

NATIONAL  
GEOGRAPHIC

# GUIDE TO BIOBLITZ

A program in conjunction with [iNaturalist.org](https://www.inaturalist.org)







**“At the end  
of our BioBlitz,  
students put  
handprints on  
a flag as a pledge  
to the species of  
mount hamiguitan.  
Hope filled our hearts  
as we dreamed of  
their hands protecting  
life here now and  
in the future.”**

**ANALYN CABRAS**  
BEETLE RESEARCHER  
UNIVERSITY OF MINDANAO  
PHILIPPINES







## FOREWORD

Achieving a planet in balance, one that provides for humanity and the many millions of other species with which we live, may be the greatest challenge of our century. For more than 130 years, National Geographic has worked to inspire people to understand, value, and protect life on our planet. A BioBlitz puts National Geographic's mission into action. BioBlitzes are fantastic opportunities for participants to become explorers, storytellers, and citizen scientists.

From Rocky Mountain landscapes to urban mangroves of Colombia, across island ecosystems of Indonesia and the Philippines, and in parks, schoolyards, and backyards all over the world, BioBlitzes are providing participants of all ages with opportunities to become observers of living things. These rich experiences inspire people to place greater value on the natural world, preserve the systems essential for all life on Earth, and effectively communicate the importance of biological diversity.

With your help, National Geographic can harness the power of citizen science and storytelling to encourage changemakers around the globe to explore ecosystems and help to identify the incredible life on Earth. Understanding and appreciating the organisms that inhabit our planet is a critical first step toward a more sustainable future.

A handwritten signature in black ink that reads "Vicki Phillips".

**VICKI PHILLIPS**  
CHIEF EDUCATION OFFICER  
NATIONAL GEOGRAPHIC SOCIETY



# ABOUT THIS GUIDE

This guide is designed to help you organize a BioBlitz for roughly 10 to 100 participants. There's no one-size-fits-all recipe for these dynamic events, but here you'll find curated advice and recommendations from BioBlitzers around the world to help you organize and engage participants. The goal is to enable educators, explorers, community leaders, and enthusiasts to promote a global appreciation for biodiversity, engage communities in citizen science, and join National Geographic in our pursuit of a planet in balance.





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# INTRODUCTION TO BIOBLITZ

## WHAT IS A BIOBLITZ?

A BioBlitz is a celebration of biodiversity. It's an event that focuses on finding and identifying as many species as possible in a specific area over a short period of time. Students, scientists, naturalists, and community members join together in these events to explore the natural world. Typically led by educators, scientists, or park rangers, BioBlitzes are an opportunity to take a snapshot of the biodiversity of a place. Participants of all ages can learn techniques for observing and collecting plant and animal data within a designated area and time frame. With smartphone applications such as iNaturalist ([iNaturalist.org](https://www.inaturalist.org)), collecting species data is easier and more engaging than ever before.

BioBlitzes can be held just about anywhere—from local, state, or national park sites to a schoolyard or backyard. They can be aquatic and/or terrestrial, sometimes even focusing only on tiny, microscopic organisms or a particular taxa. They can last for a few hours, a weekend, or a few weeks.





## CASE STUDY: BOGOR STUDENT BIOBLITZ

### BOGOR, INDONESIA

Nat Geo Explorer Ayu Oktavian hosted a BioBlitz at the Bogor Botanical Gardens near her home university in Bogor, Indonesia. Ayu shared the expertise of her research team with government administrators, teachers, and students from the area for this experiential education opportunity. Prior to the event the research team visited schools to help students practice using iNaturalist. The BioBlitz day included an introduction to the garden, species identification tips, and some practice with fieldwork tools, including binoculars, fieldguides, and nets. "For many students, this was the first time using these tools, and it was an exciting way to start the event," said Ayu. In two sessions of data collection, with a break in between, students contributed more than 130 observations and finished with an art project: painting their favorite species from the day on drawstring book bags. "Most of the students had been to the botanical garden before, but this was their first time learning about local wildlife in a firsthand, scientific way," said Ayu.



## CASE STUDY: CITY NATURE CHALLENGE

### 100+ CITIES WORLDWIDE

Started in 2016 for the first-ever Citizen Science Day, the citizen science teams at the Natural History Museum of Los Angeles County and the California Academy of Sciences in San Francisco dreamed up the City Nature Challenge (CNC) as a friendly competition around urban biodiversity. The first such challenge was an eight-day competition between Los Angeles and San Francisco, engaging residents and visitors in documenting nature to better understand urban biodiversity. More than 1,000 people made over 20,000 observations, cataloging approximately 1,600 species in each location, including new species for both areas. In 2017, the CNC went national with 15 cities competing, and in 2018, it became an international event. In 2019, more than 100 cities around the world are planning to compete.







## WHY HOST A BIOBLITZ?

BioBlitzes build both community among people and connections with natural environments. They engage participants—from young children to experts—in an immersive exploration of their local biodiversity and promote awareness of the importance of understanding our natural world. BioBlitzes offer a number of scientific, organizational, individual, and community goals and benefits. These include the following:







## SCIENTIFIC AND ENVIRONMENTAL OUTCOMES

BioBlitzes offer an opportunity to develop and expand on existing data sets. With well-planned oversight, participants can collect enormous quantities of local species and biodiversity data. BioBlitzes build connections between scientists and local communities, promoting a sense of pride for the scientific work being done in the community. They can even lead to discoveries of species not previously observed in an area, or new species to science!

## ORGANIZATION OUTCOMES

Planning and running a BioBlitz gives organizations the opportunity to showcase their work while building community relations and inspiring new generations of scientists and naturalists.

## INDIVIDUAL OUTCOMES

BioBlitzes are a blast! Participants gain an understanding of scientific survey practices and the biodiversity of their environment, and an appreciation for local plants and animals. They enhance participants' sense of place and community and also provide exposure to citizen science as a way of contributing valuable scientific observations and data.

## COMMUNITY OUTCOMES

Engaging a diverse group of community participants, BioBlitz leaders, and naturalists is exciting. Community members gain a new understanding of scientific practices and their local ecology while connecting with one another, both in person and through iNaturalist.



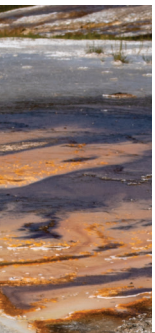


# ORGANIZING A BIOBLITZ: AN OVERVIEW

Careful planning is key to hosting a BioBlitz, no matter what the scale might be. Selecting a diverse team, developing your toolkit, and planning the logistics of the event will help you build community partnerships, collect high-quality data, and reach your project goals.

## SETTING GOALS

The first step in planning a BioBlitz is setting your intentions. Include your partners and key players in the discussion when deciding what goals and outcomes are most important for your BioBlitz. Whether your priority is collecting critical data, promoting community understanding of the importance of biodiversity, or introducing students to local ecological communities, aligning your planning team to a few key goals is essential for event success.







