

Bioblitz-in-a-box is a lasting legacy from the Bioblitz Canada 150 project that took place in 2017, made possible in part by the Government of Canada, as a Canada 150 Signature Project.

These tips and tools for organizing a bioblitz were compiled by the Canadian Wildlife Federation based on various online bioblitz guides, and professional and personal experiences. Feel free to browse around to find something to help with your own bioblitz plans!





Acknowledgments and Links

Numerous sources, personal communications and publicly available online resources helped guide the development of Bioblitz-in-a-Box. We need to give a special thank you to several particularly helpful resources, including:

Planning a Bioblitz - A Universal Guide developed by the Ontario Bioblitz Program.

Guide for Planning Community Bioblitz Events in Eastern Ontario produced by a partnership of the Community Stewardship Council of Lanark County, Watersheds Canada, the Ontario Ministry of Natural Resources and Forestry, the YMCA/YWCA Youth Eco Internship Program and the Otty Lake Association.

Guide to Running a Bioblitz developed by a partnership of Natural History Museum, Bristol Natural History Consortium, Stockholm Environment Institute York and the Marine Biological Association.



Table of Contents

Acknowledgments and Links 2

1 Bioblitz Basics 4

2 Engaging Scientists and Experts 6

2.1. | Contacting the Conservation Data Centres (CDCs) 7

2.2. | Engaging experts through iNaturalist.ca 7

2.3. | Roles of Scientists and Experts 8SAMPLE LETTER | 2.4. Elements of Letter of Invitation to Scientific Experts 9

3 Choosing a Site, real or virtual 10

3.1. | Property Accessibility 11

3.2. | Appeal and Diversity 11

- 3.3. | Extent and Boundaries 11
- 3.4. | What about Previous Surveys? 12
- 3.5. | Land use 12
- 3.6. | Facilities 12
- 3.7. | Food and Water for in-person Events 12

3.8. | First Aid, Safety and Emergency Planning for in-person Events 12

3.9. | Permissions and Restrictions 12

4 Attracting Sponsors: In-Kind and Otherwise 13

5 Bioblitz Data Collection 14

- 5.1. | iNaturalist Canada 15
- 5.2. | Other digital options 15
- 5.3. | Checklists, Pen and Paper 15

6 Volunteers, Vendors/Exhibitors, and Presenters 16

6.1. | Volunteer Roles 17SAMPLE LETTER | 6.2 Elements of a Letter to Seek Volunteers 18

6.3 | Inviting Vendors and Exhibitors 19 SAMPLE LETTER | 6.4. Elements of a Letter to

Invite Vendors/Exhibitors 20

7 Setting up for Your Bioblitz 21

7.1. | Participant Safety and Security 22

7.2. | Checklist of On-site Equipment, Supplies and Communications Tools 23

7.2. | Checklist of On-site Equipment, Supplies and Communications Tools 24

7.3. | Registrations 25

7.4. | Forms to Consider for In-Person Bioblitzes 25

8 Duration and Scheduling of Activities 26

8.1. | Length of the Bioblitz 26

8.2. | Scheduling of Activities 26

9 Participant Engagement: before, during and after your bioblitz 27

9.1. | Before Your Bioblitz 27

- 9.2. | During Your Bioblitz 28
 - 9.2.1. | Opening and Closing Ceremonies 28

9.2.2. | Encourage Participants to use iNaturalist Canada 28

9.2.3. | Instructions and Information for Participants 29

9.2.4. | Activity Ideas to Facilitate Public Participation 29

9.2.5. | Activities tailored toward specific interests or species: 30

9.2.6. | Hands-on: Collecting Specimens or Data for in-person events 30

9.2.7. | Hands on: Surveys by team for in-person event or single property virtual event 31

9.2.8. | Hands on: Identification of Collected Specimens 31

9.2.9. | Social Media 31

9.2.10. | Ideas and Lessons Learned from Past Bioblitzes 32

9.3. | After your Bioblitz 33

10 Acknowledgements 34



Bioblitz Basics

A bioblitz is a communal citizen-science effort to record as many species as possible within a designated location and time period.

Bioblitzes are great ways to engage the public to connect to their environment while generating useful data for science and conservation. They are also an excuse for naturalists, scientists, and curious members of the public to meet in person in the great outdoors and are a lot of fun! A bioblitz can fall within a spectrum of a highly scientist-driven study at one end, to a primary focus on public participation at the other. Most events should encompass nature interpretation, conservation education, guided hikes, workshops or complementary cultural activities so are somewhere in the middle of the spectrum. Participants can take photos of organisms and share them via an online platform, such as iNaturalist.ca,





Virtual Bioblitz:

Bioblitzes have traditionally been physical gatherings on a property where people mingle, inventory and identify species. An added layer has been to host virtual bioblitzes either in conjunction with or instead of these traditional events. A virtual bioblitz could be a country, province or city-wide engagement with a specific group of people who are your bioblitz "attendees". Or it could be a specific property (or collection of properties) that participants could visit at any point in time (ex. During a specific month) to make an observation that becomes part of the bioblitz tally. Engagement with experts could happen remotely through online identifications and/or online presentations to share knowledge of biodiversity.

Here are some general guidelines to consider when thinking about organizing a bioblitz:

- Ask yourself, is the goal conducive to a virtual bioblitz or is the plan for a traditional one, or perhaps a combination of the two.
- Choosing a proper site for a traditional bioblitz is critical.
- Aim for a survey of multiple taxa, to cover as many species groups as possible to get a more accurate idea of the biodiversity within a given area.

- Plan and communicate how observations will be recorded and shared, for example using an online platform/app like iNaturalist Canada.
- Plan for an event that gives enough time for a decent inventory. A half a day can work, but extending that to an entire day or multiple days will encourage greater participation and yield a more accurate depiction of the biodiversity.
- Engage species experts to participate in person, remotely and/or to provide guidance and advice.
- Create a project on iNaturalist.ca. This will help you log the species that were seen and engage with participants.
- Promote the event to your local community via tv, radio, print and/or social media.
- Secure all necessary licenses, permits and/or authorizations for participants' presence on the property and for any collection, handling or survey methods for species or special areas.
- Plan for what equipment and supplies will be required for the event, inventories and identifying species.





