AUSTRALIAN GUIDE TO RUNNING A

BIO BLITZ

FOR CITIZENS SCIENCE PRACTICIONERS

Acknowledgement of Country

We acknowledge the Traditional Custodians of the many lands and waters across Australia on which BioBlitzes take place. We pay our respects to ancestors and First Nations Elders past and present, and honour the enduring strength, wisdom and resilience of First Nations communities.

We recognise that Aboriginal and Torres Strait Islander peoples have cared for and learned from Country for tens of thousands of years. We acknowledge their rich contributions to society and science. Citizen science provides the opportunity to listen, learn and partner respectfully with Traditional Custodians, whose knowledge and connection to Country hold vital insights for conservation, ecological research and collective care for the environment.

 COVER IMAGES: Bottom right:- Young Bioblitzer in Victoria. Top left: - Crested Tern *(Thalasseus Begii)*

Foreword

Australia is one of the most biologically diverse countries on Earth, with many native species found nowhere else. This includes over 600,000 species of all taxa, many of which are yet to be described. Australia's biodiversity is central to our cultural identity, ecological health and economic wellbeing.

This unique biodiversity is under significant and growing pressure. The need to understand and connect with our natural environments has never been more urgent. One of the major barriers to effective conservation is the sheer scale and complexity of Australia's biodiversity and landscapes. Many species remain under-described, ecological data is patchy or outdated, and rapid environmental change is outpacing traditional monitoring efforts.

Citizen science is increasingly recognised as a vital part of the solution. By involving volunteers in data collection and analysis, citizen science expands the reach of science in ways that would be impossible through conventional research alone.

BioBlitzes offer a unique and energising way to bring together scientists, naturalists, land managers, community groups and individuals. These events foster discovery, learning, and collaboration, while strengthening people's connection to place. They can catalyse lifelong interest in nature and science.

A well-run BioBlitz doesn't just catalogue species—it builds communities, informs decision-making, and inspires action. Repeat BioBlitzes can help track changes in species composition over time, providing valuable data for conservation and land management.

This guide is for anyone interested in planning and delivering a successful BioBlitz—whether you are part of a community organisation, school, government agency, or simply a group of nature enthusiasts. It provides practical steps, tools, and insights drawn from experience, helping you design an event that is scientifically valuable, inclusive, and fun.

By connecting people with place and purpose, these events demonstrate that everyone has a role to play in caring for our natural world.

I hope this guide equips and encourages you to run a BioBlitz that is as meaningful as it is memorable.

Dr Annie Lane

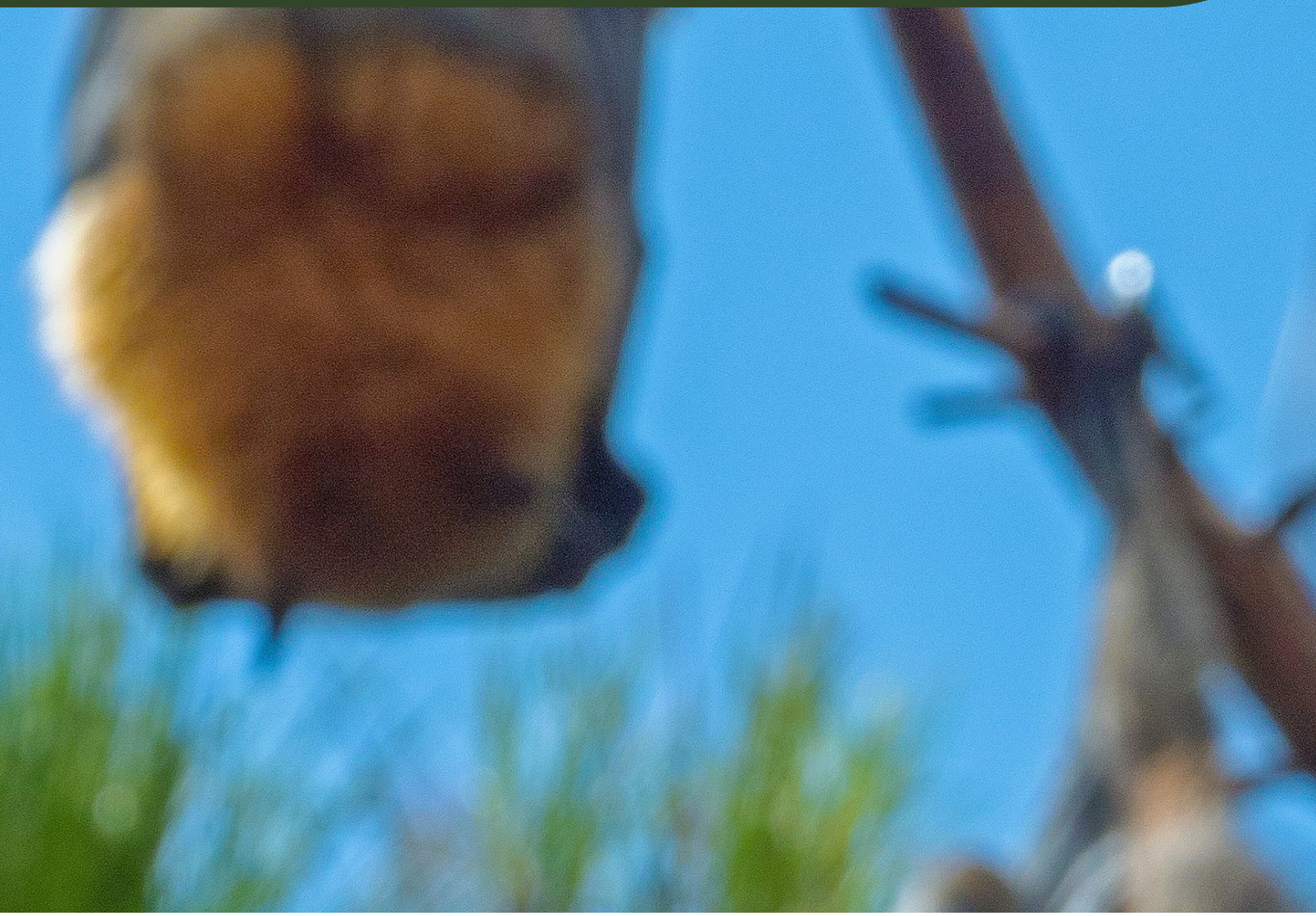
Chair, Australian Citizen Science Association

