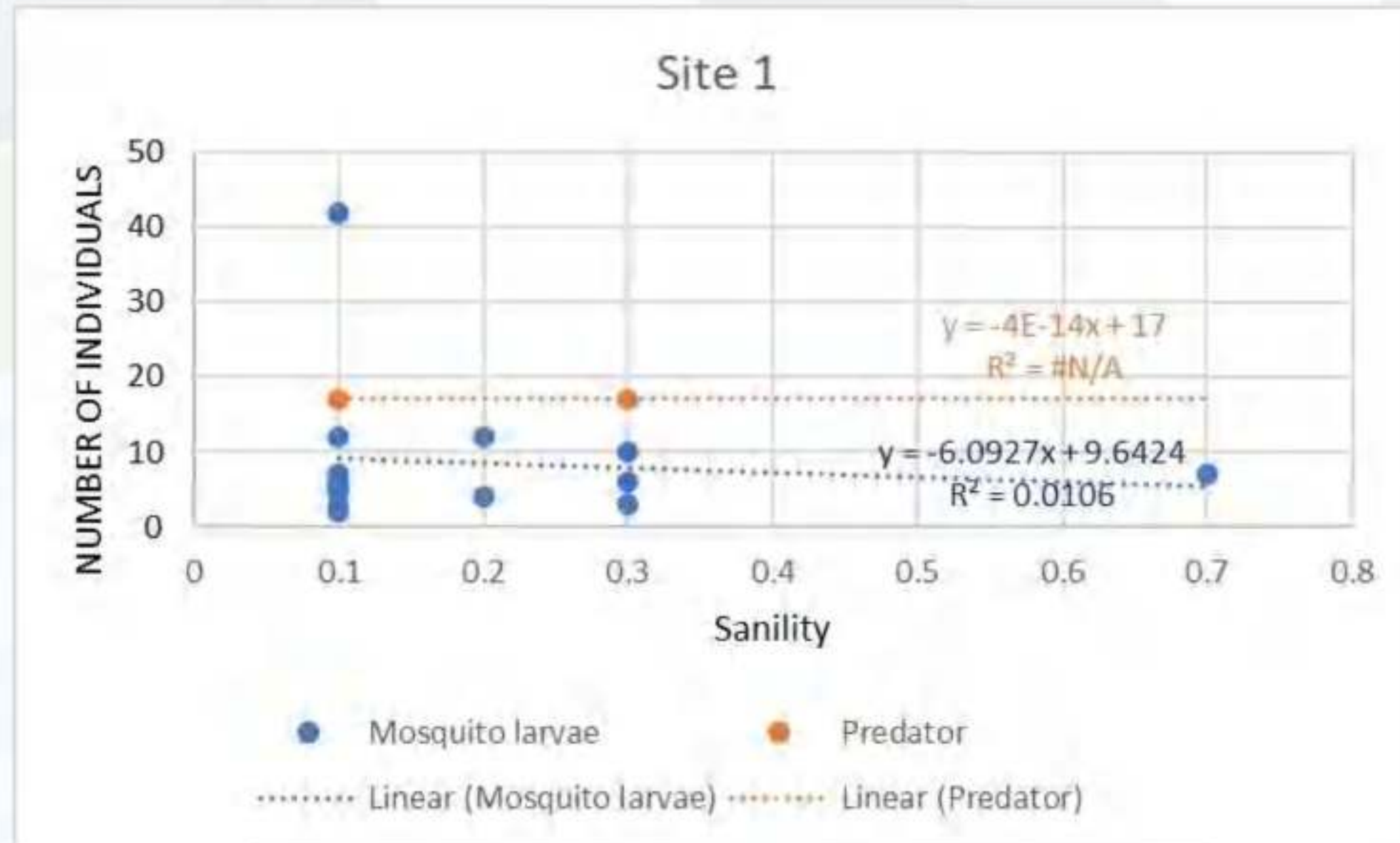
Results and discussion

Compare water pH and the number of mosquito larvae and predators.



