Volunteer Experts: Tips for Engaging School Groups

Welcome, and thank you for helping with this BioBlitz event! Your field expertise as a scientist or naturalist will enrich students' experiences. Use this tip sheet as you prepare to guide student groups and their chaperones in plant and invertebrate inventories. If your expertise is another taxa, you can follow this framework and apply it to your specialty.

Here are ten steps for successful bioblitzing with students:

Before the Event:

1. Get ready.

- ☐ Look at a park map, and decide on a few prime locations for your inventories. Work with park staff to see which locations work with their plans, and find out the park's rules and best practices for an inventory.
- ☐ See the **BioBlitz: Suggested Equipment List**, and find out what the park or coordinator will provide for you to use. Let the park or coordinator know what equipment you can bring.
- ☐ Sign up for a free account on iNaturalist.org, and put the app on your phone or tablet. Take it for a trial run in your own backyard, and add an observation using the app.
- ☐ Review and tailor these guidelines to the interests and goals of the bioblitz and your area of expertise, as well as any potential "teachable moments."

During the Event:

2. Introduce biodiversity and the bioblitz.

- ☐ Welcome students, **introduce** yourself, and tell about your profession, your education, and your passion for biodiversity.
- ☐ Review students' **understanding** of biodiversity and bioblitzes. Ask:
  - *What does biodiversity mean?* (diversity of life on Earth)
  - *Why is biodiversity important to everyone?* (It impacts ecosystems, food, medicine, and more.)
  - *What is a bioblitz?* (a short, intensive study of the biodiversity of an area)
  - *What organisms might we see in the park today? What are you most excited about?*
- ☐ Talk about **questions** you have about biodiversity here, and what you are most excited to investigate today.

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3. Consider what makes this place special.

- ☐ Show a park map and, if possible, distribute copies. Ask participants to look at the surroundings and for landmarks, such as a visitor center or campground. Ask: *Where are we?*
- ☐ Ask students to locate on the map key **geographic and ecological features** at this site, such as trails, canyons, creeks, ponds, wetlands, or forests.
- ☐ Show the **route** the group will take, and together predict what you might see and where. Ask: *Where do you think we might find a lot of living organisms? Why? What animals, plants, and other life might we see?*

4. Demonstrate tools and techniques.

- ☐ For an **invertebrate** inventory, refer to the equipment list and demonstrate the tools for observing invertebrates on the ground, in shrubs or trees, flying, and in aquatic systems. Show a variety of ways to "Look up, down, and all around."
- ☐ For a **plant** inventory, show the Arbor Day "What Tree is That?" dichotomous key, with the app or book version. Demonstrate how to use a dichotomous key to identify a common tree nearby. If other plant guides are available, familiarize students with those tools. Point out plastic trays where students can place seeds, cones, and leaves for observations.
- ☐ Demonstrate the **tools and techniques** relevant for your area of expertise.

5. Show technology as a field tool.

- ☐ Demonstrate how to use **iNaturalist** to capture data from observations. You may want to bring a tech-savvy partner who will focus on this aspect for you. Describe the role of technology in recording and mapping the bioblitz. The iNaturalist app makes it easy to capture photos with timestamps and location, so uploaded observations can be viewed and analyzed by place and time, from local to global scales.
- ☐ Ask: *How might geo-referenced observations be useful for scientists who use iNaturalist data?* Explain that the data collected can be used for **real research**. An observation can become "research grade" after scientists around the world check its accuracy.

6. Set up teams.

- ☐ Have the teacher form small groups of students and a chaperone, having at least one mobile phone or tablet with the **iNaturalist** app with each group. Participants can take on roles, such as explorers, photographers/data recorders (photographing observations with the iNaturalist app), or investigators (carry and use field tools) that will be responsible for different tasks during your inventory.

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7. Explain respect for the park and its organisms.

- ☐ Explain to students not to touch wildlife or pick flowers unless they have permission from you. Give students a **conservation motto**, such as "Take only pictures; leave only footprints."

8. Bioblitz!

- ☐ Guide students on a walk to **observe and document organisms**. Point out the inventory area, and reinforce safety and expectations. Help students explore the area using field tools and techniques and record their observations using the iNaturalist app on mobile devices. Reinforce that "The more you look, the more you see!"

9. Follow a few more tips.

- ☐ Create a unique **call sign** with your group to bring them back together if they spread out (such as a coyote howl, bird call, or clap).
- ☐ Take advantage of **teachable moments**. Students will respond positively to your enthusiasm.
- ☐ Use **simple language** when describing organisms or answering questions.
- ☐ If students ask a lot of **questions**, it can be time-consuming for a short field activity. You can manage questions by having students write questions down and save them for "question breaks."

10. Wrap up.

- ☐ Conclude by working with students to identify specimens upon returning from the field. **Thank students** for their strong observation skills, and assist them as they upload observations to iNaturalist. They will have an opportunity to look at the results of their work and others when they are back in class.