Acknowledgements

This 2025 guide, BioBlitz Guide: For citizen science practitioners, builds upon and updates the original Australian BioBlitz Guide, incorporating new content, updated resources, and emerging practices to better support BioBlitz organisers in Australia. This guide was developed by the team at Ferox australis in collaboration with the Australian Citizen Science Association. This project was supported by a grant from the South Australian Government's Citizen Science Fund.

We gratefully acknowledge the authors of the original Australian BioBlitz Guide – Libby Hepburn (leader of the Australian BioBlitz Guidelines working group), Patrick Tegart, Stephanie von Gavel, Philip Roetman, Sam Niedra, Erin Roger, Suzanne Miller, Theresa Fyffe, Peter Brenton, Christine Lambkin, Angelika Erpic, and Holly Webber – whose foundational work informed and inspired this updated version. The original guide is still available on the Australian Citizen Science Association website.

Photos in the guide have been provided by Peter Crowcroft, Seamus Doherty, and Michelle Neil unless otherwise credited.



We Would like to thank the following organisations for their support in the production of the original and updated version of the guide.

Australian Citizen Science Association

Government of South Australia
Department for Environment and Water

FEROX AUSTRALIS

PICTURED: Grey-headed Flying-fox *(Pteropus poliocephalus)*, Victoria, by René Riegal.