## **BUILDING A TEAM**

Critical to BioBlitz success is a driven and enthusiastic team. Reach out to community members, including educators, scientists, naturalists, organizations, and other enthusiasts that may be interested in collaborating on your project. Understanding the resources each contributor brings to the table will direct how your team accomplishes your BioBlitz goals.

## **PLANNING AND LOGISTICS**

There are many ways to hold a successful BioBlitz, but planning the logistics for staffing, equipment, transportation, and event support are critical in every case. Each event has different requirements but attention to the details is always important.

**“We found quite a number of different species, including a bunch of rare plants and unusual insects. We had a lot of local people, including kids, catching salamanders. The Park learned it had some special species and several biologists who participated went on to develop relationships with the Park.”**

### **SAM DROEGE**

KENILWORTH AQUATIC GARDENS, 1996  
WASHINGTON, D.C., UNITED STATES



# BIOBLITZ SCIENCE

You're gathering a group to learn about biodiversity firsthand: exploring, observing, and counting the species that live in a particular place. Whether it's a small group using iNaturalist as a recording tool or a large group working with experts to conduct a comprehensive species survey, a BioBlitz usually involves asking one or more questions. These questions can help guide learning and science outcomes and may vary in complexity, depending on who your participants are:

## WHAT'S HERE?

- How many different species are here?  
Which species are most surprising or intriguing?  
Who can get the best photo or video of an intriguing species?
- How many taxa are represented?
- Which species and taxa are most common?
- What signs of wildlife do we see (e.g., scat, tracks, bones, feathers, marks)?
- Are there invasive or exotic species?
- Which species are captive/cultivated?
- What stages of life are represented (i.e., egg, pupa, larva, juvenile, adult)?





## WHY HERE?

- What plants are hosts for pollinators? What food sources draw certain species to this place? What shelter options does this space provide for living things?
- What conditions make it possible for seeds to be dispersed here? Seeds to grow here?
- What migratory species pass through this area, and when? How does the migration change from season to season and year to year?
- How does the level of biodiversity here compare to other places in the region?
- Are there corridors or pathways where migratory species travel?
- How are the species present interdependent? As part of food chains and food webs? In symbiotic relationships?

## WHY CARE?

- How do humans affect this natural environment?
- Is the biodiversity here changing?
- Are invasive species harming the natural environment?  
In what ways?
- How do the species present contribute to environmental health and community resilience?
- How would this place and its biodiversity change if this natural environment were no longer here?





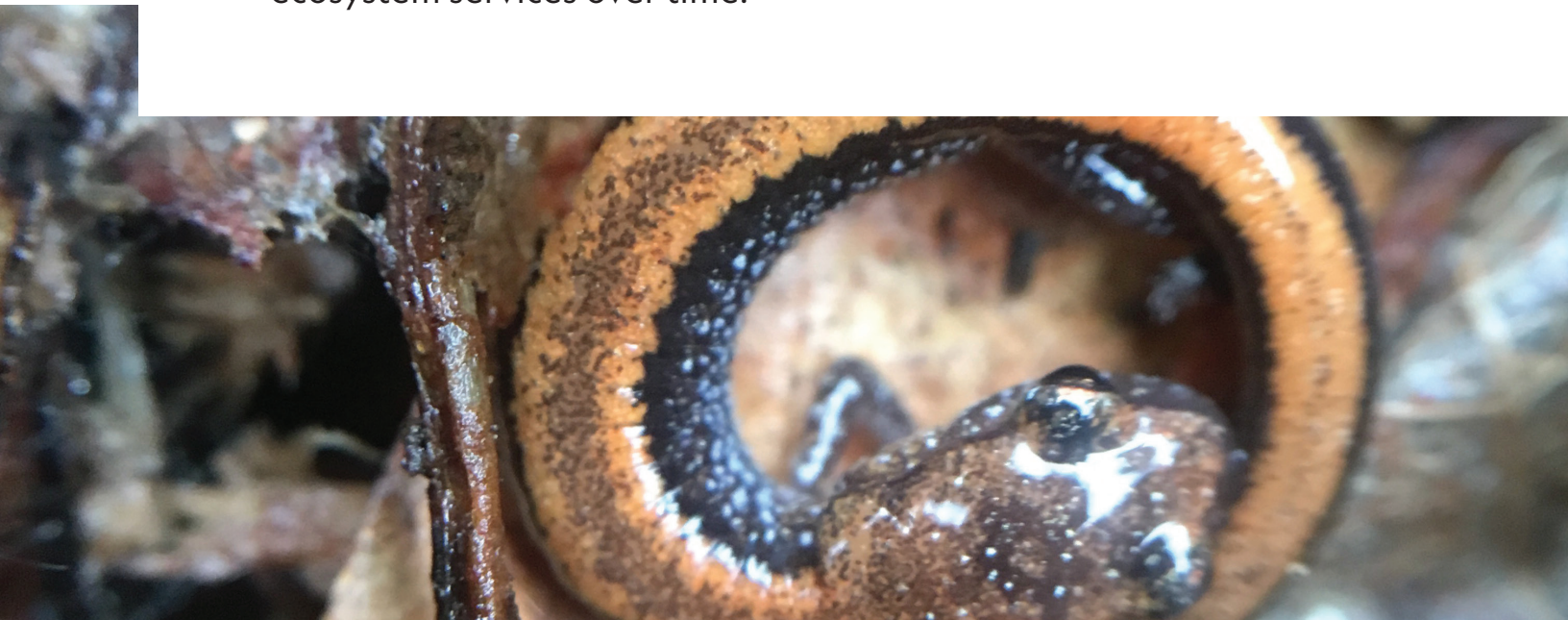
Key questions will help drive the direction of observations, data collection, and data analysis. An inventory of the species observed during your BioBlitz may serve as a baseline to compare with future data sets and as a launchpoint for discussing guiding questions. BioBlitzes may also focus on specific types of plants, invertebrates, or other taxa and help monitor the prevalence of those key species.

If possible, reach out and engage with naturalists or scientists who are familiar with the area. Ask what makes the area's biodiversity unique, what affects the biodiversity, and key questions about species. Start the conversation about why biodiversity matters in your community, and also how to protect it.

### **CASE STUDY: BIOBLITZ BASELINE MONITORING**

#### **PENNSYLVANIA, UNITED STATES**

Professors and students in the Sustainable Engineering program at Villanova University outside Philadelphia were interested in determining a baseline of biodiversity across the Villanova campus and developing and enhancing habitats across campus over time. Students signed up for shifts on a Saturday, using a computer lab as a basecamp. Students and organizers spread across campus to cover grassy areas, wetland areas, gardens, a wooded arboretum, and unmowed meadow areas. The program plans to collaborate with biology and GIS students and researchers across departments to develop a model for semiannual monitoring BioBlitzes and habitat restoration to enhance Villanova's biodiversity and ecosystem services over time.







