

Alliance BioBlitz Handbook

Foreword

The National Geographic Society is committed to geographic literacy. An essential skill for 21st century citizens, geo-literacy consists of an understanding of Earth's interconnected human and environmental systems and the ability to apply that understanding for planning and problem-solving. The National Geographic Network of Alliances for Geographic Education serves as a catalyst for national education reform and is charged with increasing geographic competency through outreach and capacity-building activities across the United States, District of Columbia, Canada, and Puerto Rico.

In celebration of the National Park Service's 100th anniversary, the National Geographic Society has created a national initiative to support Alliances in carrying out BioBlitz events throughout the United States, Puerto Rico and Canada. The activities carried out through this national initiative will directly impact teaching and learning in an Alliance's state or other service area.

This BioBlitz Guide is intended to support the implementation of Alliance sponsored BioBlitz events and provide assistance to Alliance Coordinators and Alliance Teacher Leaders.

What is a BioBlitz?

Bio, as in biology, or the study of living organisms, and Blitz! Which means a sudden, energetic, and focused endeavor.

A BioBlitz is usually an event in which teams of volunteer scientists, families, students, educators, and other community members work together to find and identify as many species of plants, animals, microbes, fungi, and other organisms as possible in a specific geographic location. These activities not only highlight the biodiversity of an area, demonstrating the importance of exploration and conservation, but also generate quality data to be used by scientists and citizen scientists alike.

Why BioBlitz?

By presenting BioBlitz events, Alliances will help motivate children, families, educators, and other individuals to get outside and to explore their world. An Alliance's BioBlitz event(s) will take place in a National Park, state park, local park, schoolyard, etc. When possible, the events should occur in or near May 20-21, 2016. Alliances should plan the length, timing, and details of the event(s) that best align with their local needs, in the spirit of the BioBlitz materials provided.

Getting Started

Setting Goals and Outcomes

A BioBlitz can be organized in several ways to help meet the goals, stay within budget, and fit the needs and available resources.

The key is careful planning. A BioBlitz can be an effective way to introduce the public to a park or public space, help them feel connected to their local area, and for them to learn new skills. In return, organization can receive public support and lots of great data. But, most of all, everyone should have FUN!

A BioBlitz is most effective when its goals are clearly defined. The event might focus on identifying a particular target species or work toward a “grand total,” giving people a positive reason to be involved. Keep in mind that if a complete scientific inventory of all species is the goal, then a BioBlitz may not be the way to go. A BioBlitz is primarily a community event involving students, youth, families, and others who may not have much experiences with their local geography or environment.

Advice from a BioBlitz organizer:

Know your audience! If you have a large number of families attending, you could set up stations where they could do mini-activities and take home art and science projects. Be sure to encourage kids and parents to be curious and actively involved in exploring the area with the guidance and assistance of volunteers and scientists.

Identify desired outcomes

A BioBlitz event can have a variety of outcomes. The park management might want accurate, comprehensive, and current biodiversity data to help determine the health of the park’s ecosystems and known species. If the outcome is this specific, then organizing research-based inventories working with botanists, biologists, and other experts to accurately and correctly identify species is necessary.

However, Alliance sponsored BioBlitz events might also be described as a time to inspire young people to explore their local geography, become stewards of their community’s natural resources and lead conservation efforts.

BioBlitz events can be targeted to a variety of audiences. Some Alliances are targeting specific school sites and limiting participation by making their event invitation-only. Others might want open registration so any any school or family can participate. Partnering parks may want to

open the event to the public, allowing anyone to participate. Be sure to talk through with partners to figure out what audiences best meet your goals.

Whatever the goals are, it is important to work collaboratively with partners, volunteers, and scientists in forming them and carefully selecting activities to match these goals.