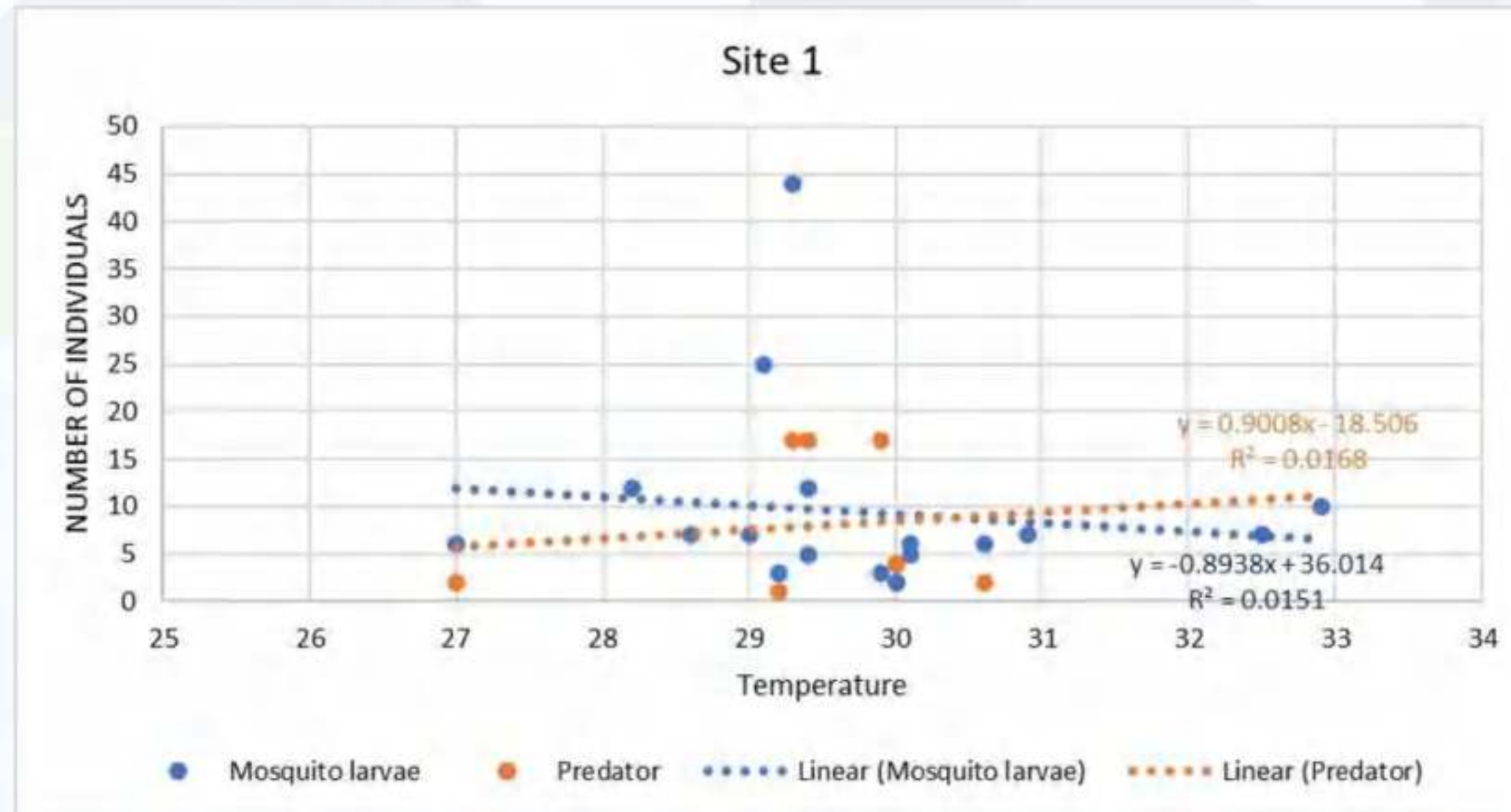
Results and discussion

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