GLOBE Mission Mosquito presents a series of mosquito tutorials

GLOBE mosquito habitat mapper

Using the app to describe your mosquito habitat site


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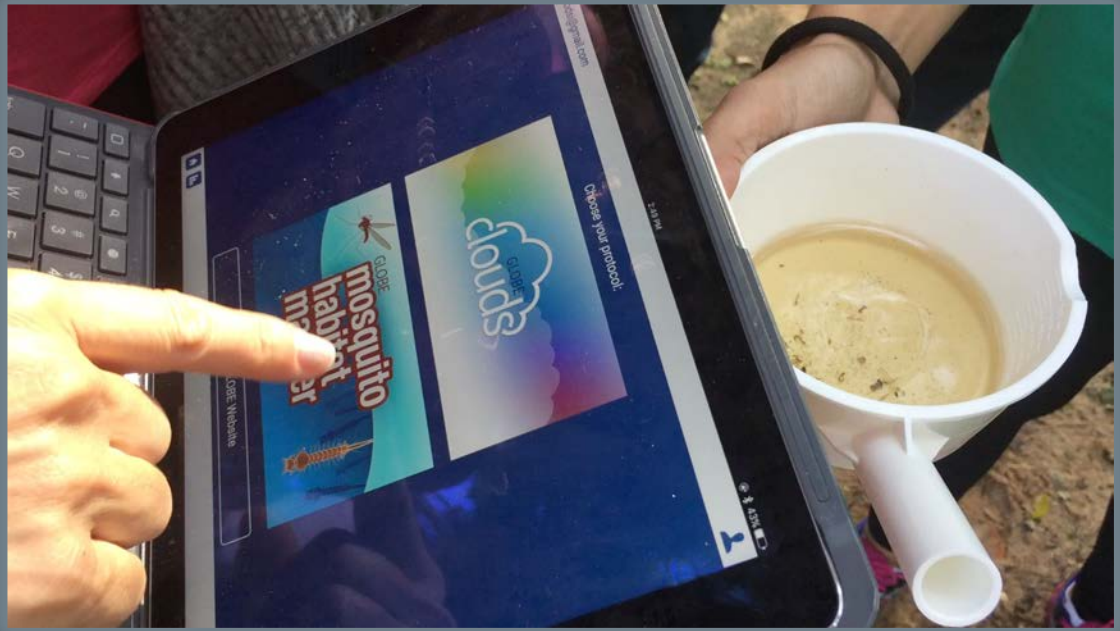
mosquito habitat site

GLOBE Observer is an international network of citizen scientists and scientists working together to learn more about our global environment, including our changing climate and its impacts.



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Mosquito larvae

Our investigation focuses on mosquito larvae- the larva is an immature developmental stage that lives in water, doesn’t bite and doesn’t pose a health hazard to humans!

