Bugs In Our Backyard

Field Data Record

updated 10/16/2015

1. Name _____

2. Date _____

3. School _____

4. Site address _____

Give the street address if known, or give the street name and nearest crossing streets

5. City & State _____

6. Latitude & Longitude _____

Use a GPS device or smartphone app. Give coordinates to at least 4 decimal places, e.g. 38.8802, -77.3965

7. Description of the field site _____

For example is the location a park, empty lot, sidewalk, parking lot, residential yard, etc

8. How urban or rural is the site?

- ○ Metropolitan
- ○ Urban
- ○ Suburban
- ○ Rural
- ○ Wild land

9. Host plant identification _____

Refer to *BioB* Field Guide for host plant identification

10. Number of host plants at this site _____

11. Trunk circumference _____

Please use centimeters 1 inch = 2.54 cm

12. Estimate the height of the host plant _____

Please use meters 1 foot = 0.3048 m

13. Estimate the width of the host plant _____

14. What is the condition of the host plant?

- ○ The plant is dormant (no live leaves)
- ○ The plant is in flower
- ○ The plant has developing seed pods (that aren't ripe)
- ○ The plant has mature seed pods

15. What is the groundcover? _____

What covers the ground at the plant's base? This might be leaf litter, grass, wood mulch, pavement, etc.

> Take a picture of the host plant

What bugs do you find on the host plant? (If there are too many to count, use a 1-m^2 (or 0.25-m^2) quadrat at the base of the host plant)

16. Bug species present _____
    Refer to the *BioB* Field Guide for help with insect identification.

17. Number of adult bugs _____
    Is this number is an exact count ☐ or an estimate ☐ ?

18. Number of short-winged bugs _____
    This is important for soapberry bugs, but may not be relevant to other species.
    Is this number is an exact count ☐ or an estimate ☐ ?

19. Number of juveniles _____
    Is this number is an exact count ☐ or an estimate ☐ ?

20. Behaviors (check all that apply)

- ○ Walking (They move if you approach them)
- ○ Flying
- ○ Eating seeds
- ○ Eating leaves on the plant
- ○ Eating from plant stems
- ○ Eating other bugs!
- ○ Eating carrion (such as dead insects)
- ○ Mating
- ○ Hiding under tree bark or leaf litter
- ○ Dormant (They just sit there unless I touch them!)

21. Other comments about the bugs, host plants, or location _____

_____

_____

_____

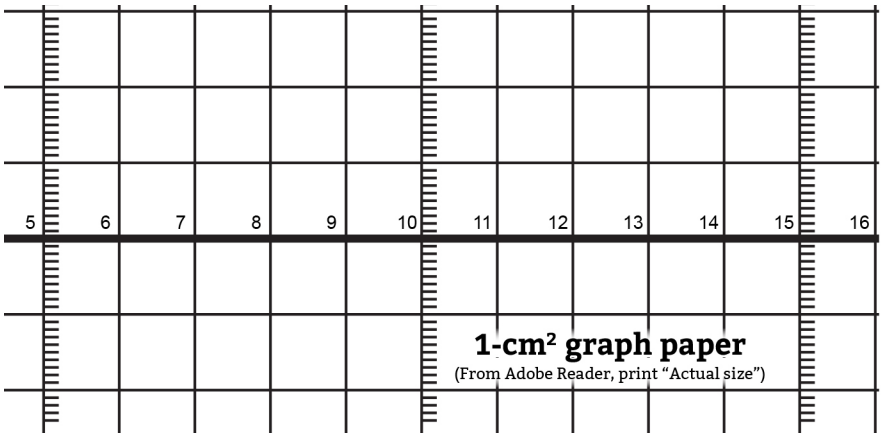
_____

_____

> Collect up to 12 adult bugs. Place each bug in a clear Petri dish, on a 1-cm^2 grid. (This can be done in the field or later in the classroom.)

> Photograph each bug from the dorsal (back) side.

> Photograph each bug from the ventral (bottom) side. (Just turn the dish over. The bug will cling to the dish, if it's not too agitated.)



Detailed instructions

Thank you for contributing to *BioB*! We welcome all data entries. While more complete submissions may be more helpful, you can make a survey submission even if many of the items are omitted. For repeated data collection, you can print the previous two pages, but refer to these instructions for detailed explanations of each item.

1. **Name** - This is the name of the individual or group of people collecting the data. If anyone has privacy concerns, full names aren't necessary. A first name, pseudonym, or teacher's name could be used instead.
2. **Date** - The date when the data were collected, not the date when the data are being uploaded to bugsinourbackyard.org!
3. **School** - If you are contributing to surveys as part of a school program or class, please let us know your school's name!
4. **Site address** - Give the address where the data were collected. If your unsure of the numbered street address, you can list the street name and the nearest blocking streets. For example, "Main St. between School St. and Elm St." Alternatively, name the location of the site, such as "City Hall."
5. **City & State** - Where were the data collected? This item is required for online submission, since it provides the minimum geographic information to make the other data useful.
6. **Latitude & Longitude** - If you have access to a GPS device, record this information from the site. However, there are many free apps for smartphones that will give you lat & long coordinates. *LL Latitude Longitude Coordinates* is a simple app for Android phones that works well. Free apps for iPhone include *Coordinates* and *Latitude and Longitude Plus*. Alternatively, if you take careful note of your street address or other landmarks near the site, you can get lat & long coordinates by simply clicking on the site in GoogleMaps. (From MapQuest, right-click to see a window with coordinates.)
7. **Description of the field site** - This is meant to be a short description of environment. Is it a park, golf course, empty lot, sidewalk of a busy street, residential yard, edge of a parking lot, or something else?
8. **How urban or rural is the site?** - The four-point urban-rural scale is used by ecologists to loosely categorize locations. While this scale is inherently subjective, here are some guidelines.
    - Metropolitan describes cities with more than 1,000,000 residents.
    - Urban describes towns or cities with more than 100,000 residents. The term could also be applied to particularly dense central areas of small cities.
    - Suburban describes towns or cities with 10,000 to 100,000 residents
    - Rural describes towns with fewer than 10,000 residents. The term could also be applied to thinly settled or undeveloped areas of small cities, often on the edge of the municipality.
    - Wild land includes completely undeveloped wilderness, as well as open countryside.