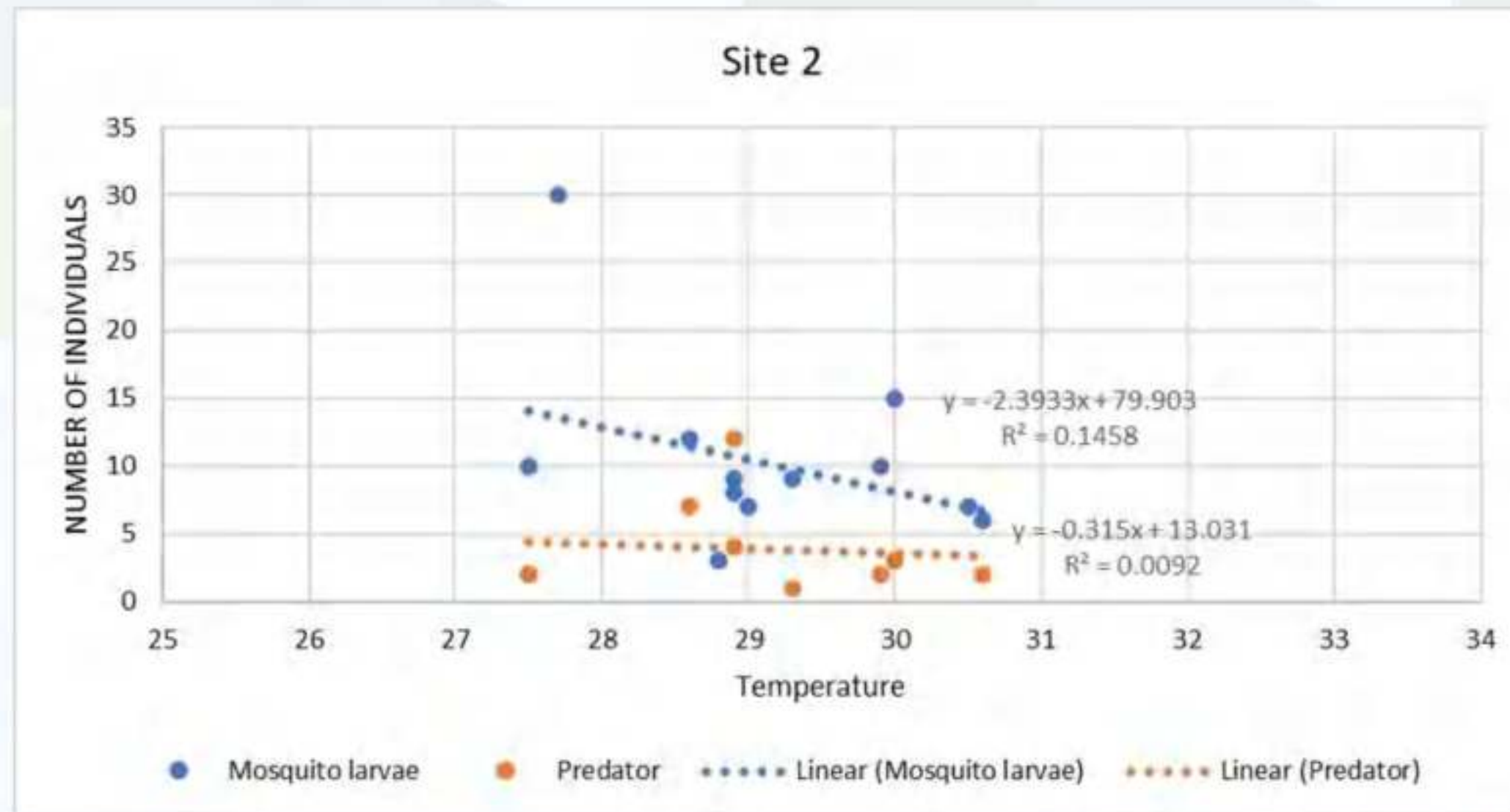
Results and discussion

Compare water temperature and the number of mosquito larvae and predators.



