

Ohio Bee Survey: *Complete this form now and keep in your box in the freezer; turn in with specimens in the fall*

Your Name : _____

Partner's name* (if collecting in pairs):

Email (or emails if collecting in pairs): _____

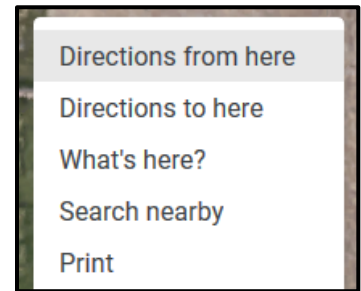
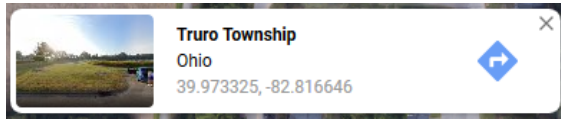
Site name: _____

Address of location sampled: _____

City: _____ County: _____ Zip: _____

GPS Coordinates of exact midpoint of your transect: _____

One way to do this is through Google Maps. Go to Google Maps and look up your address. From there, find the exact sampling location at your site. Right click on that spot and a pull down menu will appear. From there, click "What's here?" which will create a box at the bottom of the page that shows the coordinates.



Type of dish soap used: _____

(In the event you did not use Blue Dawn dish soap for your sampling, please list the name and type of dish soap you used for your samples. Please avoid citrus or other floral scented dish soaps if possible)

Specimen archival: The Ohio Bee Survey will retain all specimens and potential bycatch for research in studying Ohio's biodiversity. If you request, we might be able to make duplicates of species that you collected available for pickup that can be used for outreach displays and research once they have been identified and databased (pending stipulations of permits and your collection locations).

- If you or your permit location would like to request duplicate bee specimens, please check this box to be contacted about obtaining your duplicates. Note you will be required to come pick them up at an approved location. Duplicate specimens will not be available until after they have been identified and databased.

Species lists: At the end of the project, we will send out a species list for each collecting location. If there is an additional organization in addition to yourself that will need this report, please put their contact information below:

Name: _____

Organization (if applicable): _____ Email: _____

I acknowledge that I have read the above information and agree with the specimen archival policy.

Name (Print): _____

Signature: _____ Date: _____

***If collecting with a partner, please comply with social distancing protocols. Preferably, have your sampling partner be someone in your immediate household if you choose to sample with a partner.**

Thank you for signing up to set out bee collection bowls for the Ohio Bee Survey!

*** Life happens. If you are unable to continue to participate in the survey season, please contact MaLisa ASAP at spring.99@osu.edu so we can try to find someone else to finish surveying at your location. We can work out arrangements to retrieve specimens and survey supplies as need be. ***

In this survey kit, the following is included:

- 24 colored bowls (3.25 oz. pan traps that are fluorescent blue, fluorescent yellow, and white)
- 21 paint strainers (for straining field samples and then storing)
- 21 quart Ziploc bags to store each week's paint strainer (so the specimens do not dry out)
- 1 gallon size Ziploc bag for supply storage
- Box to safely store completed paint strainer bags in freezer
- 2 sampling signs (transect/research in progress signs)
- Blank specimen collection labels
- Information request sheet
- This instruction sheet (How to Sample)

You will need:

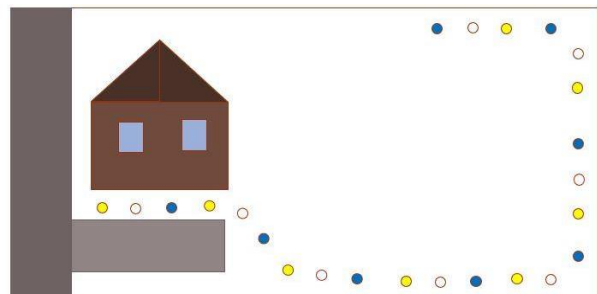
- A clean 1 gallon container (*Cleaned milk jugs are easy to carry. Avoid citrus jugs.*)
- Clean water
- Dish Soap (Blue Dawn is ideal, avoid any floral or citrus scents)
- Pencil
- Clipboard (optional, but useful for your collection label sheet)
- Scissors (to cut out your collection label sheet)
- Access and transportation to your collection site

Site Selection for sampling location: You should have already agreed upon a site location based on the approval for a kit and or permit process. If you do not yet have a site determined, please contact me directly (spring.99@osu.edu).

Transect Selection within your site: You need to determine your transect that you want to sample within your site. A transect is the sampling area where you will put down your collecting bowls.