iNaturalist AUSTRALIA

GREAT SOUTHERN BIOBLITZ

atlas of life

ATLAS OF LIVING AUSTRALIA
sharing biodiversity knowledge

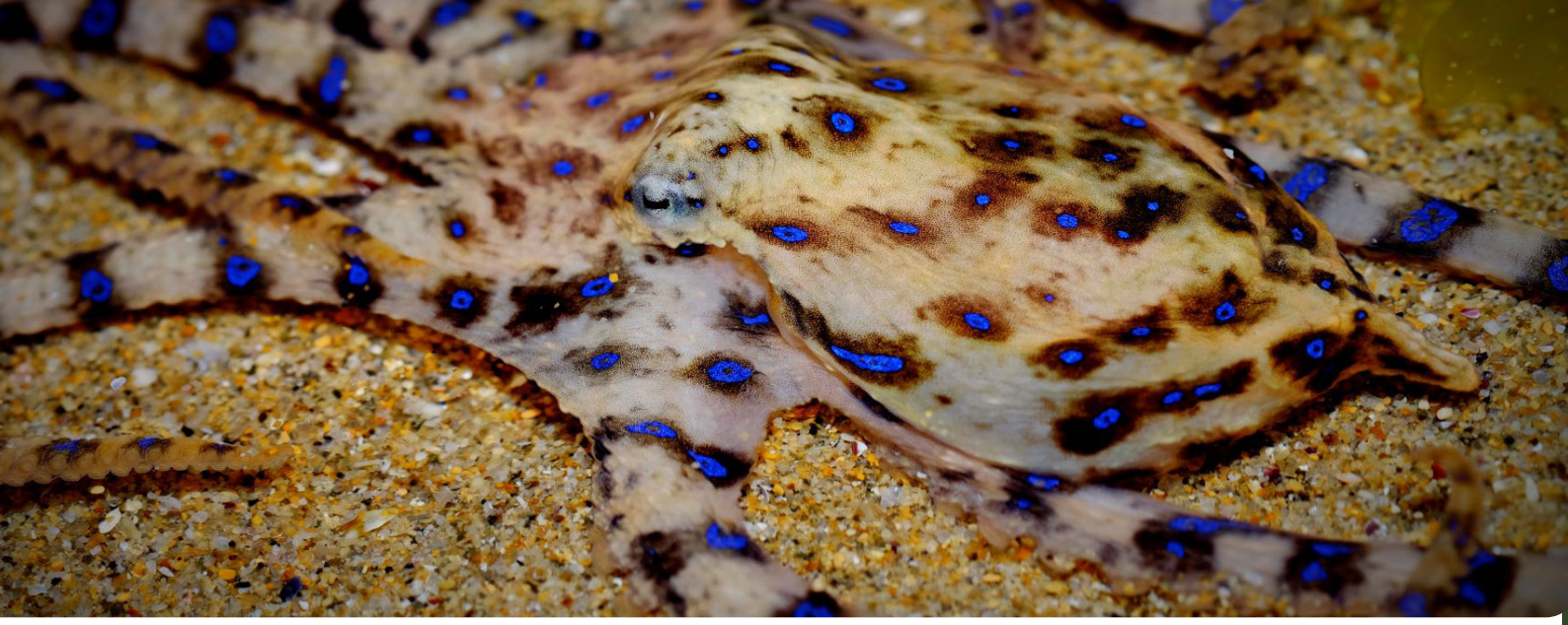
Great Barrier Reef Foundation

NSW GOVERNMENT Office of Environment & Heritage

QUEENSLAND MUSEUM

An Australian Government Initiative

Inspiring AUSTRALIA



ABOVE: Southern Blue-ringed Octopus *(Hapalochlaena maculosa),* Vic. RIGHT: Glasswing butterfly *(Acraea andromacha)* with an excited student at the Ted Giblin Bioblitz, Port Macquarie, NSW.

About this Guide

BioBlitz events are fun and engaging, delivering meaningful outcomes for individuals and organisations. Still, they can be complex and multifaceted events. This 2025 Guide has been designed to support those who wish to run BioBlitz events and provide guidance on new digital tools that may help streamline the process. While the examples given focus on the experiences of Australian BioBlitz organisers, most of the content applies globally.

In the past decade, development of digital technology has created tools that facilitate BioBlitz events. Whether that is by acting as an accessible collection point for records, assisting to identify the biodiversity seen, or to connect people over great distances. Most BioBlitz events have elements of both, fitting somewhere between being wholly online, or completely in person.

This Guide will help you plan and manage successful BioBlitz events, be that coordinated online or in-person, with dozens to thousands of participants. We encourage you to use and adapt any aspects of the Guide that are relevant to your circumstances and limitations.

BIO BLITZ

The Guide is a living document that will be continually developed and improved over time as practitioners gain experience, understanding, and share their learning.

Contents

"If children grow up not knowing about nature and appreciating it, they will not understand it, and if they don't understand it, they won't protect it, and if they don't protect it, who will?"

— Sir David Attenborough

PICTURED: Varied Dusky Blue *(Erina hyacinthina ssp. hyacinthina)* in Anglesea, Victoria.

Glossary

Basecamp

The logistical and social hub of an in-person BioBlitz event, which is typically a centralised structure such as a pavilion, tent, public hall, school, or museum space, where most of the event's coordination and species identification happens.

Baseline data

The first set of biodiversity observations collected for an area, used as a reference to detect changes in species presence, abundance, or distribution over time.

BioBlitz

The act of taking as many observations of biodiversity in a given place over a given time.

Biological record

The biological records taken during the BioBlitz - these typically include a photograph or sound recording for identification, the location where the record was taken, and the time the record was taken. If using an online database to store records, these will need to be uploaded

Citizen science

The accessibility of science to everyone, not only those who are trained in science. Other terms include participatory science & community science.

Database

A digital platform used to store, manage, and often share biological records and other data collected during BioBlitz events.

iNaturalist & super user

A database for biological records and social media for naturalists. A super user is someone who uses this website frequently and has thousands of observations and/or identifications.

In-person BioBlitz

A BioBlitz primarily coordinated or facilitated in-person. This type of BioBlitz is traditionally how most events have been coordinated in the past.

Naturalist

Person who observes and studies nature

Online BioBlitz

A BioBlitz primarily coordinated or facilitated remotely online. Typically today all BioBlitzes have both in-person and online elements but may be primarily one or the other.

Participants

The people who attend in-person, or contribute online to the event you have organised. These can be members of the public, citizen scientists, experts in their field, local naturalists, school students.

Species richness

A measure of how many different species are present in an area. Often used to assess the biodiversity value of a site.

Survey

The process of taking observations of biodiversity - this can be solo or in a group during an event.

Taxa

A taxonomic group of any rank, such as a species, family, or class.