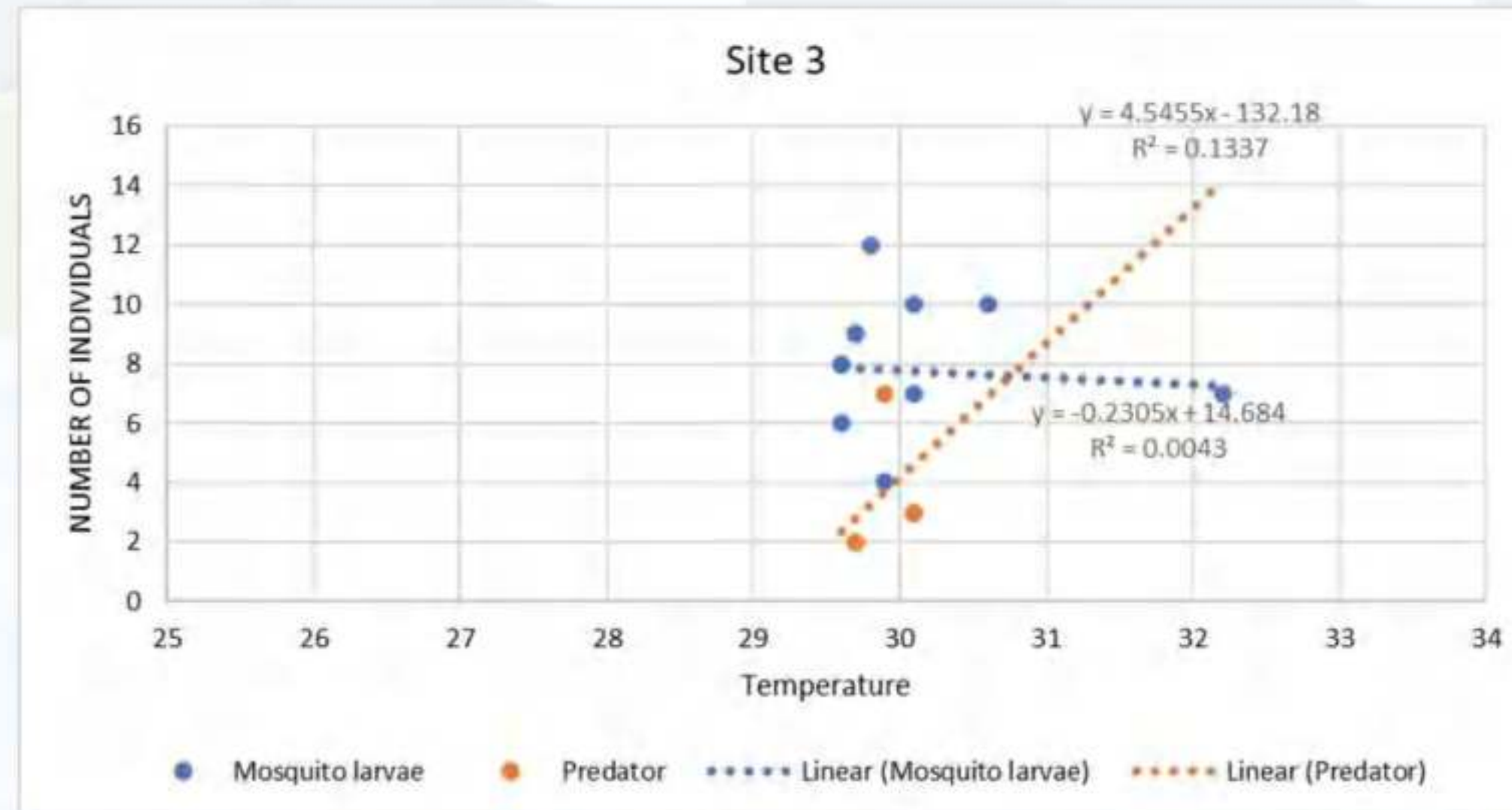
Results and discussion

Compare water temperature and the number of mosquito larvae and predators.



