

WHS Restore: Habitat Bee Monitoring

Learn

Green Steps students kicked off the semester by learning about the bees in the observation hive, specifically how to monitor the hive for varroa mites. Students were introduced to the varroa through a traditional note session (sample of the notes) and then on to the library to the DO part of this project which also involved learning how to: identify mites on bees (unfortunately we found one), how to

What's a varroa mite?

1. What is it?

It is an external parasite that feeds on the blood of honeybees.

2. Why is it bad?

It can weaken the hive.

3. Is it normal?

Yes, unfortunately.

4. How can monitoring and data collection help?

It helps us decrease infestations because we know when to treat the hive.



collect the bee tape, how to replace the bee tape, how to process the bee tape once back in the classroom using a microscope and lastly where to store the processed tape. As an additional part of the learn process students worked individually to research more details about the lifecycle of the honeybee, the lifecycle of varroa mite and treatments to control and treat mite outbreaks. These would eventually become part of the teach part of this project.

Do

The do part of this project happened daily. A lucky group of students went to the library to collect and replace the tape on the underside of the observation hive. The tape removal procedure is featured below in a series of pictures.



This is where the tape is located.



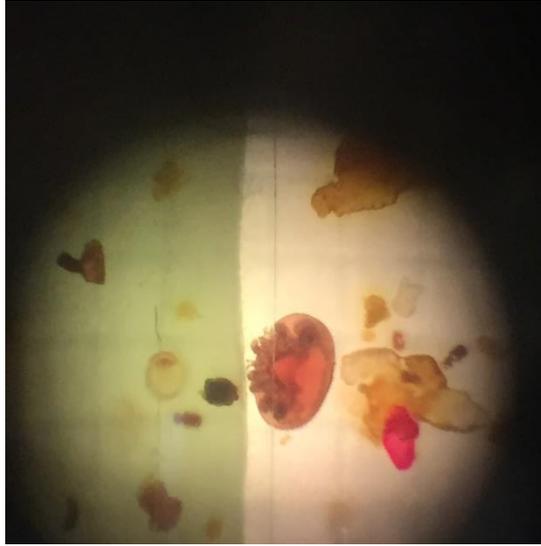
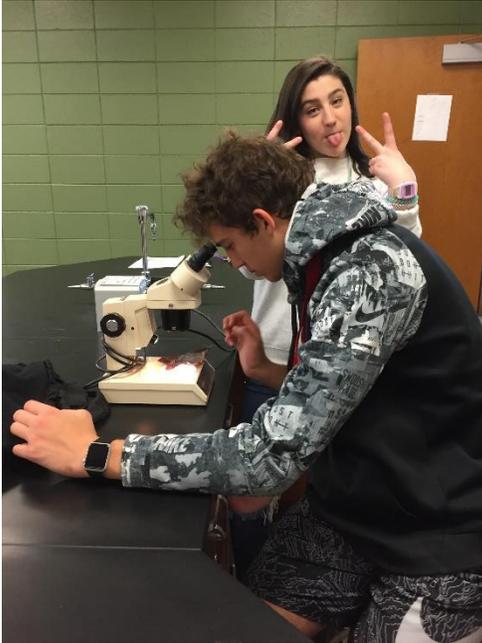
The bees use this hole as their trash.



It's fun to look at the trash under the microscope.