## CASE STUDY: DATA QUESTS

### MASSACHUSETTS, UNITED STATES

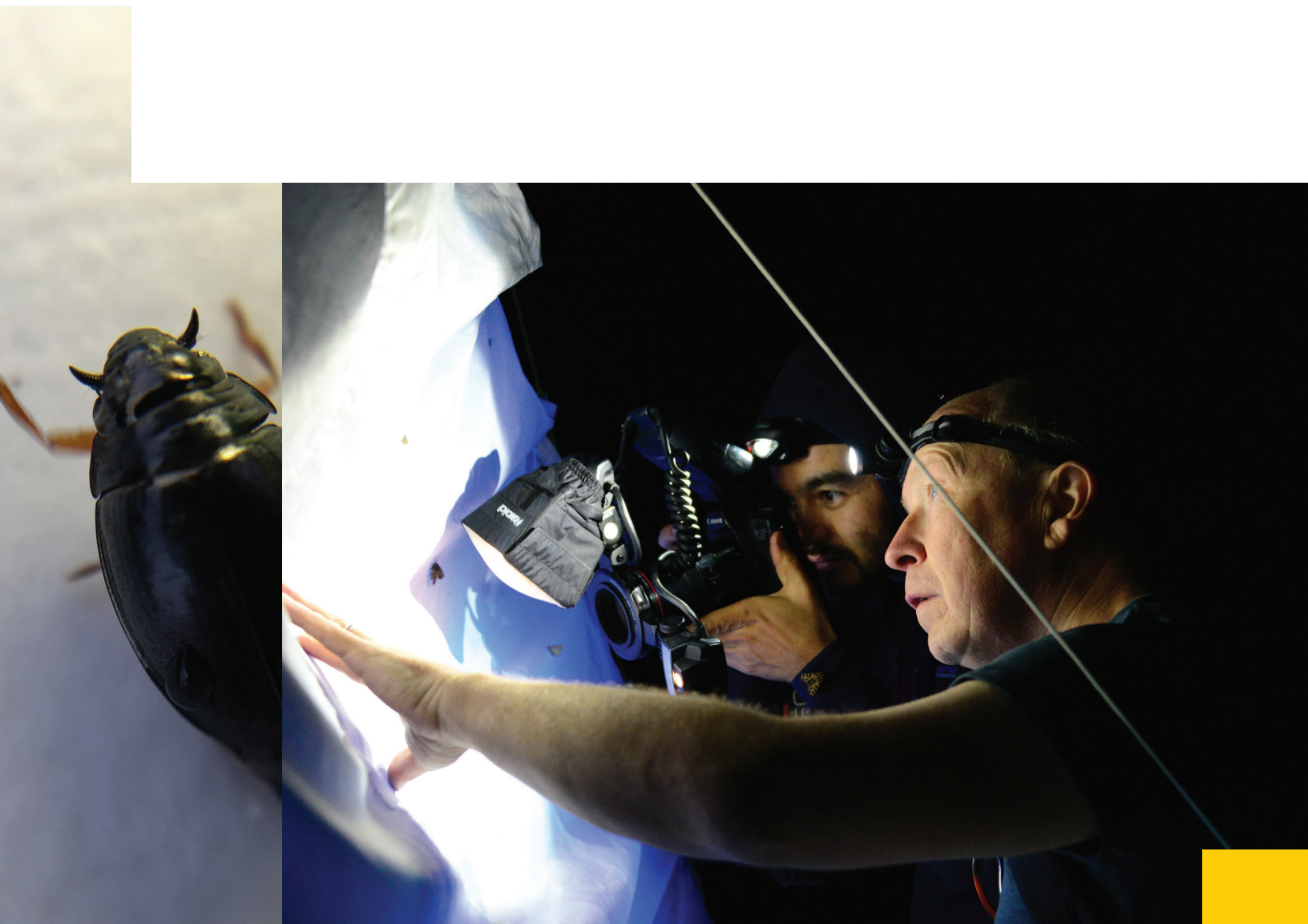
Incorporating research questions can add value to a BioBlitz experience, while also helping researchers address local issues. The 2018 Boston City Nature Challenge introduced six “Data Quests” focused on observing specific organisms to address local conservation needs. Data Quests are observation goals linked to local conservation questions and discoveries. The quests were set up by a group of researchers, local conservation organizations, zoos and aquaria, state parks, land trust/conservancies, and educators. These included quests like the “Great Squirrel Adventure,” which documented six species of squirrels along an urban to rural gradient, and “Delectable Oysters,” which mapped two native and invasive oyster species in Boston Harbor and beyond. Due to the easy accessibility of the focal species, the quests produced a lot of excitement and interest from both first-time BioBlitzers and experienced iNaturalist users. Several discoveries were made, including a large thriving colony of native oysters where they were thought to have been outcompeted by invasives!



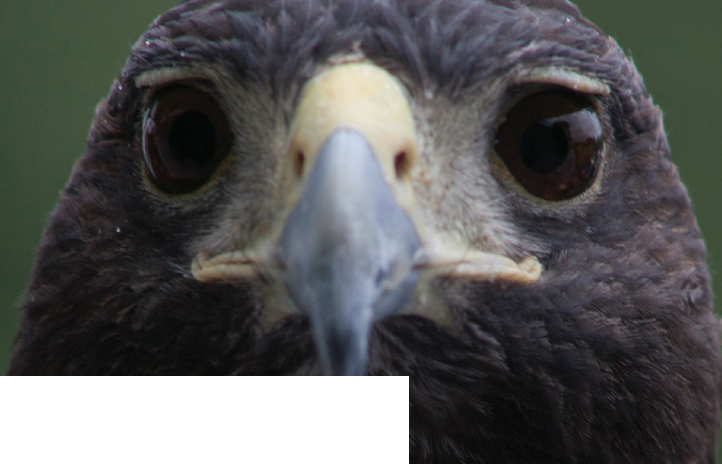


# ENGAGING EXPERT LEADERS

BioBlitzes can be a chance for children and adults to work alongside a marine or terrestrial biologist, ecologist, entomologist, lepidopterist, ornithologist, botanist, or other type of scientist. The outcomes of including scientists in your event can include insight into how these professionals do science and how they tackle research questions. A university-based biologist can practice their outreach with children and adults and bring graduate students who are deeply engaged in their areas of study. University students are often excellent mentors for future biologists and conservationists. They are typically excited to share their work and inspire children to engage in scientific observation during the BioBlitz, encouraging them to ask questions about the natural world.







Amateur naturalists and hobbyists (such as birders) can also be valuable additions to a BioBlitz. They spend their free time immersed in long-term learning about plants or animals and can share their expertise on the species in the local area.

A BioBlitz can still be successful even if you don't have experts on-site. With image recognition and artificial intelligence capability through the iNaturalist app, learning can take place in the field without the direct guidance of a trained scientist. Observations uploaded to iNaturalist are reviewed by other users, and sometimes followed by a conversation or debate about a particular observation and its identification.

Both ways of interacting with experts and enthusiasts, in person and online via iNaturalist, are complementary as they build community around biodiversity.