Taxonomist

A type of scientist who specialises in the classification of organisms and the discovery of new species.

What is a BioBlitz?

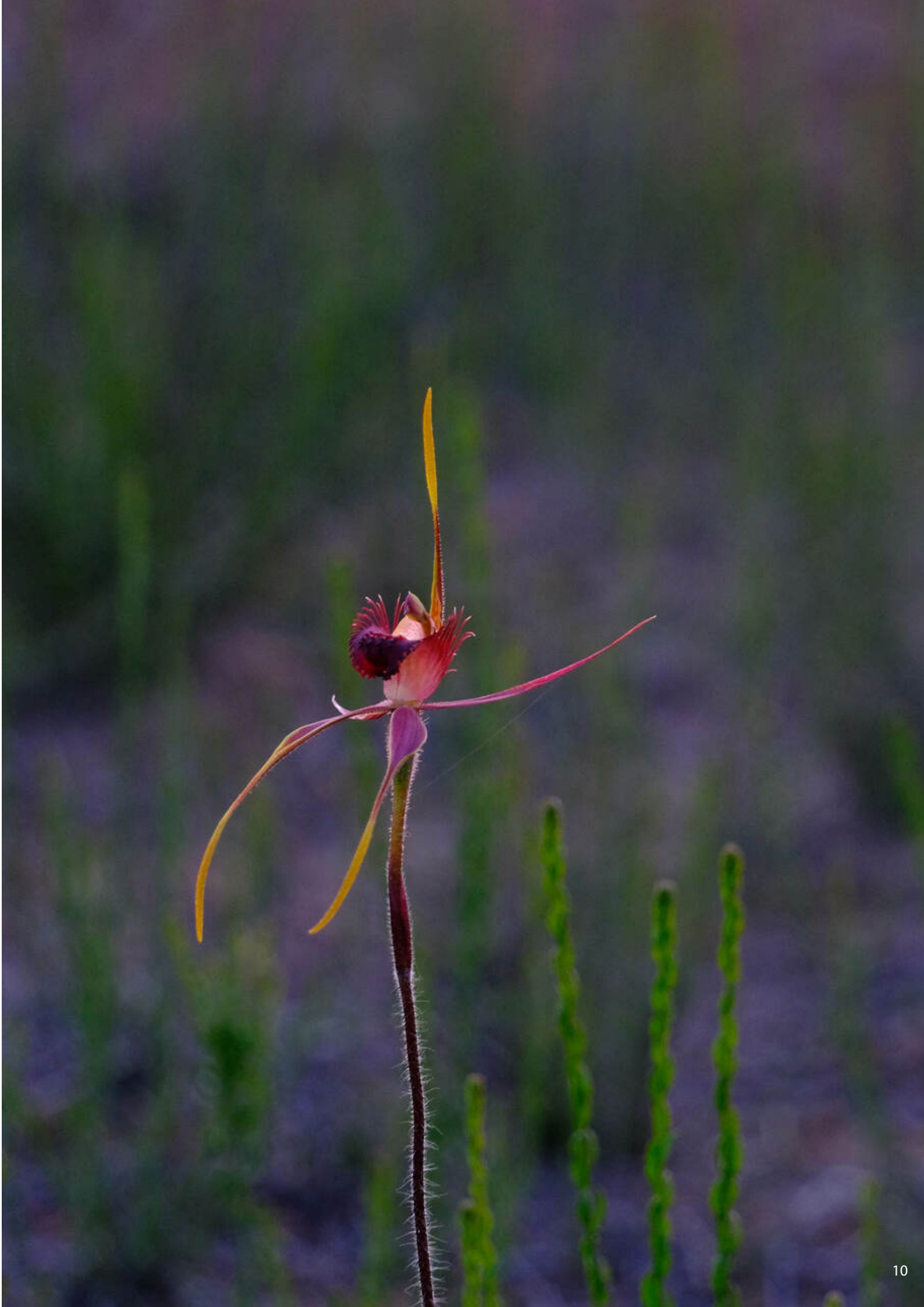
A BioBlitz is a citizen science event where members of the public engage in and contribute to scientific research by observing and documenting biodiversity at a certain location within a specific time span. These events provide an opportunity for communities to work together to generate valuable biodiversity data at various scales.

A successful citizen science event is all about collaboration, organisation, and a diversity of skills. You may need scientists, survey leaders, event managers, community leaders, participating organisations, volunteers, science communicators, and, above all, the public. In this guide citizen scientists are usually referred to as naturalists. A naturalist is someone who actively observes, explores, and forms a deep, personal connection with the natural world – whether through formal study, everyday curiosity, or lived experience in diverse environments. Naturalists are defined not by expertise or setting, but by their attentiveness to nature and commitment to understanding and caring for it.