2 Engaging Scientists and Experts

Looking for scientists and other experts to join your bioblitz? Start with internet searches and discussions with local town/city halls, museums, nature clubs, or university and college environmental programs. The Conservation Data Centre in your province/territory may also help. Contact former bioblitz organizers to see if they can provide the names and contact information of their previous attending scientists and experts. Try to make contact before summer when many scientists are busy with similar studies. If the scientists are being paid and participating in the event as part of their job in academia or otherwise, the event needs to give them the opportunity to communicate their research to a wider audience and/or give them an opportunity to collect data. If you can help tick these boxes, there's a better chance of attracting these people.





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2.1. | Contacting the Conservation Data Centres (CDCs)

The CDCs will not only be able to contribute scientific expertise (e.g., species lists for that jurisdiction, summary of data recorded for the region in question), they will also know of potential partnering organizations. In addition, it is possible the CDCs could contribute in-kind resources such as staff and equipment.

If your event uses the iNaturalist.ca platform, the data collected during your bioblitz will be automatically flagged to all the CDCs, for them to transfer into their own databases.

Here's a <u>list of the Conservation Data Centres in</u> <u>Canada</u>, with the name and contact info of a person you can reach at each one.

2.2. | Engaging Experts Through iNaturalist.ca

Using iNaturalist.ca, you can browse through observations in your local area and see which observers are highly active in recording species already. These may be expert naturalists or very keen individuals. If you have an iNaturalist account, you can visit their profile page and send them a message through the site, inviting them to participate.



2.3. | Roles of Scientists and Experts

To give you an idea of the possible roles of scientists and experts (and to evaluate what your needs are for your bioblitz), here's a description from a large 2016 Ontario Bioblitz:

Ontario Bioblitz 2016

Role Descriptions

Taxon Inventory Coordinators/Scientist coleaders

Responsible for:

- Finding Taxon Coordinators
- Helping them to coordinate all their activities
- Securing resources on site, such as equipment
- Preparing species checklists in advance
- Site selection and ensuring site has appropriate access and is suitable for most taxa

Database Coordinator

Responsible for:

- Designing a data entry protocol
- Training data entry volunteers
- Overseeing data entry
- Liaising with Taxon Coordinators
- Liaising with Communications Coordinator for online upload of data
- Liaising with Image Coordinator
- Creating an iNaturalist.ca project and facilitating data upload from taxonomic specialists

Taxon Coordinators ("leads") – Specialists in a particular group of organisms

- Recruiting other professional scientists, students, and skilled amateur naturalists with expertise in that taxonomic group
- Agreeing on taxa that can be usefully targeted; if from away, with recommendations from knowledgeable locals
- Applying for any necessary permits
- Designing collecting protocols and prepare survey techniques
- Being responsible or assign responsibility for determination of all observed or collected specimens

and site records and sign off/verify identifications

- Passing all data on to a taxon data coordinator who will ensure entry and upload
- Verifying posted data after the bioblitz and submitting all additional data to database coordinator as identifications are completed

Taxonomic Specialist: Professional Biologist or Ecologist, or Recognized Amateur Expert Naturalist

- Serving as Survey crew team leaders
- Collecting specimens and site records
- Amassing data and submit to taxon coordinator
- Identifying specimens in field and in lab

Skilled Naturalists and Student specialists

(Must have basic knowledge of taxonomic group and basic field skills)

- Participating as members of survey teams
- Assisting with record keeping and specimen sorting
- Leading guided blitzes or doing taxon demonstrations

Skilled Interpreter or Nature Hike Leaders

(May be a taxon specialist or an experienced nature educator or a scientist) Responsible for:

- Conducting pre-blitz workshops, demonstrations, presentations, walks or other training
- Participating in guided inventory / learn to blitz program for novice naturalists

Database Volunteers

- People with special expertise in data entry and familiar with a particular taxon
- Assigned to a discipline/taxa to do data entry for that group
- Will be situated with taxon group at base camp
- Responsible to Taxon Coordinator and Database
 Coordinator



IMAGE

[Consider inserting an image – from a past bioblitz, from the proposed bioblitz location, species from the area – in the header, in the margin of the body of the letter....]

LOGO

[an event logo or your logo, if you have one]

[name of your bioblitz, the city or town and province if not otherwise obvious]

[site of blitz park/property, if different from the name]

[date - month/day/year]

[address of scientist]

Dear [scientist title and name],

In celebration of our local biodiversity and to benefit the conservation of our natural heritage, we are hosting a bioblitz to connect residents with nature, encourage them to learn more about wildlife in our area and see the value of participating in citizen science. To that end, we are inviting you to partake in the [name of bioblitz] to help us [purpose for holding your bioblitz].

Our [name of bioblitz] will run on [month/days/year] from [time - time].

[the site] provides a unique look at [describe what your chosen location has to offer and the habitats it encompasses e.g., are there marshes, forests, are there a diverse number of species, etc. Highlight why it would be valuable to have a person of their expertise at your event. A scientist can also offer their support remotely, such as reviewing iNaturalist submissions to identify species.]

[If you are inviting members of the general public to your event, ask if the scientist is interested also to give a workshop, lead a guided blitz or help to identify species photos or specimens captured by the volunteer blitzers. This can be an online event such as a webinar, Q&A or live video.]

[Show your appreciation to the scientists and experts you're inviting by offering them complimentary food and beverages throughout your bioblitz, and/or an honorarium, or whatever you have to offer.]

[Details on how to answer you or a designated team member.)

LOGO [add logos from partners, sponsors, etc.]

[add logos from partners, sponsors, etc.]

IOGO

LOGO

[add logos from partners, sponsors, etc.]

CANADIAN WILDLIFE FEDERATION BIOBLITZ | JODY ALLAIR

3 Choosing a Site: Real or Virtual

The idea of location is a bit confusing when thinking about a virtual event. It could be a country, province, or city-wide engagement where people report what they're seeing wherever they are within that boundary. Or it could be a specific property (or collection of properties) that participants could visit at any point in time to make an observation that becomes part of the bioblitz tally. Answering these questions will help you better understand the location you are looking for. They can help you establish the right location for your bioblitz, and the space needed to accommodate the number of people you will invite. Ask yourself:

What is the geographic scope of who you would like to engage? Are you looking to engage people located beyond an easy travelling distance? If yes, then maybe consider a virtual bioblitz or a combination of in-person and virtual. Are you wanting people to gather, mingle and inventory as a group? At a specific property on their own? At a site of their own choosing?