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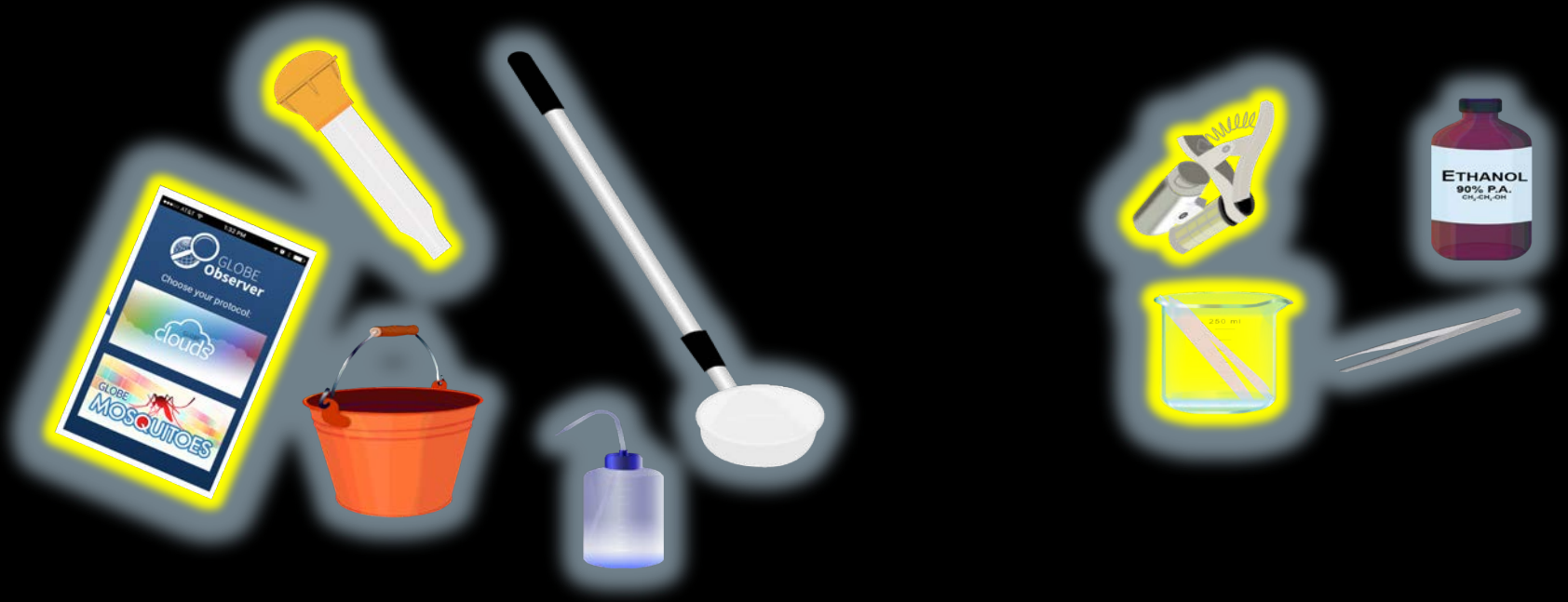
Tools you could use



*minimum tools needed

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Collecting water samples

You can make your own!

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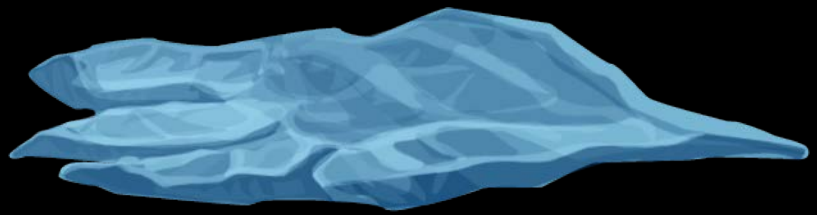
Citizen Science Safety

Wear long sleeves, pants socks and shoes, insect repellent

Wear gloves and/goggles to be protected from contaminated water sources.

Sample in your own yard or in public areas. Do not take samples on private property unless you have obtained permission.



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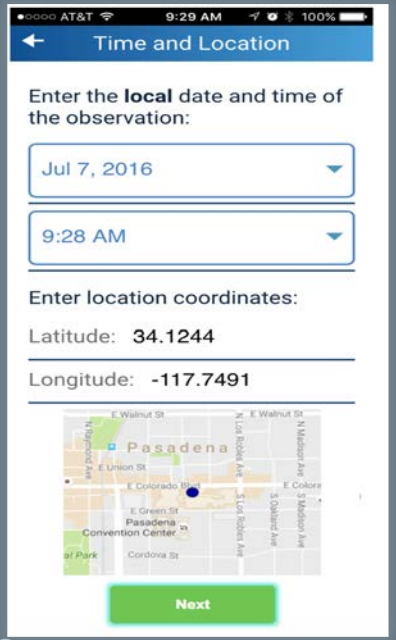
Recording Data
Step 1: Locating and recording breeding sites



Open GLOBE Observer Mosquito Habitat Mapper.

The app will automatically download the date, time and the latitude / longitude of your location.

You will be able to verify the location by the map that is provided.

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Step 1: Locate

Locate sources of standing water and see if you see mosquito larvae

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Step 2: Sample and Count

There are several different ways to collect water samples. Use the one that is best for your site:

- Bulb syringe,
- Mosquito dipper
- Net and wash bottle

You can also ask your local mosquito control authority which method they prefer to use.