**“Kids used petri dishes to collect insects and viewed them through a microscope. They made videos with macrolenses attached to phones. The kids were so happy—probably hooked on insects for life!”**

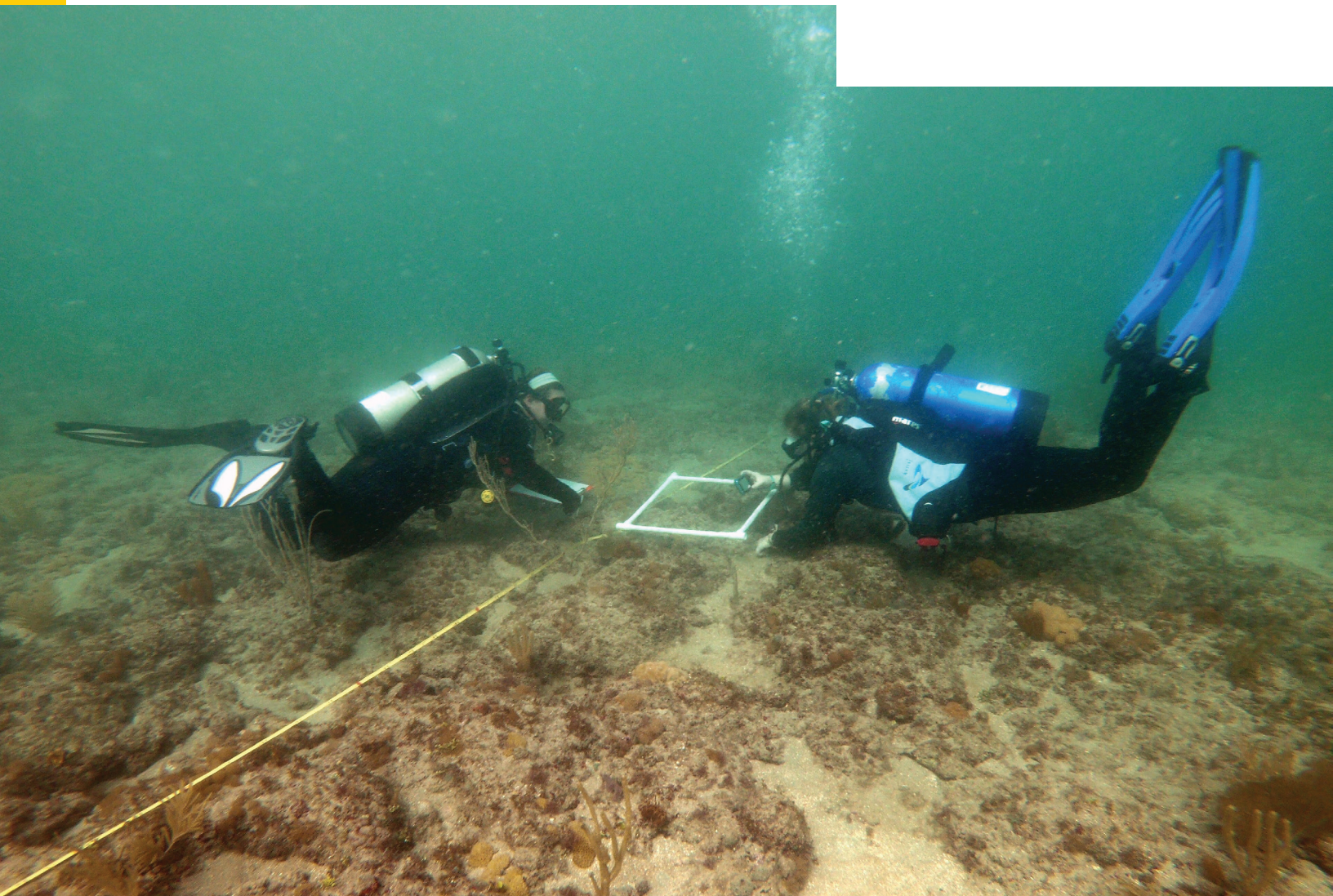
**ANNE HAYWOOD**  
MIAMI, FLORIDA, UNITED STATES



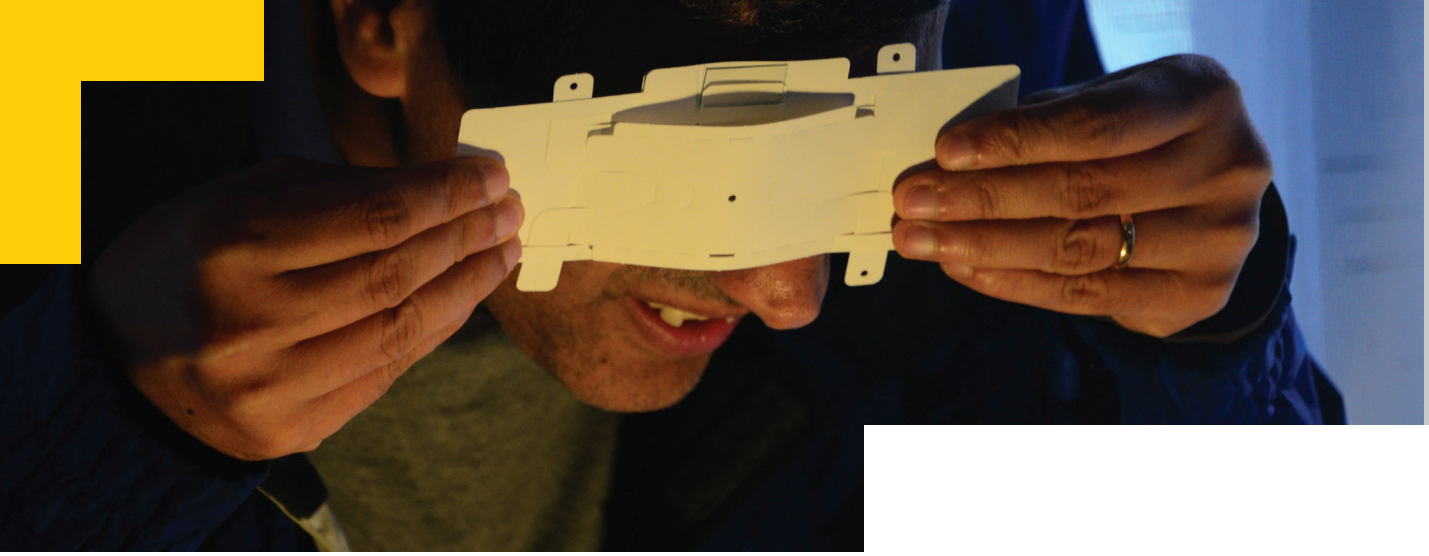


# COLLECTING AND ORGANIZING DATA

Participating in a BioBlitz can be a powerful way for people to experience collecting real scientific data. Observations can be recorded on paper data sheets and/or with a variety of mobile apps, including iNaturalist. Photos of various species and recordings of bird, bat, or frog sounds can also be part of the data collection, uploaded via smartphone or through iNaturalist or another platform. Scientists, researchers, students, and others can access the data, visualize it on maps, and analyze it to help address research questions and describe local phenomena.