What do you want to sample and survey: Are you interested in surveying: terrestrial species? Aquatic areas and species? Under-surveyed taxa that are little known and/or difficult-to-find and identify? A special "star" habitat or taxon or species?

Do you primarily want to: get a species list? Collect specimens? Develop local citizen scientists' expertise? Excite the wider community about an impressive range of biodiversity? Create an experiential celebration of nature for the public?



3.1. | Property Accessibility

Think about how people are getting to the site. Is this by road? By water? On foot? All terrain vehicles?

Are individuals mainly coming and going on their own schedule? Or collectively timed access via shuttles? Is there public transit access?

A virtual bioblitz that encompasses a specific location will also have to consider these aspects. Although people will not be visiting the site all at once, there will need to be parking and access.

Vehicle parking conditions:

- How close is parking to the main bioblitz area?
- Is there enough parking for your intended participation?
- Do you need to arrange for additional parking somewhere else?
- Would you need shuttles?
- Is the parking area an existing lot (gravel/pavement) or will a grass area be delimited and prepared?
- Is parking spacing/rows indicated or would you need markers or people to direct?

Conditions of the site terrain:

- Is the terrain difficult to maneuver for equipment set-up? Within the area, are there paths or car-accessible roads?
- Is the terrain flat, rocky, steep, marshy, requiring special footwear for intended participants?
- Access for varying mobility levels? Into the site? Within it, different zones of accessibility?
- Is it just narrow hiking trails? Or are there wider spaces for gatherings of groups of different sizes?
- Is there watercraft launch access or docking or mooring?

3.2. | Appeal and Diversity

One question to consider when choosing your location is whether it will appeal to the scientists and volunteers you are hoping to invite. What are the habitats and species? Are they diverse or rare? Sometimes an area with a diverse range of species can garner interest, for there is always the possibility of something new or rare to be discovered. Research the fields of interest of those you're inviting, as well as the location's species before making your selection.

On the other hand, the messaging for the event might be to demonstrate that nature and species can be found in seemingly unlikely locations.

3.3. | Extent and Boundaries

Choose the amount of space you wish to survey based on the expected participation and the goals of your bioblitz. If inviting a small group of scientists to an inperson event, you might be interested in a smaller area rather than one with a lot of ground to cover, which is more suitable for large public groups. For a virtual event, think about the areas you would like participants to explore. Is this a specific place where everyone goes on their own time? Is this people's back yards? Local parks? An entire city? Or a combination of these. Keep in mind that the smaller the area, the easier it is to trample plants and other species. In larger areas however, it can be harder to keep track of everyone on the site.

Obvious on-site features can be natural boundaries, both to create a distinct identity for the event in the minds of the participants, and for the storyline/messaging in your outreach about the event. It also can be very practical to limit participants from going astray. Virtual event boundaries could be a specific site much like a traditional bioblitz, but it could also be a county, city limit, or left open to anywhere a participant wants to explore.

Be aware of where the property limits are and any adjacent private property to avoid. Be sure to clearly indicate this to participants.



REFLECTIONS OF NATURE PHOTO CONTEST | LARRY KIRTLEY





3.4. | What about Previous Surveys?

Earlier inventories and studies can help inform the choice of location and time of year.

The goals you have for your bioblitz will help you decide whether you want to avoid previously surveyed sites or revisit them.

If the goal is to investigate or showcase an undersurveyed area or to find species not previously known to the region, you would choose a location that hasn't been studied before. Another approach is to hold the event in an area adjacent to the location of a previous bioblitz to expand the survey over the years.

However, if the goal is to monitor changes over time or document the species at different times in the year, revisiting the same site can be valuable.

3.5. | Land use

If the land might be targeted for future development, you should consider the goals for holding your bioblitz. If the aim is to maintain a long-term project, then the changing land use will affect the inventory. If change is significant, imminent and certain, then it may be wise to avoid an area that will ultimately no longer house that biodiversity.

However, if the goal of the inventory is to help build a case for conservation of the area, or any discovered endangered or threatened species, then this may be a worthwhile site. This is also valuable if the goal is to carry out a before-andafter study to document impacts on biodiversity,

3.6. | Facilities

- Are there restrooms? Indoors or outdoors? Who is in charge of cleaning the facilities and supplying toilet paper, soap and paper towels/dryers? Do you need to rent portable toilets?
- Are there electrical outlets and internet access? Are these working? Is there a Wi-Fi password?

- Is the site wheelchair and stroller accessible?
- Is anyone camping on the site? Are there already campsites? Are campfires allowed? Do you need to get a campfire permit?
- Are there buildings on or close to the site you will be using? Who will open/close them? What will be their designated purpose? Will they be open to the public? To the volunteers only? To the scientists and expert?
- Does the venue require a proof of liability insurance?

3.7. | Food and Water for in-person Events

- Are there eating areas already? Do you need to designate extra picnic areas? Do you need extra signage?
- Are there food restrictions (ex. allergies, intolerances, vegetarians) that need to be taken into account?
- Is drinking water easily accessible? Do you need to supply bottled water?
- Are there sufficient garbage, compost and recycling bins?

3.8. | First Aid, Safety and Emergency Planning for in-person Events

- See also "Participant Safety" section
- Are there First Aid services on site already? Do you need to create a First Aid station/tent? Do you have certified volunteers or staff to operate it?
- Is there security already on site? Do you need to hire security officers?
- Are you responsible for the emergency plan? Is it mandatory according to any contract you signed?
- Do you need extra signage related to First Aid, Safety and Emergencies?
- How fast can emergency services get to your site? How far is the nearest hospital?

3.9. | Permissions and Restrictions

Is your site a public or private space? Whom do you need to ask permission to access it? Do you need to allow time to apply for permits for access and/or for collecting specimens? Is there a maximum number of visitors it can hold?