Sample Timeline

October-December: Contact partners (parks, organizations, school districts, scientists)
Schedule meeting to determine goals, location, dates and time
Complete event specific timeline and action plans
Schedule volunteer training
Schedule visit to event site

December-January: Continue planning meetings
Setup project in [iNaturalist](#) and registration site such as [Eventbrite](#)
Announce event via web and social media
Open registration, if appropriate

February-March Continue planning meetings
Continue outreach via social media
Continue recruitment of participants and volunteers
Conduct volunteer training (including iNaturalist)

April-May Finalize registration and volunteer recruitment
Send reminder emails to volunteers and participants
Document number of participants for NGS report

May-June Host BioBlitz!
Summarize inventories and species count
Send thank you and summary email to participants and volunteers

Planning

The [California Academy of Sciences](#) has conducted many BioBlitz events with the public over the past several years. They have some good recommendations for planning a BioBlitz, which have been adapted for Alliances below.

Pick a Location

It is always best to work with partners who want the data or information produced. This helps the BioBlitz event to be both engaging and purposeful. A big motivator for participants, volunteers, staff, and scientists is the desire to contribute to their community. The main output

of a BioBlitz is the beginnings of a species list that might be used to ask questions, conduct further research, or effectively communicate about local ecological conditions.

Find Partners and Volunteers

The goals can be used to identify potential partners or volunteers. The park selected might already have a volunteer or “friends” group that it works with on a regular basis. Other local groups with volunteers such as the Audubon, the Native Plants Society, Master Gardeners, Master Naturalists, state geography associations, and geography and science departments at local universities could also be good partners who have knowledge to identify species and lead groups. Schools, or organizations that do programming in schools, may be able to use this partnership as an opportunity to enhance their curriculum by incorporating themes that will be touched upon during the BioBlitz. Service organizations and local industries with volunteer programs can also be good contacts to make. Be sure to contact these groups early in the process so that they can assist in planning the event and training volunteers.

Set up a time to train volunteers. This could be done online or in person, depending on the organization of the event.

Setting a date and time

Alliances are encouraged to schedule their BioBlitz events during the month of May, 2016. The National event will be May 20-21, 2015. However, work with the park as well as other partners and school districts to determine the best date and time for the event. Consider when plants in the area flower or bud, what the local weather is during May, and bird migration patterns.

Determine how long the event will run. These events could be as short as 2 hours or as long as 24 hours. Again, setting clear goals can help determine the duration of the event. For longer events, plan to have volunteers working shifts (morning, afternoon, and evening, for example).

For any group of students or families participating in inventories, be sure to schedule a wrap up session. Following the inventory, the participants can report their observations and sync their photos to iNaturalist. That way, the BioBlitz holds true to its overall mission to gather data about the biodiversity of the park and participants can see how they have contributed.

Participant Registration

A clear and easy way for the schools, families, or the public to register is vital. It would be best to provide online registration. One example of an online registration website is [Eventbrite](#). Eventbrite allows the event organizers to include a liability and photo release to be included when registering.

Schools: If limiting registration to only schools, to reach out to local schools and districts as soon as possible. Inquire about the school calendar, standardized testing schedules, lunch schedules, and any limitations on participation. Working with schools takes time and patience because schools might have legal restrictions with regards to volunteers working with students,

fingerprint requirements or transportation limitations. Additionally, because some students receive lunch at school, the schedule may need to be arranged for students to return to school by lunch time or provide lunch for them.

Public: If registration is open to the public, determine the best date to open and close pre-registration and whether or not it is possible to allow drop-in participation. Some park visitors may not know about the event in advance but may be excited to participate if they happen to be in the park on the day of the BioBlitz. Accepting drop-in participants depends on the goals, organization, number of volunteers, and flexibility of the day's activities.

Recruit Volunteers

Determine the number of volunteers needed based on the target number of participants in the goals. It would be best to schedule volunteer trainings for the Team Leaders and Experts before the event and take the volunteers through a sample event using iNaturalist.