Collecting data to contribute to citizen science allows people to play a meaningful role in the scientific process and to see how science works in practice. Citizen science also helps scientists collect more data than they could without help, incorporate different research approaches, and create whole new projects. For example, when National Geographic partnered with the National Park Service to host BioBlitzes, all the data went into the official NPSpecies database as an official record, and is being used to help plan management actions in the parks.

Think about how your BioBlitz data might be used, connect with organizations and agencies that would benefit from the data, and use tools like the iNaturalist app and website to collect data and share it with others.





# ABOUT **iNaturalist.org**

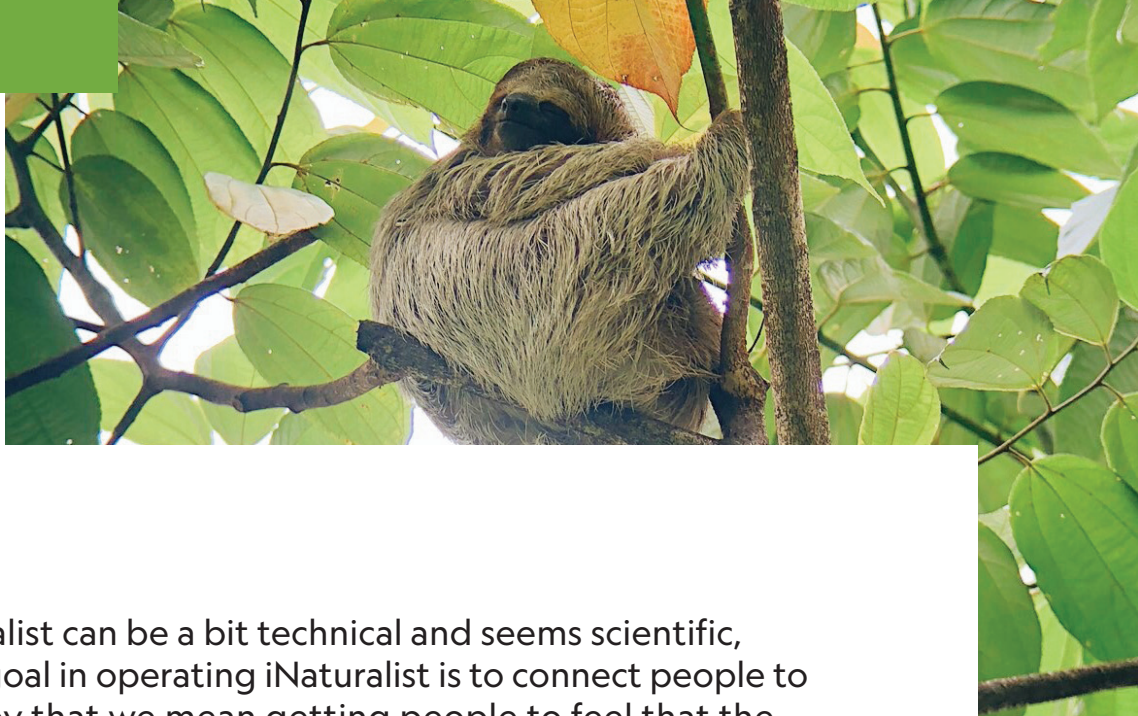
iNaturalist is a lot of things, but at its core

iNaturalist is an online social network of people sharing biodiversity information to help each other learn about nature.

It's also a crowdsourced species identification system and a tool to record the occurrence of organisms. You can use it to make your own observations, get help with identifications, collaborate with others to collect this kind of information for a common purpose, and access the observational data collected by iNaturalist users.







While iNaturalist can be a bit technical and seems scientific, the primary goal in operating iNaturalist is to connect people to nature, and by that we mean getting people to feel that the non-human world has personal significance, and is worth protecting. We have a pretty nerdy way of doing that, of course, but we really believe that recording information about nature in a social context is a tremendous way to understand the awesome depth and breadth of life on Earth.

Our secondary goal is to generate scientifically valuable biodiversity data from these personal encounters. We believe iNaturalist can achieve both of these goals simultaneously—in fact, that they reinforce one another—but when we get pulled in conflicting directions, we measure success by our primary goal. If we connect people to nature without contributing to any specific scientific outcomes or quantifiable conservation results, then we’re still doing our job, but if we just contribute to science without inspiring people to care about the natural world, we’ll be on the wrong track.



**FROM INATURALIST.ORG**

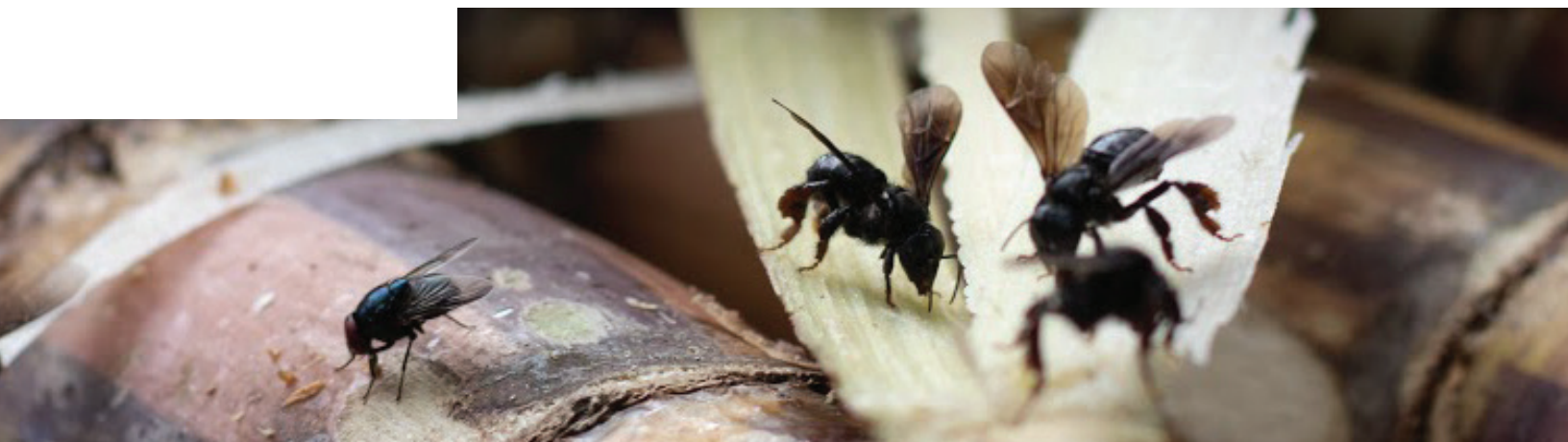


# PLANNING A BIOBLITZ

## CASE STUDY: SCHOOLYARD BIOBLITZ

### FLORIDA, UNITED STATES

In a schoolyard BioBlitz program in northwest Florida, preparing teachers, students, and volunteer family members was key to success. Organizers worked with teachers to align learning goals, introduce the BioBlitz, and demonstrate iNaturalist. They then provided lesson plans or led in-class activities. This preparation helped students build foundational field skills such as using identification guides, classifying organisms, and using field collection tools such as butterfly nets, binoculars, and petri dishes. Before going outside, older students photographed live insects in containers to practice making observations. Finally, all participants read a guide about potential venomous or poisonous organisms they might encounter and how to manage risk. The preparation led to pure delight and excitement as students, teachers, and volunteers chased butterflies and flipped through identification guides together during several school-based events.