Attracting Sponsors: In-Kind and Otherwise

Consider local environmental groups focused on the conservation of Canada's biodiversity. Local organizations may not be able to provide a lot of funding, but they could offer contacts, materials, resources, and assistance with the surveying area, and hopefully add their own information table to your event. Look into not-forprofit environment-based organizations, environmental ministries, national and provincial parks, University and College environmental programs, high school environmental clubs, museums, conservation centres and or local habitat and watershed associations for assistance.

Consider inviting citizen-watch program representatives, local or from headquarters, to display or offer programming or even conduct a survey. Consider enterprises that offer services you will be using – your event might make a colourful, locally convincing or "extreme use" testimonial to how well the product or service works! Consider: technical or naturalist instruments; data and telecommunications equipment, services, connectivity; on-line or other media services or outreach channels; transportation, accommodation; a.v. equipment; logistical or event supplies.

Consider enterprises serving complementary interest groups: outdoor sporting equipment or services, physical, mental and spiritual health and personal development; community- and team-building businesses.





5 Bioblitz Data Collection

You will want to determine how you are going to collect and share the data that is recorded during your event well in advance. Using an online digital platform is the most efficient and engaging way to encourage participants to take part in the species inventory. It is essentially the only way to carry out a virtual bioblitz. This avoids the need for data entry after the fact and allows for a species tally to take place in real time. But not everyone has gone digital so it's good to have a backup plan.



5.1. | iNaturalist Canada

iNaturalist Canada combines one of the world's most popular nature apps with a bilingual interface and helps users instantly identify plants and animals. It connects people with a community of over a million scientists and naturalists who can help learn more about nature. By recording and sharing observations, research quality data is created for scientists working to better understand and protect nature.

Participants can snap a photo using the iNaturalist app or upload a digital photo to iNaturalist.ca and it automatically becomes part of the species tally. Anyone who can use a smartphone or digital camera can contribute and they don't need to be experts to do so.

iNaturalist lends itself well to carrying out a virtual or an in-person bioblitz, engaging with participants and allows setting up an online bioblitz project.

As an organizer, there are specific ways to set up a project on iNaturalist.ca and engage with participants.

For more information on what iNaturalist Canada is all about visit <u>https://inaturalist.ca/pages/about-inaturalist-canada-en</u>

For information on how to use iNaturalist Canada and the iNaturalist app, visit: inaturalist.ca/help

5.2. | Other Digital Options

A digital spreadsheet (like Microsoft Excel or an Access database) may sound less daunting to some than an online platform to build a species list. This option requires one or often several data entry people and is less easily shared with the general public. The risk is that the information sits on one computer or with one organization or that the data gets lost over time, but if the intent is not to make the information public then this an option. An Excel spreadsheet, if formatted properly, can be uploaded to iNaturalist after the fact, so information can be shared this way, but will lack photos to verify the observations, which is a critical function of iNaturalist.



5.3. | Checklists, Pen and Paper

With the risk of low camera/phone batteries, limited access to a power source and potentially unreliable internet coverage, pen and paper is always good to fall back on. And there are some people who prefer recording their observations in notebooks. A major drawback for using pen and paper, of course, is that photos aren't submitted to vouch for the observation and the list is not easily shared with the general public. It is still good to have some species tally sheets on hand to offer people.

iNaturalist has the ability to create checklists for specific places. These checklists are automatically generated based on past observations in that place, so are not always complete, especially for small places. The best option is to use the checklist for a larger place (such as the province or township) which will likely have most, if not all of the species participants would observe. Any iNaturalist user can add to a checklist if it needs to be updated and more comprehensive.

You can find places and their checklists by using the search box at **iNaturalist.ca/places**. Once you have found your place, the "view checklist" link can be found on the left-hand side, just below the list of species groups. The checklists can be viewed online or downloaded as an excel sheet and provided to participants.

Some organizations and initiatives maintain checklists or databases that can be used at the local level so you can also ask around or start with a Google search to find a reputable source.

And for blank sheets participants can fill out themselves, here are a few examples:

Bioblitz Canada blank data sheet [.xlsx] Sensitive Species Report Card [.doc]



Volunteer

GETTY IMAGES



Volunteers, Vendors, **Exhibitors, and Presenters**

You can contact local organizations to find volunteers for on-site events, to setup kiosks and vending booths, and to help promote your bioblitz. For a virtual bioblitz as well as remote presentations for an onsite event, you can reach farther afield and bring in people through video. And, of course, any of these organizations can participate in the bioblitz itself!

- Schools
- Scouts/Guides
- Other youth organizations
- Colleges/Universities
- Aboriginal community organizations

- Nature Clubs
- Community centres •
- Artistic community organizations
- New Canadian and Immigrant Associations •
- Cultural ethnic community organizations
- Hunting/Fishing organizations
- Sports organizations
- Photography clubs
- Farming community
- Cottage associations •
- Office workers, private and public sector



6.1. | Volunteer Roles

Some recommendations on how you can involve other organizations in your bioblitz:

- Invite them to participate in the bioblitz
- Possible roles for in-person participation:
 - » Staffing/working at the basecamp or stations
 - » Managing the data as it comes in
 - Science lead proper labeling, working at the ID station, helping identify species on iNaturalist.ca
 - » Leaders and coordinators for activities for children and adults
 - » Assistants and guides for nature walks or field work
 - » Videographers/photographers
 - » IT and audio-visual support
 - iNaturalist support assisting participants in downloading and using the app and website

- Possible roles for volunteers to participate remotely
 - » Assistance with advertising, promotion and invitations
 - » Planning a project, activity or data quest
 - Communications lead, spokesperson for your bioblitz
 - iNaturalist lead project creation, assistance in reviewing observations that have been uploaded
 - » iNaturalist species identification can take place from anywhere
 - Delivering workshops/talks remotely these could also be pre-recorded or pre-existing webinars



AMIS DU PARC DE LA GATINEAU / FRIENDS OF GATINEAU PARK; GETTY IMAGES; CANADIAN WILDLIFE FEDERATION BIOBLITZ | OLIVIA GRAY; CANADIAN WILDLIFE FEDERATION BIOBLITZ, HAMILTON

Back to TOC



IMAGE

[Consider inserting an image – from a past bioblitz, from the proposed bioblitz location, species from the area – in the header, in the margin of the body of the letter....]