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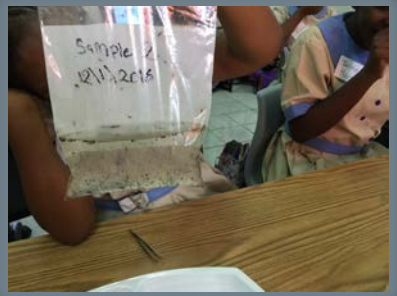
Step 2: Sample and count



This method is appropriate for all environments and sampling sites.

Press and collapse bulb, place syringe tip near the top of the water surface. Release bulb so bulb inflates, and water enters the syringe.

Transfer sample to plastic bag, by holding tip and then releasing the sample into the bag.

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Safe handling of samples

Leave air in bags so that larvae can breathe and keep bags cool and in the shade. If they warm up in the sun, the larvae may die.

Identify the larvae soon after collection. If left overnight, any pupae in the sample may become adult flying mosquitoes.

If you find adult mosquitoes in your sample bag, shake the bag to drown the adult mosquitoes and dispose of the sample by pouring on the ground.

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Step 2: Count the larvae

Provide a count of the larvae and pupae in your sample.

Be as precise as you can in your estimate.

Do you see how different they look? Why do you think?

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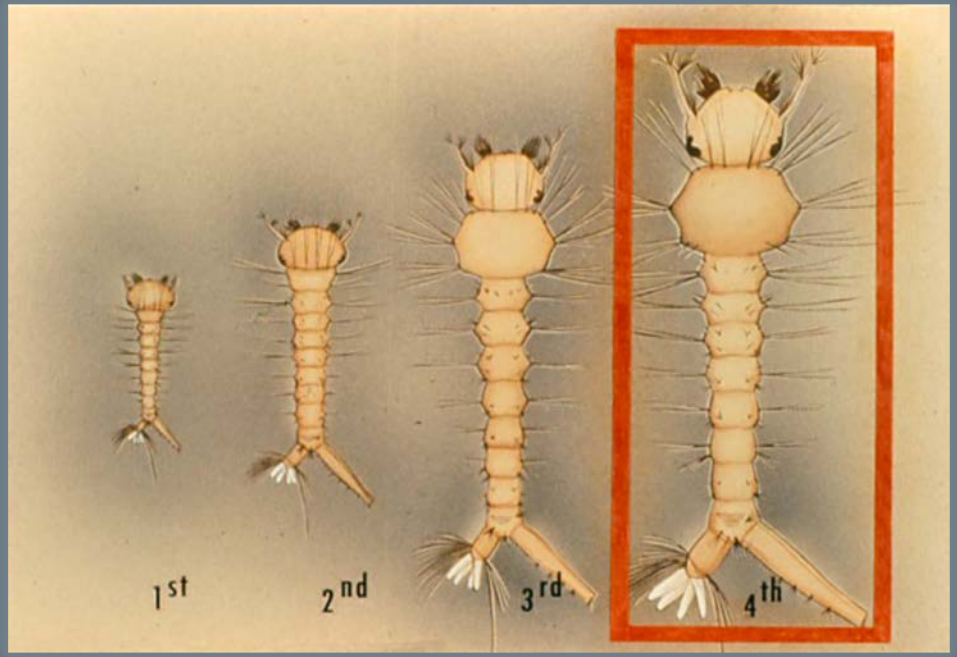
Mosquito larvae not just one size



The features that we use to identify the specimen are seen on the 4th instar larva.
Look for the biggest larvae you have in your sample. If you can't distinguish the features, its possible that your larvae are still in one of the 1st-3rd instars. In this case, you can count your larvae, but you will not be able to identify them.

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Step 2: Count the pupa you see too

After the 4th instar, the mosquito larva turns into a pupa, where it metamorphoses into an adult mosquito.

You may find pupae in your sample.

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Step 3: Photograph and Identify 1

Pour part of the sample containing larvae on to a white tray or plate.

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Step 3: Photograph and Identify 2

You can use a dropper or spoon to isolate one larva and put it on a white surface.

Suspend in a small drop of water.