A BioBlitz celebrates nature, science and the community. By recording observations of as many species as possible in a given area for a set amount of time, a BioBlitz offers the chance to develop an appreciation for how much biodiversity surrounds us. For an example of an in-person event that uses digital technologies, see our case study of the Cooloolah Bioblitz (Pg 18).

BioBlitzes are time and location dependent, with participants attending the nominated place in person. There are a growing number of global BioBlitz projects, such as the City Nature Challenge (CNC) and the Great Southern BioBlitz (GSB - Pg 28). Events covering entire regions or countries are coordinated online, with participation through locally organised events, as part of independent community groups, with friends and family, or even alone. Research is key to running a successful BioBlitz: you will gain much from following examples and other information provided in this guide, actively searching the internet for examples of BioBlitz events, and speaking to people who are experienced organisers.

PICTURED: Esperence King Spider Orchid (*Caladenia decora*)



BIO = LIFE
BLITZ = TO DO
SOMETHING QUICKLY AND INTENSIVELY

ABOVE: Family taking pictures during City Nature Challenge RIGHT: Austral Grasstree *(Xanthorrhoea australis)*, Vic.

A 'BIOBLITZ' IS A CONCERTED EFFORT TO DISCOVER AND RECORD AS MANY LIVING THINGS AS POSSIBLE WITHIN A SET LOCATION OVER A LIMITED TIME PERIOD (USUALLY 24 TO 36 HOURS).

Why run a BioBlitz?

If planned carefully, BioBlitzes are a fun and effective way to increase scientific understanding of biodiversity in a given area while engaging the public in hands-on scientific activity through species recording.

A BioBlitz can provide critical ecological data by undertaking surveys that help fill gaps in scientific knowledge. Such events can; foster new social networks or strengthen existing ones through shared interests, initiate projects or partnerships, disseminate key information to a wide audience, and highlight, explore, and raise awareness of the diversity of life in a specific area or region


APEKS
AQUA LUNG

IDENTIFYING INTENDED OUTCOMES

It helps to begin your planning by identifying the outcomes you and your partners aim to achieve, and then design your event accordingly. Prioritise reflection and evaluation to assess the extent to which the desired scientific outcomes are realised. The long-term legacies of your BioBlitz should align with the expectations of individuals, the broader community, and involved organisations, while also delivering positive scientific and environmental impacts.

The concept and design of BioBlitz events is very flexible. Events can vary in size from small local gatherings aimed at supporting community and Landcare initiatives or schools, to large-scale events that extend across nations.

INDIVIDUAL PARTICIPANT OUTCOMES

BioBlitz events offer individuals an opportunity to contribute directly to biodiversity research and conservation in their local area. For many, this hands-on involvement fosters a deeper connection to nature and an increased awareness of biodiversity, scientific methods, and the importance of conservation efforts.

Participants often report strengthened attitudes towards the protection of biodiversity, alongside practical benefits such as improved skills in species identification and biological recording. By engaging with local habitats, individuals gain a richer understanding of ecological systems and the wildlife they support.

Beyond scientific outcomes, BioBlitz participation can also enhance personal wellbeing. Time spent outdoors and the social nature of these events contribute to improved mental health, a sense of achievement, and stronger social connections through shared environmental engagement.

COMMUNITY OUTCOMES

BioBlitz events engage local communities in familiar settings, breaking down barriers to nature and science while fostering support for local conservation efforts. They can unite diverse groups, strengthening social cohesion and empowering active, community-led initiatives for enhancing environmental stewardship.

SCIENTISTS & EXPERTS

These events enable the contribution of critical species observations to biodiversity databases, directly supporting scientists with research and conservation efforts.

A BioBlitz also offers a platform to refine science communication skills by engaging with enthusiastic public participants, translating complex findings into meaningful insights.

Additionally, BioBlitz events foster valuable networking opportunities, connecting scientists and naturalists with peers and other participants for future collaborations, all while advancing local ecological knowledge.

ORGANISATIONAL OUTCOMES

BioBlitz events can raise the profile of participating organisations by generating support to meet their aims, either directly through membership recruitment or indirectly through networking. They may also generate financial support and help to secure future funding by supporting applications.

BioBlitz events can also create a platform for collaboration and build a network of interested and engaged individuals and organisations who may be interested in your next BioBlitz project or research opportunity.

SCIENTIFIC, POLICY AND ENVIRONMENTAL OUTCOMES

The primary scientific goal of a BioBlitz event is to generate biodiversity data. While BioBlitz events are not exhaustive biological surveys, well-planned ones are able to produce or update species list that could assist to discover new species or species new to the area, rediscover rare or elusive species, and update species distribution records.

With the data they gather, a single BioBlitz can generate biological species records that can be used to further scientific research, inform conservation practices and policies, and support planning and land management at various scales.

LEFT: Conducting reef health surveys, Qld. Photo: Reef Check Australia

ABOVE: Conservation Volunteers Australia participant using iNaturalist app for BioBlitz event

Planning a BioBlitz?