LOGO

[an event logo or your logo, if you have one]

[name of your bioblitz, the city or town and province if not otherwise obvious]

[site of blitz park/property, if different from the name]

[date - month/day/year]

[address of group]

Dear [group title and name],

[or] Calling All Those Who Love Nature...

Are you interested in helping with [your city]'s event to connect residents with nature and contribute to conservation science? Do you enjoy spending time outdoors, and learning about Canada's wild species?

From/On [dates .] we will be holding a [24-hour, etc.] bioblitz at [location] to celebrate our local biodiversity and to benefit the conservation of our natural heritage. We would like to invite you to come and lend a hand for this event.

The bioblitz will bring together nature experts and community members to team up for a special citizen science survey of all the living species in the [location] area, and enjoy a gathering of educational and fun activities.

[Location] provides a unique look at [appeal to their possible love of nature, telling them what your location has to offer in: diversity, the habitats it encompasses, etc.].

We need your help to make the **[name of your bioblitz]** happen. Please check out the kinds of roles involved below to see if there are any that appeal to your interests and skills.

[List the jobs that you need assistance with - e.g.

- Basecamp tent sign-in/sign-out personnel
- Staffing a station at basecamp
- Supervising activity stations/leading an activity
- Assisting in the field/Assisting on nature walks
- Leading a field survey

To show our appreciation for your support, we'd be glad to offer **[onsite accommodations, meals, beverages, etc., if necessary and if affordable]**.

We'd welcome having you play a part in the [name of bioblitz].

[Name of contact and contact information]

6.3 | Inviting Vendors and Exhibitors

If your bioblitz is an in-person event, you may want to invite individuals or organizations to display or sell their products and services. They can also lead an activity!

Assess the space needed and a high traffic-location that would suit vendors and exhibitors.

Consider what equipment and supplies they might need (tent, tables, power cables, connectivity, etc.). Then, either plan how you might provide it, or anticipate their questions by alerting them that they would need to plan to be self-sufficient. You might scout out in advance some possible resources for equipment and supplies.





CANADIAN WILDLIFE FEDERATION BIOBLITZ | ANDREW KIZELL; CANADIAN WILDLIFE FEDERATION BIOBLITZ | A. BÉLAIR; CANADIAN WILDLIFE FEDERATION BIOBLITZ, CAMBRIDGE



Model of Participation Form

Model Letter:

LOGO

[an event logo or your logo, if you have one]

[name of your bioblitz, the city or town and province if not otherwise obvious]

[site of blitz park/property, if different from the name]

[date - month/day/year]

[address of business / foundation / organization]

Dear [title and name],

IMAGE

[Consider inserting an image – from a past bioblitz, from the proposed bioblitz location, species from the area – in the header, in the margin of the body of the letter....]

On *[date]*, we will be holding a bioblitz to *[reason for holding the bioblitz]* to celebrate our local biodiversity and to benefit the conservation of our natural heritage

We are expecting to bring together [#] from [region/neighbourhood] [highlight types of participants e.g. "of all ages" "including fat bike cyclists" "with a strong involvement in local fishing conservation" "teens from 6 local CEGEPS"]. They'll team up with nature experts to conduct a special survey of all living species in [location] and enjoy a gathering of educational and fun activities.

The [name of bioblitz] will last for [two days, a 24-hour span, a day of activities] starting at [time e.g. 8 a.m. on September 4] and ending at [time e.g. 8 a.m. September 5].

[Location name] offers a unique look at [what does the location offer - species or habitat diversity].

We would like to invite your organization to join our bioblitz, to help promote the event and to make our participating guests and community members aware of your [services/program(s)].

We will be pleased to provide you with [whatever you're offering: e.g. "space for a booth or kiosk" "place in the schedule or activities or presentations"].

To show our appreciation for your support, you will receive [complimentary meals/beverages/snacks, onsite accommodations if required for overnight stay, or anything that you can afford to offer].

We look forward to hearing from you.

Sincerely,

[Name of contact person]

[Contact information]

[Attachment: details on the logistical details (e.g. size, space, timing, facilities, amenities such as power or connectivity, map, draft event schedule) and of any costs and option levels.]





Setting up for Your Bioblitz

Assess your needs based on the expected attendance and what is already available at the site. Refer to the "<u>Choosing a Site</u>" section to review what is already available at the site and what you will need to account for. You may need to rent some equipment or services. Make sure these expenses are included in your budget and that you reserve in advance.



7.1. | Participant Safety and Security

In addition to the safety aspects in the "<u>Choosing a Site</u>" section, there are measures to consider for the safety of participants.

- Are there species that may pose a threat to participants that they should be made aware of? Let them know what precautions to take when dealing with wild animals (ex. bears), dangerous plants (such as Poison Ivy, Giant Hogweed, Wild Parsnip), and harmful insects (ex. ticks).
- Are there dangerous areas within the site that participants should be made aware of (ex. cliffs, steep slopes, rapids)?
- Do you need to do a background checks on volunteers, especially if they will be working with children?
- Do you need participants to sign in and out? Do you need to take down license plate numbers? (The license plate numbers may help you identify a missing person if a car is left in the parking lot at the end of the day, for example.)

Template Sign-in/Sign-out Sheet [.docx]

Template Sign-in/Sign-out Sheet with License Plate Numbers [.docx]





You must determine the on-site equipment needed for your bioblitz, and decide what you must borrow or rent. This depends on what is on the site already, on the scale of your event, if there will be kiosks and shows, if there is electricity and running water, and on other factors specific to your event.