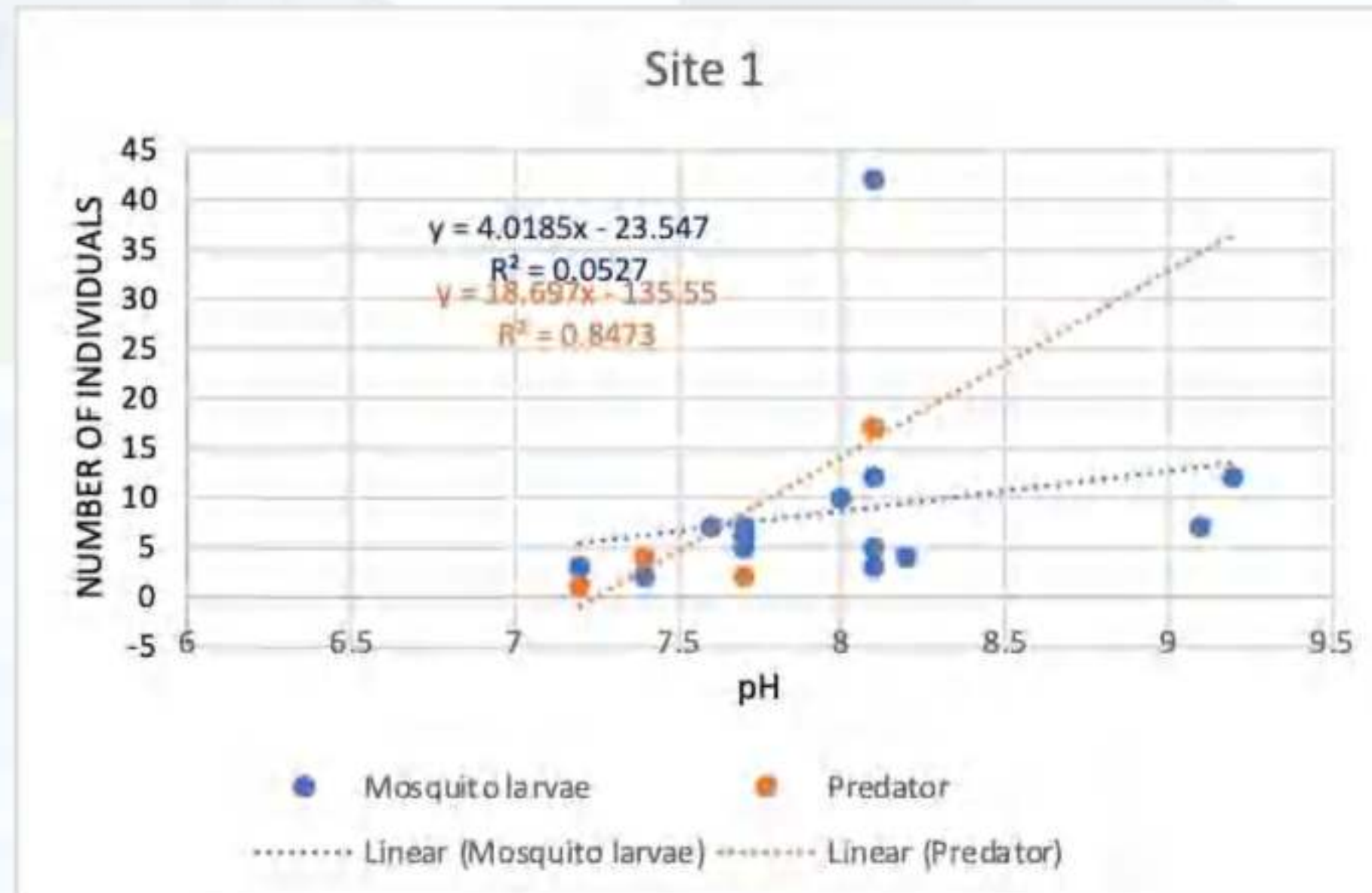
Results and discussion

Compare water temperature and the number of mosquito larvae and predators.



