

What Is a BioBlitz?



Biodiversity is an *ecological* term that encompasses all the different kinds of living *organisms* of an area. Biodiversity is important because every *species*—large and small—plays a role in enhancing the productivity of the system of life. A greater diversity of species helps to ensure sustained life. For example, a greater number of native insect species equals a greater variety of beneficial insects that can reduce populations of insects that are harmful to crops.

In addition to species diversity, biodiversity includes the diversity of *habitats* and *ecosystems* as well as the genetic diversity (also known as the variation in genes) within each species. An *invasive species*, such as kudzu, harms biodiversity because it aggressively takes over ecosystems, shutting out native species from their preferred habitat and decreasing genetic diversity. Healthy habitats support many different species.

A *bioblitz* measures and demonstrates local biodiversity—it is a sample of the life within a given area. Community members team up with scientists to find and identify as many living species as possible during a

12- or 24-hour period. The event usually takes place in a park, school ground, or similar open natural area that provides habitat for organisms. During the scientist-led walks, participants learn about herbaceous plants, trees, mammals, invertebrates, amphibians, reptiles, and birds. They also learn about the importance of biodiversity and benefit from spending time outdoors.

BioBlitz Equipment

Essential Items

- Tally cards
- Sign-in list
- Signs to announce species walks
- At least one table for registration and place materials
- Printed agendas with locations of walks
- Flyers and posters to advertise the event

Useful Items

- Field guide books or smartphone apps appropriate for the area of interest
- Whistles or a cow bell to grab participants' attention
- Sample dishes/containers
- Killing jars (if permitted)
- Plastic pocket magnifying glasses
- Insect nets
- Nocturnal insect traps (e.g., bed sheets and ultraviolet light; pit traps)
- Game cameras to capture images of animals at night
- Geographic Positioning Systems (GPS) device or smartphone GPS app

Setting Up a BioBlitz

The complexity of setting up a bioblitz depends on the scope. A bioblitz involving an entire community takes a little more time to plan than a smaller bioblitz at a school of 1,000 students. The general steps are as follows:

1. **Form a committee.** Contact dedicated individuals who can share the work of developing and managing a bioblitz. As with any committee, a chair should be selected to coordinate activities.
2. **Contact organizers.** Check with previous bioblitz event organizers to ask questions and get tips.
3. **Create an agenda.** This involves deciding on topics or species to focus on; even 24 hours is not enough time to cover *all* biodiversity. For example, you may want to focus on mammals, aquatic animals, reptiles/amphibians, plants/trees, fungi, and some invertebrate species (for example, spiders and butterflies). An appropriate time should be designated for each species walk. We have found that 1 to 2 hours is sufficient. Less than 1 hour is not enough time for discussion, and it is difficult to hold participants' attention for 2 hours. If the event is held on a weekend, it is not usually necessary to set aside time for lunch because participants will eat before or after the event. Sometimes it is nice when a food vendor is available. Avoid stacking topics (covering two or more topics at the same time) because this can be difficult to manage, and most avid participants want to attend both walks. Plan walks sequentially with 10- to 15-minute intervals between walks so participants have time to gather.

A note about nocturnal bioblitz activities:

If a 24-hour bioblitz is desired, we suggest collaborating with a specific group, such as Master Naturalists or a college science class, to observe nocturnal organisms. Different invertebrates appear during phases at night, so it may be necessary to have an all-night vigil, which is unlikely to attract most of the general public. Game cameras set up in strategic locations may capture mammal activity at night, although the chances are slim during this 24-hour period. Finally, be aware of nighttime weather conditions.

4. **Identify and contact scientists to lead a walk.** If possible, designate a back-up scientist. In addition to universities, scientists can be affiliated with government agencies, museums, and nonprofit organizations. From the beginning, scientists should understand they are to help participants find and identify organisms during the walk. To develop a knowledge and appreciation for biodiversity, it is critical to involve participants in the discovery process. The scientist can add information about the species' role in the habitat in relation to other species and the environment.
5. **Develop advertising.** Once the agenda has been determined, develop advertising to publicize the event in the community or school. The flyer or poster should communicate the appropriate amount of information and not have unnecessary or cluttered details. Critical items to include are:
 - title,
 - location,
 - definition of bioblitz and why it's important,
 - schedule with times and associated topics,
 - sponsors, if applicable,
 - who can participate, and
 - contact information of a bioblitz coordinator to answer questions.