You can adapt the list below to your needs and use it as a check-list: [PDF]

	Adequate light (table top lamps for work surfaces, ambient lighting in a low tent, etc.)	
	Microscopes and hand lenses/magnifiers	
	Digital camera	
	Laptop/tablet	
	Field guides/species I.D. books	
	Plastic pots/trays/sample jars for specimens	
	Tongs, mounting pins, dissecting tools for plants and insects	
	Labels to I.D. specimens	
	I.D. keys	
	Fold up chairs and tables	
	Garbage, recycling and composting receptacles	
	Power bars/cables, extension cords, USB cables (for digital cameras), etc.	
	Mobile internet	
	Maps of the property	
	Event schedules	
	Instructions	
	Safety warnings/signs or lists of toxic plants	
	Species list [downloadable PDF]	
	Tally sheets, blank data recoding sheets	
	Clipboards, pens/pencils/markers	
	Traps, nets, butterfly nets, dip nets, moth lures	
	First aid kit, access to a phone for emergencies, information to the nearest hospital	
	Miscellaneous: tape, paper/notepads, spare tarps, flashlights, rope, knife, binoculars	
	her:	
	Boats – if required and chosen as a way to survey freshwater and marine habitats	
	Life vests.	

- Gasoline and plan for replacement/back-up supplies
- Hip waders for use in wetlands





7.3. | Registrations

You may want to arrange for pre-registration for both virtual and in-person events. This limits who can actually find their way to a vulnerable or private site, gives an idea of strength of response beforehand, allows managing participation for limited capacity activities/webinars.

Or you may prefer to leave it more as a drop-in event without the need to pre-register. For an in-person event you may need to have on-site registration station(s) set up to handle liability or image or permission-to-follow-up authorization, provide orientation to the site and schedule, or allow for registration into different slots for activities and presentations. For a virtual bioblitz, you will need to encourage participants to join your iNaturalist project so that you can engage with them throughout the event; and if carrying out online presentations, ensure your platform can handle an unlimited number of participants.

Most bioblitzes and online events are free of charge. However, organizers can sometimes charge a fee for certain extra or parallel activities, such as pre-event training workshops, special boat access or tours.

Eventbrite, Zoom and other online platforms offer free registrations for events.

7.4. | Forms to Consider for In-Person Bioblitzes

- Registration Form
- Sign-in/sign-out sheet
- Waiver
- Image Release Agreement: Photos & Video
- Copyright Release for Photographic Products
- Feedback Form





Duration and Scheduling of Activities

8.1. | Length of the Bioblitz

- Working with a concentrated amount of time can be more difficult to facilitate public participation than if you're working with a 24-hour period of time. When working with a concentrated amount of time, it can be easier to have activities that engage people through walking through nature or forms of art that are not time consuming.
- When a bioblitz is scheduled for 24 hours or longer, a species count is an activity that will easily get others involved and will allow for observations at different times that would otherwise be missed in a daytime event (such as early morning birds and nocturnal animals).

8.2. | Scheduling of Activities

The scientists/expert, volunteers and participants will want to know the schedule of the event.

Provide clear information on what is going on and how to participate.

A combination of scheduled and drop-in activities for the public is recommended.

Your team of scientists and experts will be able to provide their preferred times for surveying, delivering webinars and interacting with the public.

Example of past bioblitz schedules of activities:

From large in-person bioblitzes in **Stanley Park**, Vancouver or at the Credit River Watershed, Ontario in 2016

From an entirely virtual bioblitz carried delivered by Wintergreen Studios in partnership with the Canadian Wildlife Federation (and others), in South Frontenac Ontario.



CANADIAN WILDLIFE FEDERATION BIOBLITZ, CAMBRIDGE

9 Participant Engagement: Before, During and After Your Bioblitz

9.1. | Before Your Bioblitz

Promoting your event is critical and can be through brochures, posters, social media, email lists, word of mouth and partner organizations.

You can host training webinars ahead of time to get participants excited as well as teach them how to contribute.

Provide information on iNaturalist and how to use it for your bioblitz, including directions to joining your project. Ensure people have downloaded the iNaturalist app and created an account ahead of time.

iNaturalist training resources such as how-to videos, downloadable steps to using iNaturalist and information brochures can be found at in the <u>Help section</u>. Send out an information package letting people know how they can participate. Is this drop-in or scheduled activities for in-person events? Provide information on how people can register or participate in online workshops/webinars.

Example information package developed for a virtual bioblitz carried out by <u>Wintergreen Studios</u>, in partnership with the Canadian Wildlife Federation and others.

For virtual events, consider mailing a token (ex. button, hat, lanyard, shirt) to volunteers and experts who are offering their time. This shows appreciation and identifies them as playing an important role in the event.



9.2. | During Your Bioblitz

9.2.1. | Opening and Closing Ceremonies

Hold a welcome/start-up meeting or virtual presentation with participants to review details and goals for the bioblitz

- Review what to be careful for (hazards, harmful species, getting lost, etc.) and what to do in these situations
- Introduce the iNaturalist project (if using iNaturalist) and show participants where to find it on their own either through the iNaturalist app or at iNaturalist.ca.
- Encourage people to use the iNaturalist app or iNaturalist.ca to report observations and check in throughout the day to see the live tally.
- Have as much as you can on hand to loan out to participants (with a sign-out system) or inform participants what to bring them when they go out on their own:
 - » Field guides Apps,book suggestions, PDF or hard copies.
 - » Cell phone along with the iNaturalist app installed
 - » Digital camera, with charged batteries and enough/extra memory space
 - » Bug spray, gloves, sunscreen, water
 - » Branded water bottle (promo material)
 - » Supply a t-shirt or accessory to volunteers and experts to help participants identify them and benefit the most from those involved in the blitz. Small items could be mailed to virtual participants ahead of time



CANADIAN WILDLIFE FEDERATION BIOBLITZ | TIANNA BURKE

Wrap-up the even by speaking with participants

- Thank everyone for their participation, including event sponsors, volunteers and organizers
- Reveal the species tally using the iNaturalist project (if using iNaturalist) which summarizes results by top contributors, species groups and most observed species.
- Highlight noteworthy finds.
- Award prizes (if any).

9.2.2. | Encourage Participants to use iNaturalist Canada

iNaturalist.ca or the free iNaturalist app allows anyone who can take a photo to actively contribute to your bioblitz, whether they know what the species is or not and whether it is a virtual or in-person event. Encouraging participants to join your iNaturalist project allows you to communicate with participants through project journal posts that could highlight interesting finds, direct participants to an under surveyed area and hold a friendly competition.