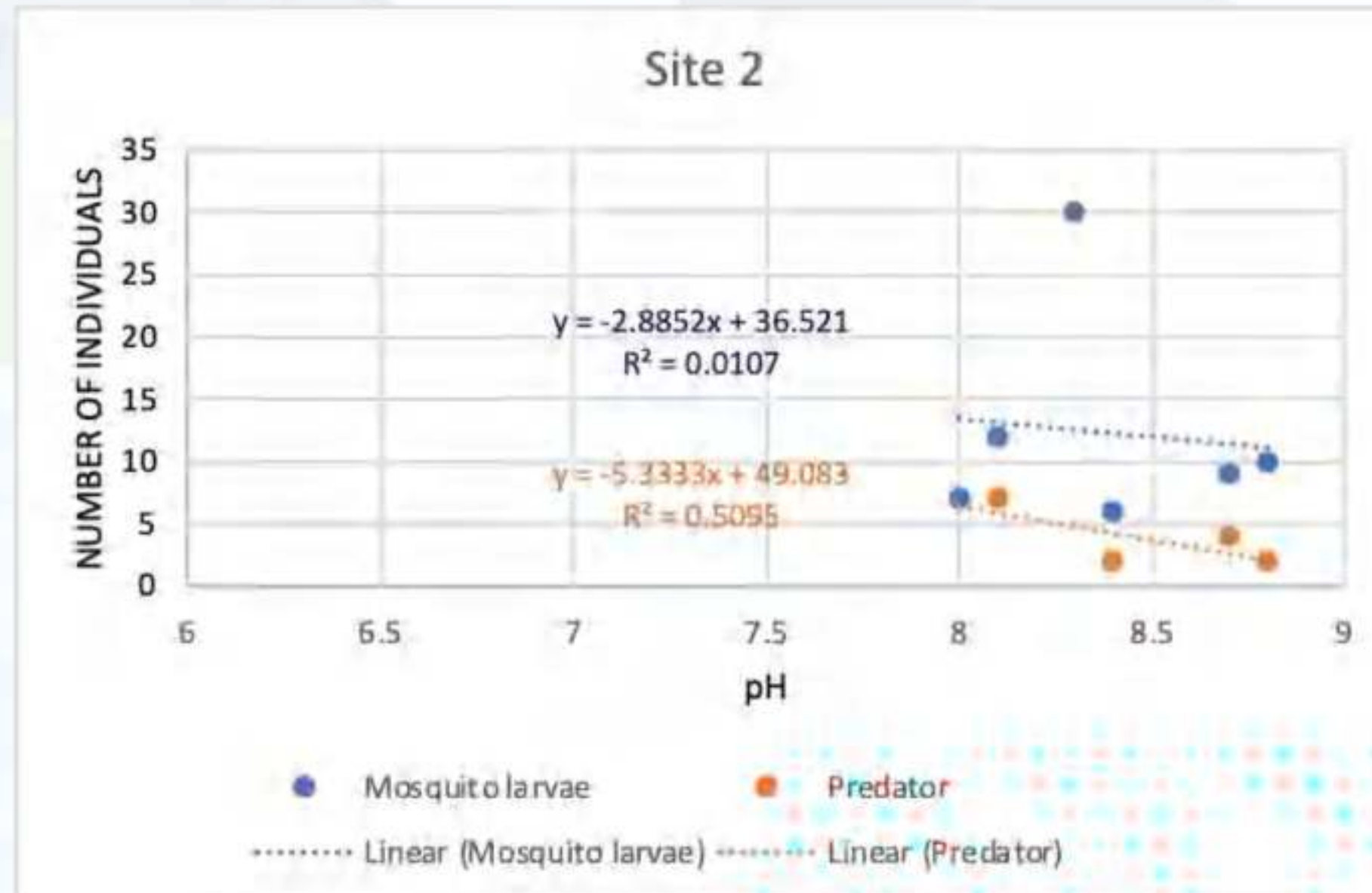
Results and discussion

Compare water salinity and the number of mosquito larvae and predators.