9. **Host plant identification** - List the name of the plant associated with the insects you are reporting. You can also report the locations of common host plants, even if *no* insects were found. Use the Latin name if possible, but common names can be given instead. If you're not sure of the identification, just make your best guess! The *BioB* Field Guide is one resource, but you can use any guide book to help identify plants or insects. A few helpful websites for plant identification include leafsnap.com and gobotany.newenglandwild.org. If your site has multiple plants, one can record all of them on this sheet, but please make separate data form submissions on bugsinourbackyard.org.

   If you've found insects that are not on or near a plant, then simply ignore all the items related to host plants.

10. **Number of host plants at this site** - A field site should be considered a group of plants all within close walking distance of one another. If a line of trees covers a mile of one road, provide this detail in the comments, but it might be best to limit your survey to one or a few trees.

11. **Trunk circumference (in centimeters)** - Use a flexible measuring tape to find the circumference of the trunk. For trees, take this measurement 1 meter up the trunk from the ground. If the trunk branches near this height find a more representative spot close by. If the tree has several trunks of branches a lot, you can measure a representative one and report the number of branches. For example, "3x50cm". If the plant is herbaceous, such as milkweed, simply ignore this item from the survey. If you don't have a metric measuring tape, you can record the data in inches, but please convert to cm before submitting the data online.

12. **Estimate the height of the host plant (in meters)** - Typically this is done by eye. Some comparisons: A basketball hoop is 10 feet (3.05m) high. For most residential buildings, the first floor is 4.65 m high and upper floors add 3.1m. For office buildings, the ground floor is typically 7.8m and upper floors add 3.9m each.

13. **Estimate the width of the host plant (in meters)** - Again, estimate this by eye. However, you may also be able to find large trees on GoogleMaps or other satellite-based mapping apps, where you can compare the tree's width to the map's scale for a more accurate estimate.

14. **What is the condition of the host plant?** - Check off each of the boxes if the plant is dormant (no live leaves), has opened flowers, unripe fruit or seedpods, or mature fruit or seedpods.

15. **What is the groundcover?** - What can be found at the base of the tree or plant? Depending on your location this might be fallen leaves (leaf litter), grass, wood mulch, crushed stone, pavement or something else. Include all materials within about 1 meter of the plant.

> **Take a picture of the host plant** - A picture is important to help *BioB* staff confirm your identification of the plant. Try to include key diagnostic traits, this leaves, flowers, seeds, or bark texture. Up to 3 pictures should be uploaded with the data submission form on bugsinourbackyard.org.

16. **Bug species present** - Identify the insects you find as precisely as you can. Some insects are very hard to identify to species, even for professional entomologists! The *BioB* Field Guide provides a key and visual guide to some common species of true bugs and species of special interest. It also includes a guide to orders of insects. This level of description covers broad categories of insects, like flies, beetles, grasshoppers, etc. While this degree of identification might seem less satisfying than a species-level ID, the information is still very valuable in a landscape-scale ecological survey like ours!
17. **Number of adult bugs** - If you find a small number of insects, count them all. However if you find a mass aggregation of insects, which is often the case for soapberry bugs or box elder bugs, you can estimate the number. One way to do this is two count the number in a small representative area, using a quadrat (a square made of wood or plastic for which you know the area--typically 0.25 square-meters), then multiply by the estimated area the insects cover. Importantly, check off if your number is an exact count or an estimate.
18. **Number of short-winged bugs** - This item is most important is you find soapberry bugs, where the number of short-wing and long-wing bugs is a focus of research. Be sure not to mistake juveniles for short-winged adults.
19. **Number of juveniles** - Typically smaller and wingless compared to adults.
20. **Behaviors** - What are the insects doing?
    - Do they actively walk around?
    - Did you see them, but them some or all of them flew away?
    - Are they eating seeds or fruit of the plant they're on?
    - Are they eating leaves on the plant?
    - Are they eating stems or twigs on the plant?
    - Are they eating other bugs? This might include predation, as well as cannibalism.
    - Are they eating dead insects or other animals (carrion)?
    - Are they mating? With some insects, the male will hold on to the females back. For other insects, including true bugs, males and females will appear to be connected end-to-end during and after they mating.
    - Are they hiding under tree bark, leaves, or other debris on the ground?
    - Are they dormant? Do they just sit there unless you touch them? This may often be the case during winter weather.
21. **Other comments** - If there is anything you wanted to communicate that the format of this data sheet didn't allow for, just make note of it and let us know!

> **Collect bugs and photograph them** - Providing pictures of insects you've seen will help *BioB* staff confirm your identification. In some cases we may be able to provide more precise identifications, such as a species name rather than the just the insect's order. If you can't catch an insect, a picture of it "in the wild" is okay too, and may allow an identification.

Images are especially important for surveys of soapberry bugs, where we would like to get detailed anatomical information. Ideally, this should include 3 long-winged males, 3 long-winged females, 3 short-winged males and 3 short-winged females. Try to get pictures of the bugs at rest in a Petri dish, from directly above (dorsal) and directly below (ventral). Put a ruler or metric graph paper under the Petri dish to provide scale.