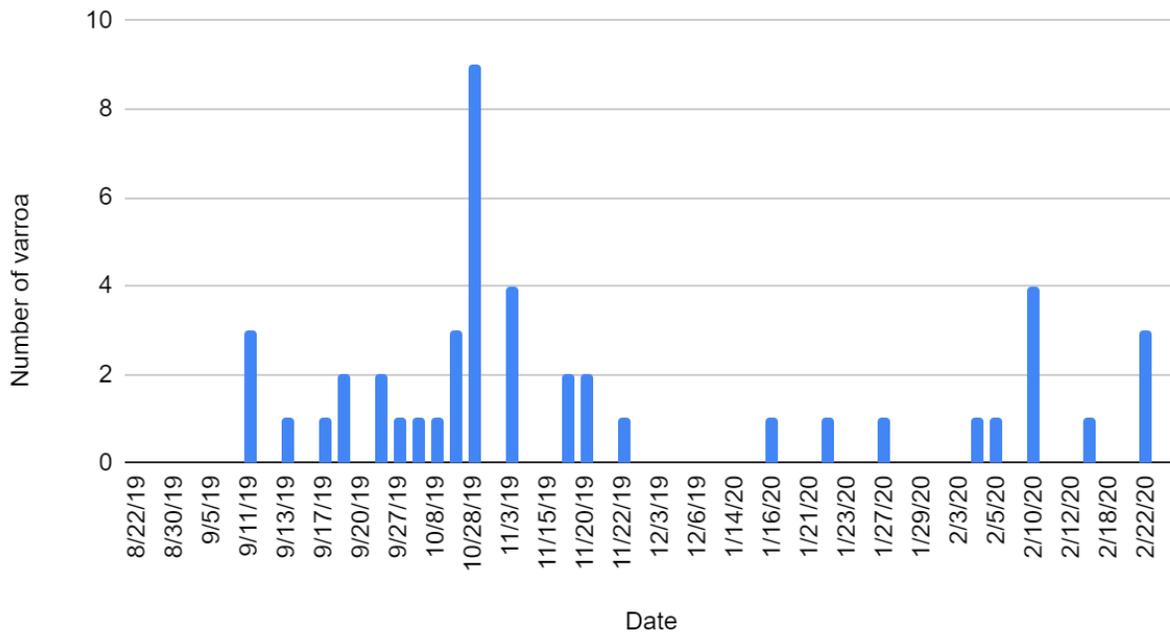
Do

Here are a group of students analyzing the bee tape to see if there are any mites to be seen. Once analyzed students would write the date and the amount of varroa mites found for the day on the tape and put it in a bag for safe keeping. The picture in the middle is an example of what a varroa mite looks like on the tape collected by students from the observation hive. The picture on the right is a small hive beetle larva which isn't a good thing. We also collect data on these nasty pests.



Every two- or three-weeks students would reanalyze the bee tapes and make changes if mistakes were found. We kept a running spreadsheet that we shared with our entire district. Almost all schools in our district are monitoring for varroa mite infestations in their observation hives. As you can see our varroa mite population was manageable! Much better than last year. Our treatments and monitoring seem to have a positive effect.

WHS Observation Hive Varroa Mite Count



Teach

Our bees are in the library and our library gets a lot of traffic. We decided to post up information about our bees and what they are dealing with at all of the library tables. Students were instructed to keep the information simple but with a good hook. Here are some of their finished products.

How to identify a varroa mite:

A varroa mite will appear as a small, reddish brown dot attached to the bee. They can be seen on the back of the bee, close to the wings, and on the sides of the bee. The mites even attach to the bee larvae and pupae. If you spot any varroa mites on our bees, you should take a photo and upload it to the survey on the [QR code](#) below.



The varroa mites is the world's most devastating honey bee pest. Varroa mites are external parasites that feed on the blood of adult honey bees. They also feed on larvae and pupae.

(If you happen to see any Varroa Mites, please scan the QR Code to alert Green Steps)



Look what this nasty thing can do to the bees

1. The queen lays up to 2,000 eggs per days.
2. Worker bees carry varroa mites with them into the hive, then the varroa mites jump off and go into the baby bee cell.
3. A few days later the varroa mites lay the first eggs
4. The mother varroa mites pierces a feeding hole in the baby bee
5. By the time the bee hatches, the varroa mites is all ready on.

If you see a varroa mites let

Green Steps know about it!

Scan the code!



WHAT
OTHER
PEST DO
BEES HAVE
TO WORRY
ABOUT?

A WAX MOTH



A VARROA MITE



A SMALL HIVE BEETLE



BEES HAVE
TO WORRY
ABOUT A
LOT OF PEST
SUCH AS...



What is a Varroa

Mite? A Varroa Mite is a small (no bigger than 1mm) parasitic mite, much like a tick, that infest honeybee colonies and feed off of their blood. The incessive feeding can kill the honeybee colony and/or spread numerous diseases which in turn cause the hive to die.



(To learn more about Varroa Mites and how they affect the bees, scan the code above)



Where to find varroa mites:

Varroa mites can be found attached to the honey bee. They can also be seen attached to the larvae and pupae. They spread colony to colony by drifting from workers and drones. Sometimes when honey bees raid other colonies, they can acquire the varroa mite as well. If you see any varroa mites on our bees, you can scan the QRC code below



and report it or upload a photo.



Protecting the bees from the mites

Bees really cannot do anything to protect themselves from the mites. The mites spread like crazy. Affected bees eventually die and find their way out of the hive. Let us know if you see one!