# BUILDING A TEAM

Recruiting partners, local naturalists, and volunteers offers BioBlitz participants a greater opportunity to engage with biodiversity while learning more about how science works. Local scientists and naturalists make fantastic biodiversity liaisons, explaining natural processes, engaging participants in scientific thinking, and serving as leaders during BioBlitzes.

Reach out to local scientific outreach organizations and community groups that may have local knowledge and experience. Enthusiastic organizations, local businesses, and universities may be able to provide volunteers to ensure your BioBlitz is sufficiently staffed. Each volunteer and scientific liaison will require training prior to the event to ensure a consistent experience for all participants.

When recruiting volunteers and approaching organizations, be sure to express clear goals for your project (e.g., building relationships with scientists and community members, promoting biodiversity awareness, or inspiring participants to learn about and help protect this place).

Once your partnerships have been finalized, ensure that you are providing volunteers with the tools and training necessary for success. Help volunteers become proficient with iNaturalist or another method for recording species data. Also, make sure they understand the safety protocols for the event and their role(s) in achieving the goals of the BioBlitz.







## FINDING PARTICIPANTS

BioBlitzes can involve participants of all ages and levels of outdoor experience. Depending on your goals and how large your BioBlitz will be, you might want to reach out through community partnerships to engage diverse groups as both participants and volunteers. Consider including school groups, youth organizations, master naturalists, churches and other religious organizations, universities, and membership of science museums, zoos, botanical gardens, and nature centers.

You can use social media, printed flyers, newsletters, and more to reach out to the community. Also, the messaging and journal features on iNaturalist allows you to add updates directly to your project and sends a notification to project members. In iNaturalist you can also tag individuals in posts like on other social media platforms.



## CASE STUDY: MULTIPLE STAKEHOLDERS

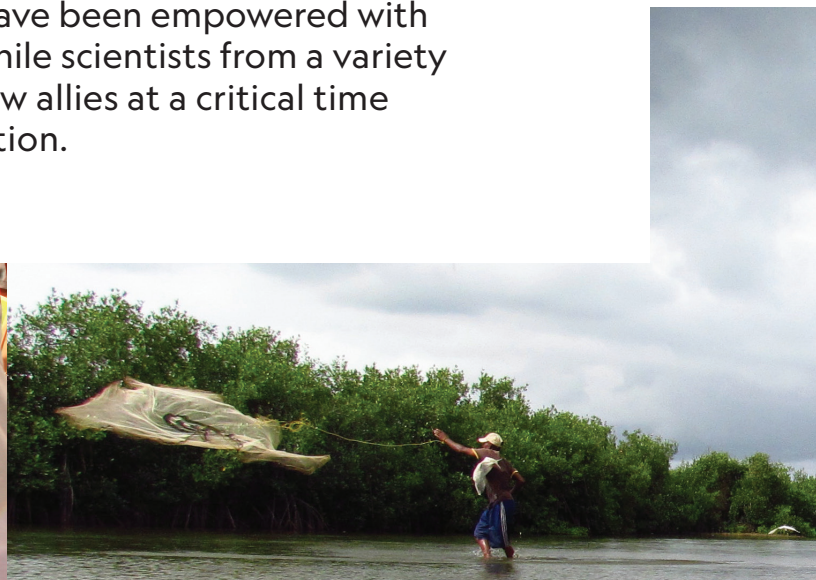
### CARTAGENA, COLOMBIA

In an annual BioBlitz in Cartagena, Colombia, community stakeholders came together to document biodiversity in Ciénaga de la Virgen, a marginalized mangrove lagoon at the heart of this Caribbean city's urban growth.

The goals of the annual event were to reawaken and strengthen the relationship between citizens, especially new generations, with the lagoon, and gather baseline biodiversity data to monitor ongoing impacts, bring factual information to discussions about development and sustainability of the lagoon, and generate trust and social value.

Fishermen, ecotourism guides, environmental officials, urban developers, researchers, teachers, and students formed working groups for focal taxa—plants, fish, birds, reptiles and amphibians, mollusks, insects, crustaceans, and mammals—based on expertise and interest. Other variables, such as water quality and forest cover, were also studied to achieve a more complete picture of the state of the ecosystem. One of the participating universities took the activity further, creating a research program throughout the year involving its entire environmental engineering program around the BioBlitz findings.

The activity has allowed people to connect with and experience the mangroves in a new way, creating meaningful experiences for urban youth who would otherwise never have known the value of this ecosystem. Local communities who have traditionally depended on the mangroves have been empowered with data about their mangroves, while scientists from a variety of institutions have become new allies at a critical time for sustainability and conservation.





# BASECAMP PREPARATION

Many larger BioBlitzes have a home base or “basecamp.” A basecamp can be a site for kicking off and culminating the event, providing schedules, and running tallies of species counts on a board or monitor hooked up to WiFi. It can be the place where participants meet inventory groups to head out into the field together. Experts, naturalists, and participants can gather there and rest as well as identify, observe, photograph, upload/download data, and display anything related to the BioBlitz and its inventories. The basecamp area can also be the place to reach out to the public with messaging about activities for different age groups.

Depending on the size and goals of the event, basecamp may be as small as a fold-out table or as large as a classroom. You could use a covered pavilion or a temporary tent setup.

Smaller BioBlitz events may not require a centralized hub, instead establishing a meeting place after the BioBlitz such as a local library, coffee shop, or pub. If using iNaturalist, consider choosing a spot where you can project onto a screen, discuss results, and coach participants on uploading and identifying species.







## CASE STUDY: MINI-BIOBLITZ BASECAMP

### WYOMING, UNITED STATES

During a BioBlitz in Grand Teton National Park, participants split into groups of 12, each with 10 participants, a naturalist, and a volunteer leader. Each group explored a different ecosystem near the basecamp, which was a set of picnic tables staffed with volunteers and stocked with water, snacks, first aid kits, and extra survey supplies. Basecamp was the launching point for groups at the beginning of the event and served as the gathering point at the culmination of the survey. The event organizers were able to discuss next steps for post-BioBlitz activities and facilitate a discussion about biodiversity. Using a basecamp in tandem with informational announcements during the event made it clear to participants where they would need to go in case of confusion or emergency.