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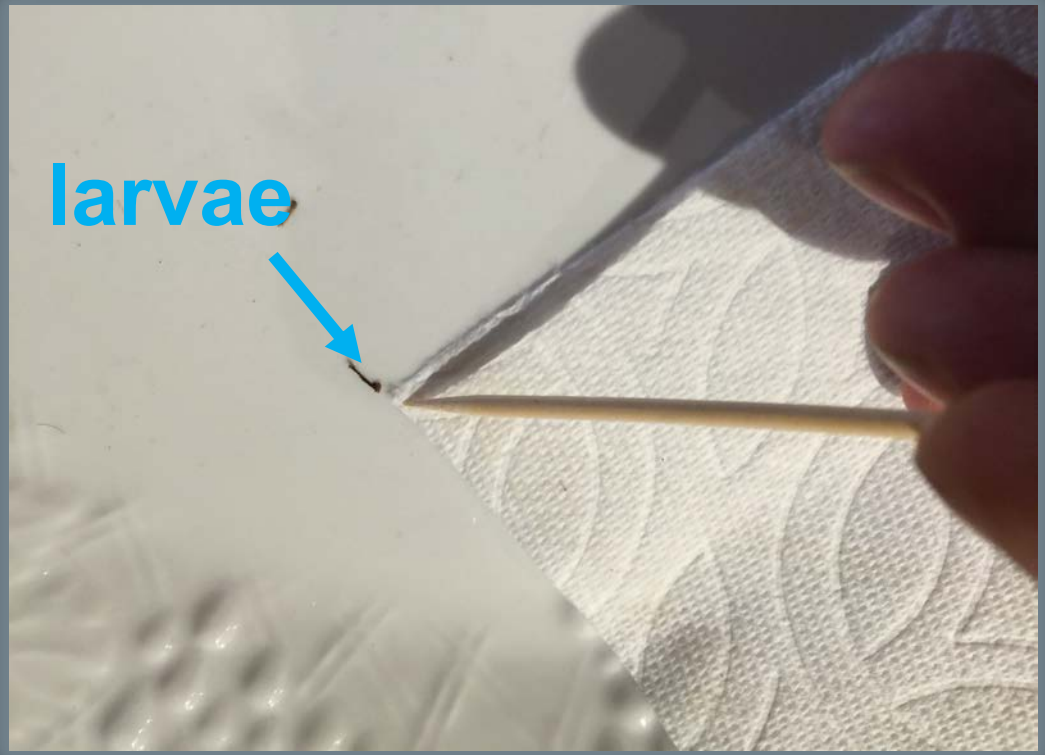
Step 3: Photograph and Identify 3



If there is too much water, the larva can swim and will be hard to keep the lens in focus. You can remove most of the water by blotting it up using the corner of a paper towel.

If the larva is still moving too fast to see, you can euthanize it with a drop of alcohol.

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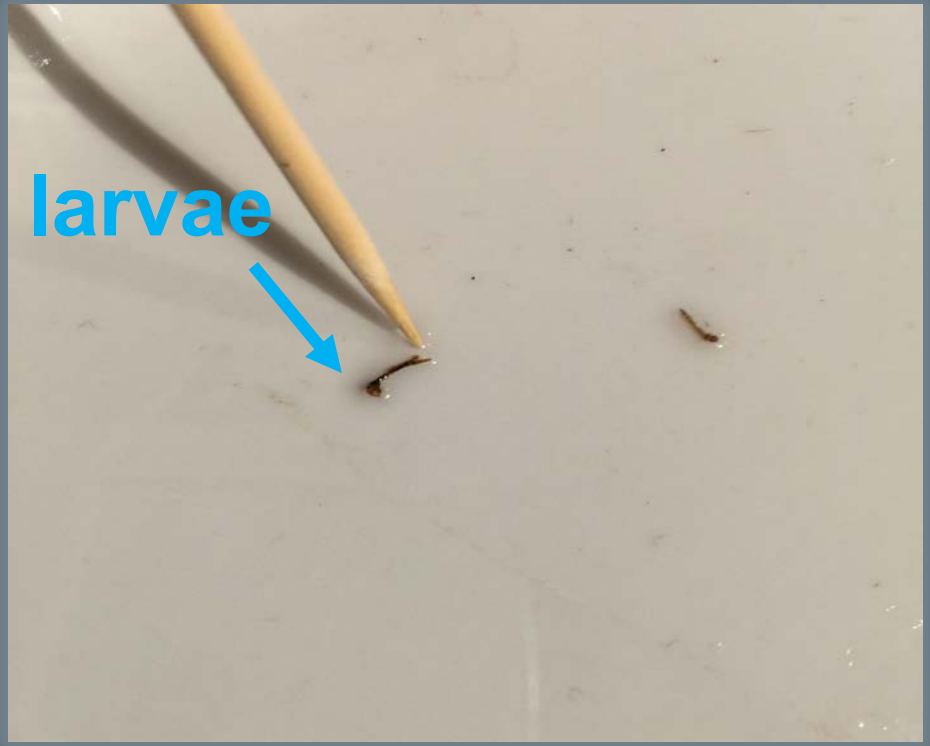
Step 3: Photograph and Identify 4