If it is not possible to schedule a training prior to the event, provide all volunteers with specific information about their roles and responsibilities. The Golden Gate National Recreation Area hosted the 2014 BioBlitz and shared their training materials. They developed three training documents for [Learning Liaisons](#), [Outdoor Educators](#), and [Scientists](#). In addition to these documents, they scheduled in person trainings during which volunteers practiced conducting surveys using iNaturalist to document species.

iNaturalist has a series of [tutorial videos](#) available and a series of [one page instructions](#) available for Alliances to use in training volunteers.

Team Leaders: Team Leaders model how to explore and search for species and how to use iNaturalist. Although they may not be scientists or experts, they can work in tandem with experts and scientists and provide additional support to groups working on inventories. They can help orient participants to the environment and keep track of time so that the group returns on schedule.

Experts: Experts should be able to identify specific species. Experts can be scientists, geographers, rangers, parks staff, naturalists, docents, master gardeners and birders, or biology and geography students. They may not necessarily have much experience leading groups, so can be partnered with a Team Leader.

General Volunteers: General volunteers include those who help to prepare for the event, write social media posts, facilitate meetings, set up the day before and the day of the event, greet buses, etc. It is important to make clear each volunteer's tasks and role and give them the appropriate amount of authority to complete their tasks. It may not be necessary to train these general volunteers before the event but they should arrive well before the participants to receive directions and an orientation of the site.

Organizing Groups

Participants can be grouped in a variety of ways. This organization depends on the number of participants, the number of volunteers, and the layout of the space.

By area: Designate portions of the park for each group to survey. Participants can look for and document everything they see within their designated region. This experience is all about exploration! It is important to show the participants HOW to look for different species. For example, volunteers can show students to look for insects under rocks and how to walk without damaging the habitat.

By taxa: Create groups based on what they will be focusing on documenting such as plant groups, bird groups, amphibians, insects, etc. Although this is a great way for participants to learn to identify specific species, it could be that this turns more into a nature walk lead by experts rather than an exploration of the environment and what species live there.

By activity: Train volunteers to conduct specific activities and then rotate groups of students and participants through these activities. The activities could include a variety of fun and engaging undertakings but should allow students and participants to explore the local area and interact with flora and fauna, volunteers and experts.

By distance: If volunteer experts cannot attend on the day of the event, they can help identify species on iNaturalist. The online, open-source platform of iNaturalist allows anyone to confirm or suggest identifications on observations made by others. This can help students and families to identify their observations after uploading them to iNaturalist.

Volunteer training

Before the event, provide some type of training for the volunteers, both experts and team leaders. Volunteers should be very clear about where to go, how much time they have, and what to do in case of emergency. Additionally, provide them with time in advance of the event to explore on their own and see what species they will most likely see on the day of the event. As a part of training, volunteers should create their own iNaturalist account before the event and practice using it so they can be of assistance to participants.

Inventory Schedule

Depending on the goals and audience, create a schedule to ensure that everyone is engaged and involved throughout the event.

Sample schedule (school groups):

- 10:00 Buses arrives with 60 students
Welcome, introduction, use restrooms
- 10:10 Move into groups of 6 students, 1 leader, 1 expert
Walk to assigned area

10:20 Identify species, take pictures in iNaturalist, complete inventory
11:10 Return to meeting area, wrap up and upload observations to iNaturalist, use restrooms
11:30 Bus departs
11:30 Lunch and reset activities
1:00-2:30 repeat the above schedule

Sample schedule (public groups)

9:00 First wave of groups leave to inventory (number of groups depend on number of registrations)
10:30 Return of first wave
11:00 Second wave of groups leave to inventory
12:30 Return of second wave
1:00 Third wave of groups leave to inventory
2:30 Return of third wave
3:00 Fourth wave of groups leave to inventory
4:30 Return of fourth wave

BioBlitz!

Be sure to have a list with all of the materials and resources required as well as what needs to be set up the day before and the morning of the event.