To be successful, a BioBlitz must be planned with a dedicated team and have a range of well-organised activities, requiring careful consideration from conception to completion:

BEFORE

Plan your event, including location(s), time frame, team, resources, approvals, promotion, and how you will collect data

DURING

Execute your plan, monitor the progress of the event, and manage contingencies

AFTER

Complete identification work, evaluate, report, and celebrate your BioBlitz with your team and community

LEGACY

Think about the value and use of your records and evaluations, as well as the benefits, skills, and networks created.

Planning phases of a BioBlitz

While participants always attend in person, the majority of BioBlitz events today have some online components. Wholly coordinating a BioBlitz online can allow it to span different regions, time zones, and languages. The following is a brief overview outlining the primary requirements of successfully organising any BioBlitz with up to a few thousand participants.

BELOW LEFT: BioBlitz event in St. Kilda, SA. Credit: Ferox Australis. BELOW RIGHT: World Parks Congress Information, World Parks Congress BioBlitz.

PRELIMINARY PLANNING

- Define objectives (scientific and social) and measures of success
- Scope out the event with interested parties
- Decide event location(s) and scale (e.g. local, state, national, or specific reserves)
- Select appropriate time and date(s), considering seasons and public holidays
- Determine how data will be managed (e.g. a digital platform like iNaturalist)
- Consider you team: capacity and roles
- Consider funding and insurance.

6 MONTHS PRIOR

- Approach friend groups, active naturalist societies, universities, naturalists, scientists, and/or other volunteers for both participation and help to organise
- Plan activities and create an agenda
- Design Basecamp operations
- Arrange facilities, permissions, and equipment
- Evaluate possible risks and mitigation strategies
- Create event pages on social media platforms and design attractive graphics for promotion
- Create a dedicated website and use an event registration platform for events.

WEEKS BEFORE

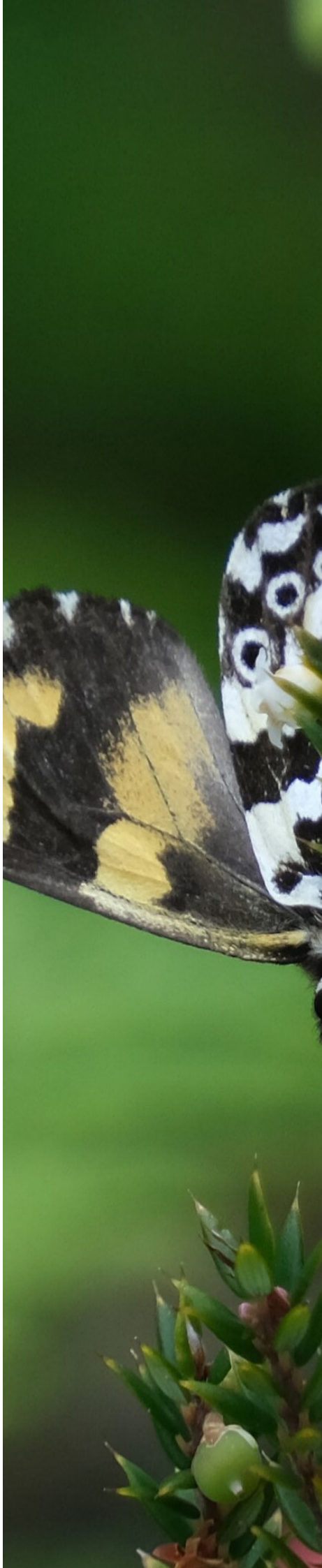
- Confirm arrangements and inform local authorities
- Share resources on how to use the chosen platform with registered participants
- Provide tips for capturing high-quality photographs
- Schedule regular posts on social media (e.g. countdown posts to build excitement).

IMMEDIATELY BEFORE & DURING EVENT

- Set up Basecamp, check any further risks, and brief teams
- Ensure participants register their attendance and provide an emergency contact number, permission for photos of themselves to be shared, children are supervised and any medical or accessibility issues declared
- Celebrate participant achievements and interesting finds,
- Post updates and highlights on social media and
- Monitor and address issues promptly.

AFTER EVENT

- Thank participants in person, via email, and/or on social media
- Clean up site and debrief your team
- Collate results independently or together with participants
- Prepare final reports
- Share findings and successes with participants, partner organisations and funders



In-person BioBlitz case study

Cooloola BioBlitz

On Queensland's Fraser Coast, on Kabi Kabi Country, the Cooloola BioBlitz is gaining a reputation as a well-organised, exciting, and fulfilling event for participants. For families wanting to engage kids in nature, students, naturalists, or professional taxonomists hoping to collect and discover new species, the opportunity is there. These successes are achieved through sustained community effort and organisational champions.