Using iNaturalist:

- Allows any level of expertise to contribute from novice to species experts.
- Offers instant species suggestions for people who don't know what a paticular species is.
- Allows for the identification to be confirmed by participants whether onsite or not at iNaturalist.ca during the bioblitz or afterwards.
- Provides feedback to the participant on what they saw, and greatly increases the species tally for the bioblitz (seeing as the scientists cannot get to every area on the property)

For the guided blitz, get people using the iNaturalist app. The scientist can explain the basics on what to look for (ex. Turnover logs to look for salamanders, then replace) and have the public take photos of their findings. Regroup to go through and identify the species in the photos. Then get them to use iNaturalist. You could have a photo contest derived from the photos submitted for the species counts.





9.2.3. | Instructions and Information for Participants

- Holding a series of workshops or webinars can educate participants about the ecology of the site as well as the species they may encounter and how to find, identify and record them. Have a look at example Schedule of Activities in the **Event Planning section**.
- Give participants basic introductions, tell them how to use binoculars or specific pieces of equipment E.g. the activity is looking at plants: participants gather around a plant in the field or shown through a video feed while an expert or leader explains how to use the ID key, ID techniques, instructions, additional information.
- Teach them in the field, hands-on, education about the ID skills and other field surveying skills for future use on their own time.
- Offer a hybrid setting field work and stations set up displays (additional tables) focused on butterflies, insects (live species, photos, etc.), have someone available to answer questions and help them decide which groups they would like to focus on.
- Offer sit down sessions to discuss topics, species, etc. providing them with the needed information to make an informed decision of which groups they want to partake in. For example, a butterfly or plant display/presentation might intrigue a person when they see what they might find if they are part of that group during the survey period.
- Have a combination of materials (equipment binoculars, ID keys, microscopes, etc.), things that can be handled, things to look at (photos, videos, poster displays, etc.), tutorials, and workshops on what to look for, demystifying how it works, what they can see, how it can be broken down, and the features they can look for – this can be done through documents online before or during the event to help understand ways to identify species/ parts of species.

Hold an iNaturalist specific workshop or webinar at the beginning of the event to encourage people to contribute. Outline the basic steps of how to use the app and website and point to or provide participants with resources/guides that they can refer to. Have iNaturalist support available throughout the event. For in person events, this can be a station where people can get help with uploading observations. If available, allow participants to access wifi to avoid data use charges and a computer for those who are using a digital camera. For a virtual boiblitz, designate a person that participants can contact for support.

9.2.4. | Activity Ideas to Facilitate Public Participation

- Hold Contests:
 - » Art contests
 - » Photography, videotaping, writing a short story, sketching a specific species, etc.
 - Most observations, most species, most correct identifications (or a random draw to level the field)
- Scavenger hunts (on specific species or taxa)
- Invite participants to become species experts focusing on a specific species/taxon during the blitz
- Invite participants to create a short video on a species they discover, sending it to blitz coordinators at the end of the activity, day or event:
 - » Encourages them to look for a select species in their survey area
 - » Allows them to see species in their natural habitat and at their natural daily activities.
- Invite participants to live the life of a scientist to help them truly get involved in the process:
 - Encourage them to take exact measurements of something specific, gathering specific information, etc.

AMIS DU PARC DE LA GATINEAU / FRIENDS OF GATINEAU PARK ; CANADIAN WILDLIFE FEDERATION BIOBLITZ, HAMILTON; AMIS DU PARC DE LA GATINEAU / FRIENDS OF GATINEAU PARK





9.2.5. | Activities Tailored Toward Specific Interests or Species:

Think about organizing activities by species-type based on interests and skills of the public and groups you may want to involve – e.g. children might be more interested in insects or amphibians than mosses or plants.

- Ask on-line beforehand or upon arrival to gauge participant interest levels or even arrange for participants to sign-up beforehand or on-site upon arrival.
- Consider having advanced ID workshops led by the species experts or advanced naturalists for the group leaders, either ahead of the event or early in the event.
- Have an introductory identification workshop led by advanced naturalists on what to look for, followed by an outing.
- Activities can be tailored to different interest groups:
 - » A cycling safari/trip for a cycling group
 - » A badge receiving activity for scouts/guide groups
 - » Art interpretation of Canada's landscape for artists or art enthusiasts
 - » Heart healthy walks for work out groups/heart institute or heart health associations, etc.
- If the bioblitz is working with a school (kids/students) you might want to consider tailoring the activities to their curriculum to benefit their education as well as their interest in what you're surveying.



CANADIAN WILDLIFE FEDERATION BIOBLITZ, CALGARY



9.2.6. | Hands-on: Collecting Specimens or Data for in-person events

People like to be a part of the practical aspects of collecting specimens or data from the field. Public participation appears to be greater in the practical (hands-on rather than theory and ideas) for they tend not to know much about the taxon. People like to collect specimens and see them (ID them with the aids, check them out under a microscope, etc.) This technique can make them feel as though they know as much as anyone else there, while educating themselves about the nature surrounding them. Specific walks and field workshops can help with locating the best spots for looking for specific species, making it easier to check them out.

Be sure to indicate what is and is not allowed to be collected. It may not be advisable for participants to dig up plants at the site, but a single tree leaf might be alright.

- When collecting specimens (insects or mushrooms, for example):
 - » Show proper collecting and labelling techniques
 - » Provide nets, sample jars or collection bags
 - » Have the group collect the specimen and bring back the scientist to ID. Could also encourage the participants to do this later on throughout the blitz and bring back to the species ID area.
- Assign roles to people as assistants:
 - » Data logger (using iNaturalist)
 - » Photographer
 - » Trap checker
- For some species, a sweep of the area is needed (like searching for snakes in a field) so instruct people on what to look for then line people up and walk the field.
- Build up people's skills and expertise leading up to the bioblitz by holding workshops or webinars ahead of time to teach ID skills and survey techniques





9.2.7. | Hands on: Surveys by Team for In-person Event or Single Property Virtual Event

- The experts or advanced naturalists cannot cover every square inch of the property, but teams can scout sectors of the terrain and periodically report back
- For a virtual event that is targeting a specific property, sectors can be divided and provided to team members to cover on their own
- Experts can head a group of five to10 newbies/ scouters and provide an intro ID session or can show/ describe what to look out for.
- Each team might have a tally-taker as anchor and a 'porter' who can carry a pack of reference material.
- For a more systematic survey, the team can be assigned a route or stops to survey (e.g. beyond earshot or sightlines; out for 15 minutes and then come back to that start point, etc).
- Teams could be provided a list or images of expected species to match against and count.
- Each member can record their observations through iNaturalist or take a photo to provide to the leader (or someone else designated to collect the data) who can add it to the bioblitz.
- The team can convene in person, virtually or by revieing observations on iNaturalist.ca to compare and discuss findings. The lead can follow-up on anything unusual, and assist in ID or head to the location to verify the observation.