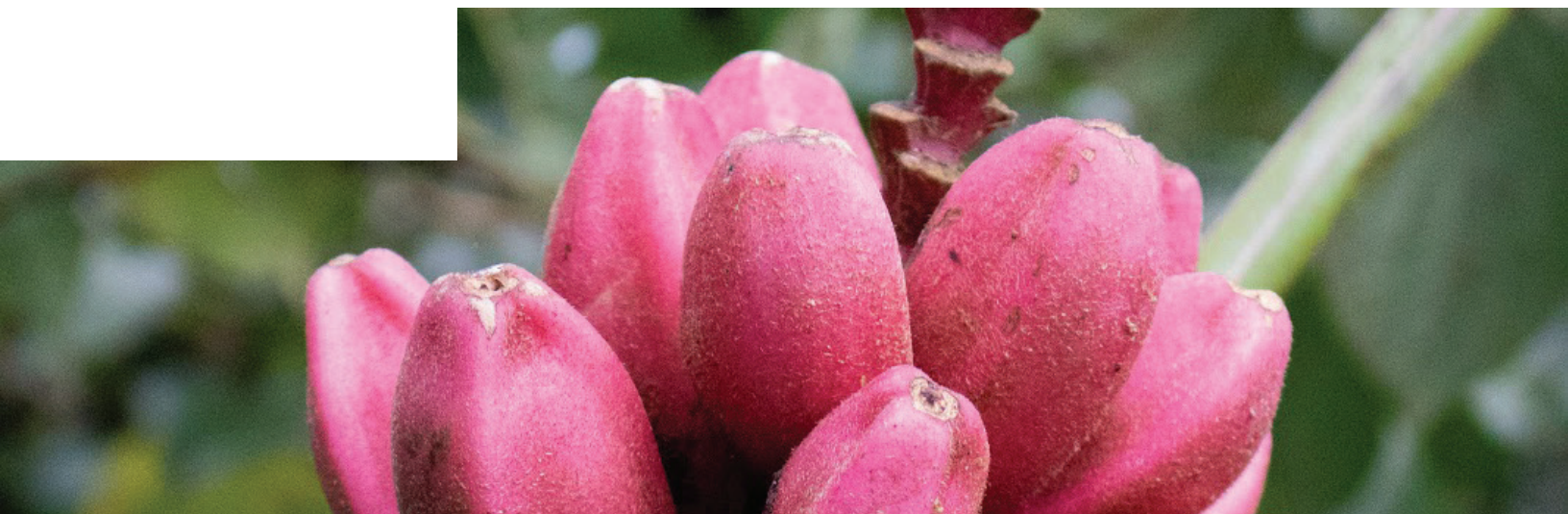


## BUDGETING

A limited budget doesn't mean you can't successfully host a BioBlitz. Free applications, including iNaturalist, downloadable resources on NationalGeographic.org, and other resources, make it possible to organize and host a BioBlitz with minimal funding.

Community partners will often donate or lend supplies for the event. Local nature centers often have equipment they can lend: clipboards, measuring tapes, writing utensils, magnifying lenses, paper field guides, binoculars, microscopes, and more. Local businesses might donate snacks. Always ask participants to bring reusable water bottles, and borrow water coolers for refills if needed.

Coordinators can use social media and other electronic communication to enlist volunteers. You might also ask a local printer for donations of a banner, stickers, or promotional items.





# PLANNING FOR SAFETY AND EMERGENCIES

Like any outdoor activity, BioBlitzes require safety and emergency preparation. Although precautions will differ depending on the number of participants and location of the BioBlitz, there are several universal considerations. Have first aid materials, water, and bandages on hand to deal with minor on-site injuries. Work with local site management to determine their planned response to emergencies, including procedures for transporting a participant or staff member in the case of injury. To ensure a safe and enjoyable event, make volunteers and staff aware of the precautions and the actions necessary to handle emergency situations.





# THE BIOBLITZ EVENT

## BIOBLITZ OPENING

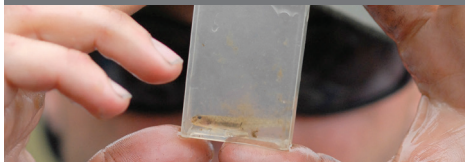
How you start your BioBlitz can help prepare participants while ensuring that they have the tools and support to succeed. A brief presentation on safety and where facilities such as restrooms are is important. A high-level overview of when and where associated events will take place is important for retaining and engaging participants. Emphasizing desired outcomes and goals of the BioBlitz can help to motivate and focus participants. If you are using iNaturalist, offer demonstrations of how to use the app.



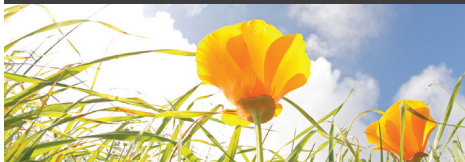
# TIPS FOR FINDING ORGANISMS

Here are expert tips for observing and collecting data for various taxa:

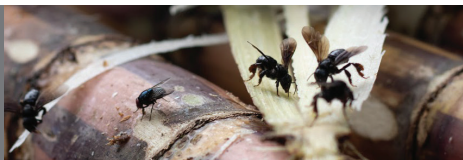
**MICROORGANISMS:** Use a digital microscope/camera or “Foldscope” for a low-cost option with smartphone. Take multiple photos.



**PLANTS:** Take photos of parts at different scales: the whole plant or tree, a leaf, the flowers, and the seeds.



**BIRDS:** Ask participants to bring binoculars or cameras with a zoom lens. Participants can download the sound app that’s compatible with iNaturalist to record birdsongs.

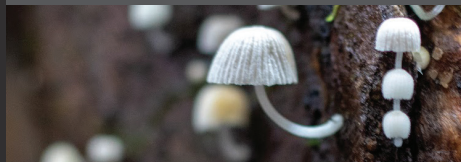


**INSECTS:** Collect crawling insects with a plastic petri dish, and flying insects with a net. Find a number of insects hiding in plants by using a stick to shake a bush over a sheet placed underneath. To find ground dwellers, place leaf litter on a tray and sort through it, using a hand lens to magnify tiny moving specks that just might be insects. Use a macro lens on a smart-phone for photos to get magnified images of the entire insect plus close-ups of the head, mouth parts, and the rear. Butterflies can often be photographed more easily when not caught with a net, which can also break fragile wings.

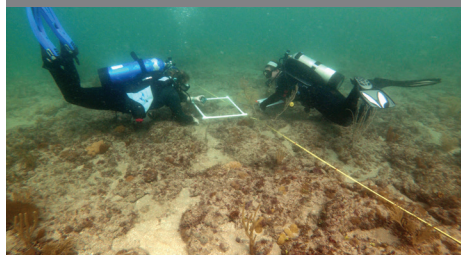
**MAMMALS:** It’s not easy to spot mammals, but evidence of their presence including scat, tracks, and bones are appropriate proof of an observation.



**MUSHROOMS:** Photograph the cap, underside of cap and stem, and with substrate including leaves nearby.



**MARINE ORGANISMS:** Use a seine to collect organisms in shallow areas. Temporarily place animals in water from the source in an aquarium or other clear bin for viewing and photographing. A macro lens clipped to a phone can help with taking photos of tiny organisms.