ABOVE: Randy (L) & Lindy (R) Orwin

The major driving force behind the BioBlitz is Lindy and Randy Orwin, and the event is organised by the Cooloola Coastcare Association and the conservation volunteer group FIDO (Fraser Island Defenders Organisation). The local surf club provides and sets up marquees for the STEAM (Science, Technology, Engineering, Arts, Maths) twilight market stall. Community members help to set up the Rainbow Beach Community Hall BioBlitz Hub. Knowledgeable scientists and naturalists continue to participate in the annual event.

Cooloola's aims

- To generate and extend biodiversity data for Northern Cooloola
- To educate participants and the wider community about the area's living natural resources
- To build citizen science capacity through mentoring and training, so that ongoing monitoring in the region can be undertaken.

Why Cooloola?

- Home to many endangered and threatened species
- Very high biodiversity values due to diverse geology and ecosystems
- Significant RAMSAR wetlands and migratory bird flightways
- Potential for citizen science projects to support the world heritage listing.

Availability of facilities, access to the park, a committed volunteer base, and refined logistics have been established after multiple events.

The Cooloola BioBlitz is a medium-sized, in-person event that utilises the iNaturalist platform to collate biodiversity data as part of a project. Between 100–200 participants take part from Friday-Sunday. Events and guided tours are conducted from a base camp located at the community hall. A science twilight market is held on Saturday evenings, where leaders and scientists offer activities at their stalls for the public to engage with.

LEFT: *Tasmanian xenica Nesoxenica leprea,* Cradle Mountain, Tas

Each day, participants are encouraged to take photographic observations of biodiversity and upload them to the iNaturalist platform where they are collated. It provides users with a ready-made website to view, explore, share, and export the collected data themselves. This makes the iNaturalist platform the most accessible digital recording option for a BioBlitz. The user-friendly platform also enables the Atlas of Living Australia to access the data.

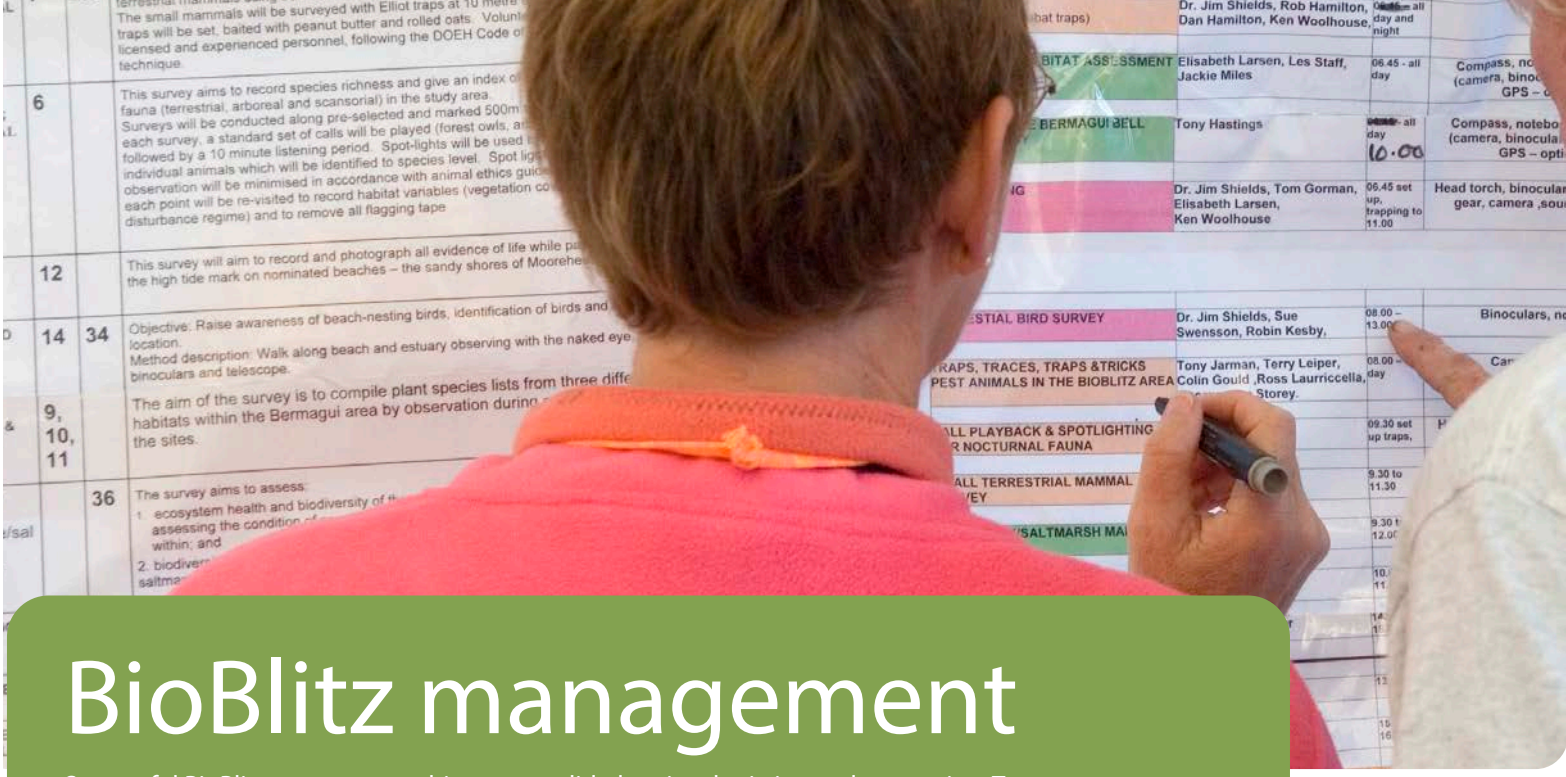
Greg Tasney, one of Australia's most prolific iNaturalist super-users and knowledgeable naturalists. He looks forward to the event each year.