9.2.8. | Hands on: Identification of Collected Specimens

- Areas of a big tent, rooms, or sections of a lawn can be set up to triage specimens to kingdom or even order: Even newbies can lay out specimens at this level, under some supervision
- First triage: Save more knowledgeable naturalists by putting newbies to work. Even those with fairly basic knowledge can be stationed as first level sorters.
- Children can get involved through sorting e.g. vial holding anything with six legs goes here, gazillion legs there, no legs there...
- Insects can be roughly sorted by order (bee-looking things, grasshopper-looking things, etc.) Consider having some larger monitors or screens so that many people can watch as observation photos are loaded and are triaged into categories for the next level to sort. Having experts mic'd as they walk through their ID will ensure everyone can hear. Consider having people out in the field create live video feeds.

9.2.9. | Social Media

Use technology and social media to facilitate public participation and interaction: Facebook, Twitter, Instagram and iNaturalist.





9.2.10. | Ideas and Lessons Learned from Past Bioblitzes

- Opening Ceremony smudging ceremony led by a First Nations elder.
 - » Split the public into groups with experts groups were named after plants sacred to the local First Nations community
- Hold workshops ahead of or during the bioblitz to educate participants, such as:
 - » How to use iNaturalist
 - » Intro to species ID
 - » What, where and how to look for species
 - » Local conservation work/initiatives
- Have a pre-bioblitz school day. Partnering directly with local schools can help promote the event to their students and families. The school could start a day in advance as an exclusive opportunity for their participation.
- A mix of both scheduled and drop-in activities are good
- Participants can head out with scientists in small groups while there are activities in tandem or before/after at "basecamp" where scientists can be available for questions, people can freely examine specimens, and nature education games and events for the participants can be run.
- Have activities scaled for different levels of "investment" of time and interest, such as:
 - » full-day, "hard-core" trip with scientists interest from the more advanced participants
 - Two-hour excursions a good fit for enthusiastic citizen scientists who wanted a fun outing with professional scientists
 - Shorter timeframe and distance for families with young children or people with more limited mobility

- For surveys of the same taxon consider splitting into groups, covering different areas of the field
- Guided walks can be divided by species group or ecosystem-type
- Participants can be sent on missions to locate different species, artifacts (shells, leaves, feathers, nuts, etc.) to bring back to basecamp for identification
- Consider inviting local diving clubs and marine societies. Snorkeling in wetlands or scuba diving for coastal bioblitzes can collect underwater information and/or bring photos, videos or specimens back to show participants.
- Opportunities for brief activities to capture the interest of those just passing by can be useful, for those who aren't interested in going out on an excursion. This could include simple activities at basecamp such as
 - » A transect of an insect survey,
 - » Specimens for public viewing,
 - » Live animal displays by local rehab centre or zoo
 - » Dedicated scientists to speak about their work
 - » Themed arts and crafts,
 - Microscopes with specimens to offer a glimpse into the microscopic world
 - » A tank of species examples from pond dipping,
 - » Nest box building,
 - » Face painting,
 - » Wildlife related stands/stalls
- Offering a "passport" to help guide participants around the various basecamp stations and to give them sample questions (suggestions) to guide their discussion with scientists



GETTY IMAGES; CWF REFLECTIONS OF NATURE PHOTO CONTEST / SUSAN WOODLAND; CWF REFLECTIONS OF NATURE PHOTO CONTEST / GLORIA PAWLIUK



- Can Create discovery zones (combined with passports) with activities according to their theme and offer stamps for completion, such as
 - » Bug zone with pond dipping and hedgerow surveys
 - » Woodland zone with leaf litter sorting and leaf ID
 - Grassland zone sweep netting, bird watching, plant transect or grid
 - » Wetland zone shoreline sampling, minnow traps, turtle surveys
 - » Intertidal zone checking tide pools, collecting shells
- Nature trail scavenger hunt with spotter sheets
- After dark activities (that can be surveyed at night or the following day)
 - » Bat tracking bat detectors, guided walks
 - » Light trapping for moths
 - » Listening and recording birdsong at dusk and dawn, or have a dawn chorus walk
- Engage children in activities with incentives goody bags, stickers, badges, etc.
- Offer handouts to explain iNaturalist and provide ideas for self-guided scavenger hunts for those who do not want to go out on one of the scheduled events.
- See if local businesses might want to provide food for the volunteers – bringing awareness to the event, and possibly garnering more participation through word-of-mouth advertising.
- Work with a local graphic designer to create a logo to catch attention for the event.
- Create an online store or onsite stall with merchandise from the event – t-shirts with the event's logo on it, pins, magnets, etc.

9.3. | After your Bioblitz

You should broadcast the great successes of your event to the public, participants, volunteers and sponsors.

If you have a website or blog for your event you could update it with highlights from the bioblitz.

If you have used iNaturalist.ca for your event, then you can update the project description (if you wish) and it will have the species tally as well as a breakdown of most observed species, top observers and top identifiers.

Social media posts can link to your blog or website and iNaturalist project and highlight any interesting finds.

A thank you, in the form of an email, iNaturalist messenger or mailed letter can go a long way to show gratitude and further engage participants. This could include:

- A thank you to participants, volunteers and sponsors
- Highlight the species tally and any interesting finds
- Highlight participation and/or acknowledge key participants
- Link to a website for more information as well as the iNaturalist project page
- A request for feedback, such as a survey to fill out
- A mention of any future bioblitz or other event (save the date)
- An indication of how to continue to interact with your organization and connect with nature

CANADIAN WILDLIFE FEDERATION BIOBLITZ | OLIVIA GRAY





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