**All taxa:** Local field guides are great for preparing people for what they might observe!



# POST BIOBLITZ

How you end your BioBlitz is important. Finishing with an upbeat, team-oriented message can inspire participants' and collaborators' future engagement in citizen science efforts and continuing interactions with the natural world. In addition, how coordinators and participants manage data at the end and after the event will make a difference in the data's quality and usefulness.

Bringing the group together at the event's end is an opportunity to discuss the tally of observations and species. Display the project page on a monitor, showing observations in list and map mode, or go low-tech and simply show a poster with a tally for various taxa. Some closings have included creative celebrations, with unique moments such as a jazz band performance, Hawaiian dance, and even a choreographed BioBlitz dance! The wrap-up is also an ideal time to extend thanks to all participants, partner organizations, and coordinators for the event.

**“We can rewild our natural world. We can go into our schools and do BioBlitzes, we can go into our backyards, we can think about what it takes to have whole functioning nature.”**

**JOHN FRANCIS**

NATIONAL GEOGRAPHIC/NATIONAL PARK SERVICE BIOBLITZES





Encourage participants to share their experiences and the results with their social networks by using an event hashtag. Use #bioblitz and also create your own for your event. The hashtag serves as a collection of the group's photos and experiences across multiple social networks including Instagram, Facebook, and Twitter.

The BioBlitz is over, but it's likely there's still work to be done. If using iNaturalist, event leaders can call participants to action to identify species either on-site or after the event. This is important for capturing all of the BioBlitz data—increasing the data quality and quantity.





Some BioBlitzes hold the wrap-up at a location with WiFi to bring participants together to work on laptops and upload their observations. With the help of iNaturalist and field guides, participants can identify the species, genus, or family for each observation. Strive for verifiable observations in which a majority of iNaturalist users agree on an identification, achieving “research grade” status. These observations become part of a Global Biodiversity Information Facility (GBIF) data set and also flow into the Encyclopedia of Life (EOL). Both GBIF and EOL can be accessed by researchers globally—which makes your BioBlitz data useful locally and worldwide.

If you were not able to host a gathering focused on identification and data quality, you can reach out and ask participants to join in the process of data management and analysis during the week after the event. Some participants may still have photos to upload, so encourage them to take time to edit photos, if needed, and pull all relevant data into the app as observations. Make sure participants and coordinators know that they can help by looking through all of the observations and helping to verify the observations.

Once everyone has dispersed, event coordinators will want to continue to log or upload data, check data quality, communicate results, and analyze the outcomes of the event. Communicate overall accomplishments in an email to your participants and in a journal entry on your iNaturalist project page. Include statistics about the data collected, number of participants, participants with the most observations and species, unique findings, and any other interesting discoveries or outcomes from the event.

And, of course, send thanks to volunteers, partnering organizations, scientists, naturalists, organizers, and the participants themselves. BioBlitzes are community events, so maintain strong relationships with both event partners and participants so they'll return—with friends and colleagues—for future events. Thank all contributors for engaging with the world as explorers and citizen scientists, and passing their passion for biodiversity on to future generations.

## **CASE STUDY - DIVE AND IDENTIFICATION PARTY**

### **MASSACHUSETTS, UNITED STATES**

After a BioBlitz dive party in a popular swimming cove in Gloucester, Massachusetts, where participants documented hundreds of marine invertebrates and seaweeds, everyone changed into dry clothes and gathered at the local brewpub for an identification party. The pub offered food and drink specials to the BioBlitzers. Participants gathered around computers in small groups to upload observations to iNaturalist together and add identifications. The party generated interest from other patrons who joined the effort. Gathering for an identification party ensured that all participants were able to upload photos and add identifications to observations with the support of more experienced iNaturalist users, and the social aspect added value to the experience for all.





# BIOBLITZ RESOURCES

Below are a few resources to build on the information provided in this guide.

**National Geographic BioBlitz Resources:**

Classroom and outdoor learning activities for before, during, and after a BioBlitz, including additional guidelines and other media resources for event planning and inspiration.

<https://www.natgeoed.org/bioblitz/>

**iNaturalist BioBlitz Guide:**

Detailed how-tos for using iNaturalist for a local BioBlitz.

<https://www.inaturalist.org/pages/bioblitz+guide>

**iNaturalist Teacher's Guide:**

Recommendations for using iNaturalist for K-16 student learning.

<https://www.inaturalist.org/pages/teacher%27s+guide>

**City Nature Challenge:**

Information about the annual international iNaturalist competition.

<http://citynaturechallenge.org>

**City Nature Challenge Education Toolkit:**

Classroom activities, field investigations, media, and guides to prepare students, nature center visitors, homeschools, and more for the CNC.

<http://citynaturechallenge.org/education-toolkit/>

**Australia BioBlitz Hub and Guide:**

Guidance for setting up a large BioBlitz for 100-1,000 participants.

<https://citizenscience.org.au/the-australian-bioblitz-hub/>

**U.K. Natural History Museum BioBlitz Guide:**

<http://www.nhm.ac.uk/content/dam/nhmwww/take-part/Citizenscience/bioblitz-guide.pdf>

# BIOBLITZ PLANNING WORKSHEET

BioBlitzes are like organisms, a variety of shapes and sizes, with different functions and characteristics. Use this worksheet to guide you and your team as you plan the event.

## GOAL SETTING

What are the BioBlitz goals? Goals can involve science, education, outreach, and more.

**Science:** How can this event contribute to current work in research and/or exploration? What research questions could BioBlitz data help to address?

**Education and Outreach:** What do we want participants to better understand through the BioBlitz?

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## LOGISTICS

**BioBlitz Location:** \_\_\_\_\_

**Date(s) and time:** \_\_\_\_\_

### Check all that apply:

Daytime                      Nighttime

Aquatic                      Terrestrial

**Ideal number of participants:** \_\_\_\_\_

**Supplies:** *(circle what you and participants have; underline what you need; cross off what you don't, and add more in the space below)*

Smartphones      Tablets

Laptops              Camera Equipment

Aquaria              Nets

Binoculars              Macro Lenses

Bins/Pans  
*(for leaf litter)*              Lights and Sheets



# BIOBLITZ PLANNING WORKSHEET

## DATA

Will you use paper data sheets, or are tablets/smartphones available? If using iNaturalist, plan to upload photos after the event, when you have wi-fi (which can simultaneously become a post-bioblitz celebration!)

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How and when can you get participants familiar with and practicing using the iNaturalist app?

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## PEOPLE

**Possible Partner(s):** A partner often knows a place well, or can be a source for experts. Partners also help in recruiting more participants.

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**Possible Experts:** Brainstorm different types of helpful expertise.

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## COMMUNICATION

**Recruitment:** Considering the target number of participants, how can you reach and recruit helpers? If using iNaturalist app, create a Project Page on iNaturalist.org.

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You're on your way to having a BioBlitz event! See [www.natgeoed.org/bioblitz/](http://www.natgeoed.org/bioblitz/) for more resources and ideas for activities.

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BioBlitz is a program in conjunction with

**iNaturalist.org**