Sampling will occur once a week, with bowls set approximately 5 meters apart (or three to four large steps) for 24 hours. Thus, a transect ~120 meters long, but it does not need to be a straight line (so feel free to curve around edges or around boundaries). Consider an area at your site that is likely to have high floral richness across the year, as your transect should stay in the same location each time. Bowls will be placed on the ground, so next to a trail or just off a path is generally okay. Out in the open and not deep in weeds is ideal. **Avoid areas with pets that are likely to knock over bowls.**

If you have pets, choose an area they cannot access, or consider a different location. If you have a park permit, be sure to read the stipulations as they might restrict where you can set bowls as well (for example, some sites frown upon going off trail, so you would need to set bowls at the edge of the trail). See more example transects on our webpage (<https://u.osu.edu/beesurvey/>).



Sampling methods:

The night before:

1. Check the weather for your sampling location. Bee bowls should not be set on days when it is forecast to likely rain, so you might need to move your collection date or skip a week or two depending on the lovely Ohio weather. If no rain forecast, then rejoice!
2. Prepare your soapy water solution. Fill your 1 gallon jug with clean water, leaving a 1-2 inch air gap at the top. Add several drops of dish soap (ideally Blue Dawn). Cap the jug and shake. This should create a layer of bubbles at the top. If there are not a lot of bubbles, add a little more soap and try again. If you still are not getting a bubble layer at the top and are not using Blue Dawn, it might be worth switching your dish soap. Now your soapy water solution should be ready! **Make a new soapy water solution each week.** You may have leftover soapy water, which can be discarded or used for whatever you want.
3. Organize your sample bowls so that they are alternating colors (so a stack that goes Yellow, Blue, White, Yellow, Blue, White, etc, as long as it is a consistent alternating pattern).
4. If you have a permit that requires notifying someone in advance, be sure to do so.

Sampling day:

1. In the morning, grab all the sampling supplies you need (the 24 bowls, your soapy water jug, the 2 transect signs, and appropriate permits) in an easy to carry bag, backpack, or bucket.
2. Head out to your sampling location with your supplies. Once you arrive at your planned transect location, now the fun begins!
3. Place your first survey sign a few feet in front of where your first bowl will be placed.
4. Fill your first bowl 2/3rds full with the prepared soapy water. It should be filled enough to keep the bowl from blowing over or drying out, but not so much that the bees can easily crawl over the top of the rim.
5. Place the filled bowl on the ground and make sure it is stable.
6. Take three to four large steps (~5 meters, ~5 yards, or ~15 feet) and then prepare your second bowl of a different color as above. Place it on the ground. Take two steps and repeat until you have set out all 24 bowls.
7. Once you have set all your bowls, put out your second transect sign and then do what you want for the day. **Do not collect bees or other insects at this location while your bowls are set.**

Pick-up Day: Try to pick up your bowls around the same time you set them. So if you are an early morning riser and set your bowls at 6 AM, collect them 6 AM then next day. If 10 AM, then 10 AM the next day, etc.

1. Grab a **SINGLE** paint strainer, pencil, Ziploc bag, and your clipboard with your collection labels.
2. Once you arrive at your transect, remove your transect sign to take it with you.
3. Pick up your bowls one at a time and pour them through the paint strainer. The soapy water will fall onto the ground, which is fine. Keep all the insects in the strainer. Do not remove other insects or other material that gets in the strainer.
4. As you pick up bowls, only pour bowls that have not been knocked over through your strainer. Keep count of how many bowls you set versus how many bowls you actually

collected by pouring through the strainer. Note that some bowls will inevitably get knocked over, crushed, or chewed up by mysterious animals.

5. Fill out your collection label. Be sure to write down the number of bowls that you ended up collecting. On your collection label sheet, write the number of bowls set and the number of bowls collected (so if you set 24 and only collected 19, you would write 24/19).
6. Carefully fold your paint strainer so it fits inside the Ziploc bag. Place the collection label in with the paint strainer facing out so you can read it and then seal the Ziploc bag.

Back at home:

1. Transfer your Ziploc bag to your storage box in your freezer. The survey storage box should stay in the freezer to preserve the bees until they can be dropped off at an approved depository at the end of the season.
2. Stack your bowls in a small pyramid to allow them to air dry for one day. Otherwise they start to smell, which might impact the bees that visit. Once they are fully dry you can store them in your gallon bag until the next week.



3. If you begin to run low on bowls due to animal destruction, reach out to MaLisa Spring at spring.99@osu.edu to arrange for replacement bowls.
4. Celebrate the end of another week of successful bee research! Enjoy your week ahead!