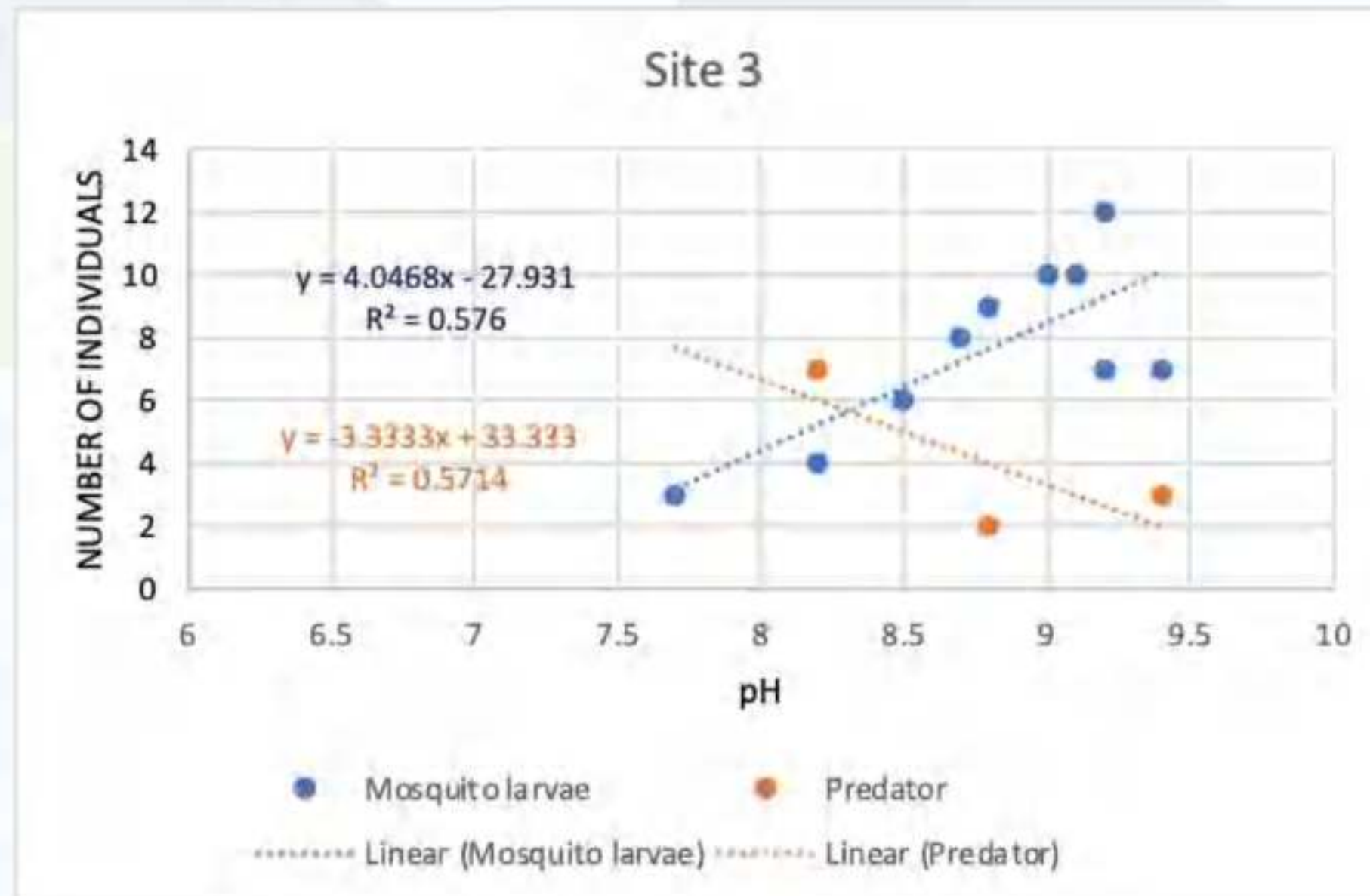
Results and discussion

Compare water salinity and the number of mosquito larvae and predators.



Results and discussion

Compare water salinity and the number of mosquito larvae and predators.



Conclusion

- The survey found that the distance from the dam affected the number of mosquito larvae and the actual number of predators.
- From the survey, mosquito larvae were found to be the most annoying at site 3.
- Surveys have found that the biggest predators are fish.
- From the survey it was found that site 1 had the most larvae.
- From the survey, Culex Mosquito's larvae were found to be the most at site 3.
- A survey found that the most commonly used containers are man-made.
- The survey found that most of the containers found did not have lids.

References

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- Mogi M (2007) Insects and other invertebrate predators. *J Am Mos Cont Asso* 23 (suppl 3):93–109

Acknowledgements

- COE for Ecometic Walailak University
- Director of Chonprathanwittaya School
- Teachers and students of Chonprathanwittaya School
- Teachers and staffs of Walailak University
- Associate Professor Doctor Mullica Jaroensutasinee
- Associate Professor Doctor Krisanadej Jaroensutasinee

Made by

Nutnicha kongwut

Wiwon May-nuch

Chairumphong Somagate

Kunthee Prakhobphol

Sarut Sathawan

Thanyalak Buato

Nachanok kuprasertkul

Peeravit Rangkagkarn

Jaroenrat Junha

Sirilak Sithawong

Techin thaworn

Nadis Kladwaiyanet

Supakorn Kijmahanon

Panumet kittorn

Pongthachet Sinsujrit

Korndanai Thunsiritada

Bhasakorn Addakornjira

Nereeras Chunphayak

A vibrant, stylized illustration of a mountain landscape. In the foreground, a large, yellow, wooden sign with a grain pattern stands on a grassy bank, displaying the text "Thank you" in bold black letters. To the left, a person in a green shirt and a conical hat is rowing a brown canoe on a blue river. In the background, a campsite is visible with a red tent, a person standing, and a dog. The landscape features green hills, several tall evergreen trees, and blue mountains under a light blue sky with white clouds. Yellow flowers are scattered in the foreground grass.

Thank you