If it's a school bioblitz, students can create the posters.

6. **Create tally cards.** Several additional activities can be accomplished while the bioblitz is being publicized. A tally card is a simple piece of paper used to record identified species. Tally cards for scientists include start time, end time, habitats visited, number of participants in group, species common name, and species scientific name. Participants' tally cards can be simpler and include common name only.
7. **Registration brochure.** It's nice to provide a brochure at the on-site registration table. The brochure may include many of the same items you included on your poster. You may also want to include a map of the event area (indicating where walks will start) and safety information.



8. **Complete necessary forms.** Well in advance of the event, complete all necessary forms needed to implement a bioblitz on public property. Determine the property owner’s rules for use of the property, and, if necessary, include these rules on the brochure and instructions for scientists. For example, participants should be informed if they are not permitted to walk off the trail or trap insects.

During a BioBlitz

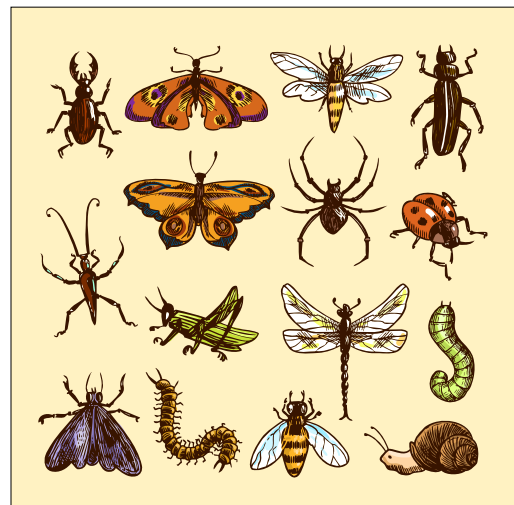
1. **24-hour bioblitz.** For a 24-hour bioblitz, set up nocturnal insect traps and game cameras. Periodically observe the traps to identify and count species.
2. **Registration table.** Set up a registration table at the staging area with a sign-in sheet and brochures. A sign-in sheet will allow you to assemble a contact list to notify about future events.
3. **Time schedule.** Participants will be expecting the walk to leave at the appointed time, so it is critical to make sure all walks stay on schedule.
4. **Scientists’ responsibilities.** The coordinator should remind scientists of their responsibilities before each walk.
5. **Equipment distribution.** A committee member should distribute necessary equipment to participants before each walk.

6. **Walk Announcement.** One committee member should verbally announce the walk three times:
 - upon the return of the previous walk,
 - 5 minutes before the start of the walk, and
 - at the start of the walk.
7. **Staging area photos.** One committee member should take photos at the staging area as well as on each walk. The photos can be used for future publicity and to record the event.



Conclusion

A bioblitz is a fun way to learn about science, biodiversity, and habitats. If you want to learn more about the Mississippi BioBlitz, attend an event in one of our state’s major cities. Usually, one or two bioblitzes happen every year in Mississippi.



Key Words

Bioblitz: Typically a 12- to 24-hour event that catalogs all the living species in a given area.

Biodiversity: All the different kinds of living organisms of an area.

Ecological: Having to do with ecology, or the study of the relationships between living organisms and between living organisms and their surroundings.

Ecosystem: A biological community of interacting organisms and their environment.

Habitat: The natural environment of an organism.

Invasive species: An organism that is not native and has negative effects on the environment it encroaches upon.

Organism: Living things, including plants, animals, fungi, and bacteria.

Species: A class of individuals having common attributes and designated by a common name.

Publication 2887 (POD-04-19)

By **Brady Self**, PhD, Associate Extension Professor, Forestry, and **Jason Gordon**, PhD, former Associate Extension Professor, Forestry.



Copyright 2019 by Mississippi State University. All rights reserved. This publication may be copied and distributed without alteration for nonprofit educational purposes provided that credit is given to the Mississippi State University Extension Service.

Produced by Agricultural Communications.

Mississippi State University is an equal opportunity institution. Discrimination in university employment, programs, or activities based on race, color, ethnicity, sex, pregnancy, religion, national origin, disability, age, sexual orientation, genetic information, status as a U.S. veteran, or any other status protected by applicable law is prohibited. Questions about equal opportunity programs or compliance should be directed to the Office of Compliance and Integrity, 56 Morgan Avenue, P.O. 6044, Mississippi State, MS 39762, (662) 325-5839.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director