Use a probe or toothpick to position the larvae so you can see the diagnostic features.

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Step 3: Photograph and Identify 5

Attach a macro lens to a mobile device so that you can take a picture and upload it to the cloud.

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Step 3: Photograph and Identify 6

Clip the macro lens over the lens of the camera and line it up so that you see a perfect circle of light on your phone screen.

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Step 3: Photograph and Identify 7

Line up the lens so that the specimen is in the circle of light on the viewer.

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Step 3: Photograph and Identify 8

Many clip-on devices have a clear collar on them at the end of the lens. You can rest the collar of the lens on your plate.

The collar helps to you to find the focal length that is ideal for looking at your specimen.

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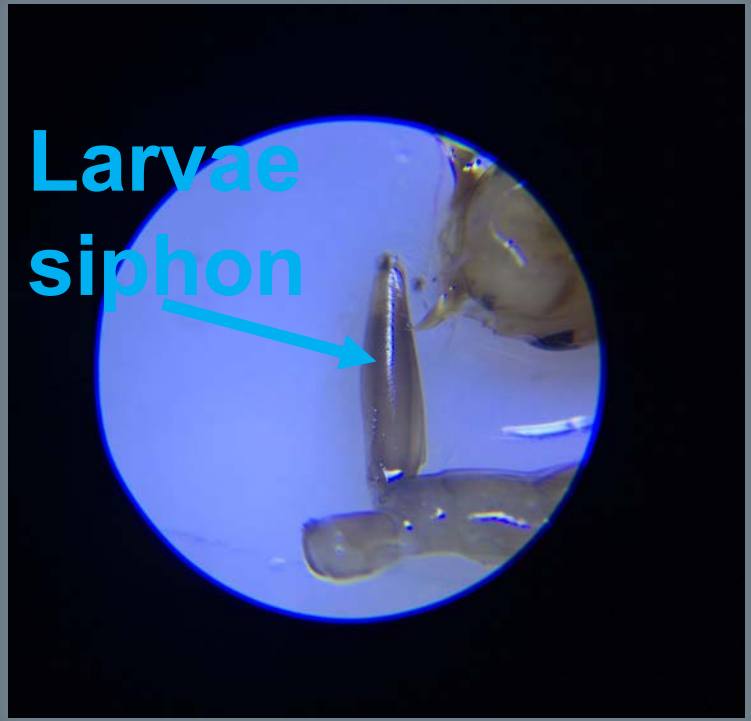
Step 3: Photograph and Identify 9



Once you have determined that you have a mosquito larva, you will want to focus on the diagnostic features.

Now you are ready to identify your specimen using either the app or a local mosquito larva key.

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Step 3: Photograph and Identify 8

If the larvae, you found are “other” it is probable you have found one of the many mosquitoes that play an important role in the ecosystem.

These mosquitoes are occasionally referred to as “nuisance” species, with respect to humans, but they also serve as food for other organisms and as pollinators for plants.

Don’t worry about removing a breeding site from use unless it is a container species. Birds, frogs and other living things will thank you!

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Step 4: Eliminate if possible

Eliminate the breeding site from use by mosquitoes by doing any of the following:

- tip and toss water
- cover container
- contact public health official if you locate a breeding site that you can't remove from use by yourself

Note: most mosquitoes do not transmit pathogens to humans or cause disease.

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Acknowledgements

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