Day Before

- Gather all of the gear necessary for the BioBlitz inventories, stations, and wrap up session. Prepare signs to direct drivers to parking areas and participants to gathering areas.
- Organize folders with the names of pre-registered schools, students, families and other participants.
- Ensure that volunteers know where and when to report.
- Don't forget to think about things like first aid kits, restroom access, and water.

Event Day

- Make sure it is obvious to participants where they should be going to sign in and get started.
- Have lots of signs and think about assigning volunteers to direct people and answer their questions.
- It is best to start on time and limit opening remarks and introductions.
- Get participants out and start BioBlitzing!
- Have at least one volunteer stay in the greeting and registration area to direct any latecomers.
- As participants return from their inventories, be sure to have them upload their observations to iNaturalist, or turn in their inventory forms.

- ❑ Have a wrap up session scheduled to thank participants and partners for their contributions.
- ❑ It is a good idea to have a “scoreboard” to update the total species count, the number of different species, the most observed species and any other statistics that participants might be interested in.

After the Event

- ❑ A week or so after the BioBlitz, send out a follow up thank you email to participants and volunteers. Highlight some interesting things that were found and be sure to share the total number of observations and species.
- ❑ Remind participants to check back into their iNaturalist accounts to see if anyone has helped to identify their observations to check on the project page to be updated on the total species count.
- ❑ Schedule a debrief meeting or phone call with partners. Discuss the successes and issues with this event and determine any future potential collaborations around geography and biodiversity.

Appendix

Learning Framework

What is the National Geographic Learning Framework?

The Learning Framework is based on research and perspectives from diverse fields of knowledge. It recognizes the distinct core principles and focus areas established at National Geographic as well as the values held by families, communities, and cultures. Where appropriate, the Framework aligns with national standards and complements diverse curriculum approaches.

National Geographic kids are...

- Curious and adventurous
- Responsible for others and the natural world
- Empowered and persistent in the face of challenges

National Geographic kids can...

- Observe the world around them
- Communicate effectively through language and media
- Collaborate and work effectively with others
- Solve problems they encounter

National Geographic kids are explorers!

Attitudes

- **Curiosity.** An explorer remains **curious** about how the world works throughout his or her life. An explorer is **adventurous**, seeking out new and challenging experiences.
- **Responsibility.** An explorer has **concern for** the welfare of other people, cultural resources, and the natural world. An explorer is **respectful**, considers multiple perspectives, and honors others regardless of differences.
- **Empowerment.** An explorer **acts** on curiosity, respect, responsibility, and adventurousness and persists in the face of challenges.

Skills

- **Observation.** An explorer **notices** and documents the world around her or him and **is able to make sense** of those observations.
- **Communication.** An explorer is a **storyteller**, communicating experiences and ideas effectively through language and media. An explorer has **literacy** skills, interpreting and creating new understanding from spoken language, writing, and a wide variety of visual and audio media.
- **Collaboration.** An explorer **works effectively with others** to achieve goals.
- **Problem solving.** An explorer is able to generate, evaluate, and implement solutions to problems. An explorer is a capable **decision-maker**—able to identify alternatives and weigh trade-offs to make a well-reasoned decision.

Knowledge

In addition to the skills and attitudes of an explorer, people need to understand how our ever-changing and interconnected world works in order to function effectively and act responsibly. Critical knowledge required of explorers can be expressed through the four National Geographic key focus areas.

- **Our Human Story:** Exploring where we came from, how we live today, and where we may find ourselves tomorrow.
- **Our Living Planet:** Understanding the amazing, intricate, and interconnected systems of the changing planet we live on.
- **Critical Species:** Revealing, celebrating, and helping to protect the amazing and diverse creatures we share our world with.
- **New Frontiers:** Searching everyday for the “new” and the “next,” using the latest technology and science to go places no one has ever been and find answers no one has ever found.