"The level of coordination and enthusiasm from the group I lead was great. I love coming and exploring the biodiversity of this amazing region, and sharing it with the participants along the way."

Dr.Robert Raven, an arachnologist and spider taxonomist, who came away impressed with the skills of the First Nations participants in the group he was leading.

"The kids from the Kabi community were fantastic to have along on our survey. I was so impressed with what they were finding, so much more than we expected given the time of year. Many of the spiders they found will be new to science. Their singular ability to see movements and patterns in the landscape was amazing."

BELOW TOP: Tasmanian Peacock Spider (*Maratus tasmanicus*) in coastal Victoria. BOTTOM LEFT: Participants at Cooloola Bioblitz. BOTTOM MIDDLE: Lace Monitor (*Varanus varius*), Cooloola, Qld. BOTTOM RIGHT: Snipe Fly (*Pelecorhynchus albolineatus)* TAS



ABOVE: Big Bushfire BioBlitz - Basecamp

BioBlitz management

Successful BioBlitz management hinges on solid planning, logistics, and promotion. To ensure a smooth, safe event, create a clear event management plan. This section of the Guide addresses critical steps: Where, When, How, What, and What's Next.

Where to run a BioBlitz

The location or locations you choose for your BioBlitz will influence the level of participation, the wildlife encountered, and the overall effectiveness of your event.

National and public parks, local reserves, and accessible private properties continue to be popular venues for in-person coordinated BioBlitz events. Even urban settings can yield valuable data and offer high public engagement. For online coordinated BioBlitz events, participants may select their own sites within a designated area. Guidance on selecting suitable survey areas and obtaining access permissions should be included in your event planning and communications. This planning may also involve liaising with rangers in relation to permits, accommodation and site security to conduct a BioBlitz in national parks. For more information, see our Permissions and Licences section.

For any BioBlitz format, consider the following when selecting or advising on locations:

- Safety
- Relevance to your goals
- Access to and at location
- Possible distribution or impact on wildlife
- Cultural or conservation values of the area
- Availability of suitable drone airspace, landing areas, permits and licensed pilots (if relevant)
- Presence of infrastructure for in-person events (e.g., Basecamp, toilets, shade, catering space, digital connectivity for data uploads or live communication)

For an online BioBlitz, ensure that all relevant safety and access information is clearly available online or through your communications. As with all aspects of a BioBlitz, flexibility is key. Whether centralised or distributed, the location choices should align with your event's capacity, aims, and community.

When to run a BioBlitz

The timing and duration of a BioBlitz are pivotal in enabling and encouraging participation from a diverse array of target groups, as well as achieving productive survey results.

As a start, think about if there are any constraints on when your BioBlitz can be scheduled, such as:

- Popular events and public holidays (to be avoided or perhaps linked in with)
- The availability of your target demographic(s)
- Typically, a BioBlitz lasts 24 to 36 hours, with many events taking place during the weekends. Including a Monday or Friday option in a BioBlitz weekend accommodates for diverse work schedules.

BioBlitz events often start early to capture dawn activity, especially for birdwatchers and other specialists. For the official opening, consider a late morning start as it will accommodate most attendees.

Note sunrise and sunset times for dawn and nocturnal surveys, and for coastal events, align activities with low tide schedules.

While you can find wildlife all year round, times of year other than Winter are preferred by participants because of more favourable weather and more charismatic species appearances.

In areas where fire could be a risk, you should consider avoiding the fire season to ensure safety of everyone involved. Extreme hot weather is also not favoured by participants or most plants and animals.

For online events, holding your event over multiple days is recommended. It can also be helpful for larger online events to standardise start times across time zones.

LEFT: Flinders University, BioBlitz event at Bedford Park campus, SA. BELOW: Ringtail Possums (*Pseudocheirus peregrinus*) balance on the line.

Your BioBlitz team

An inclusive and collaborative approach is essential when planning a BioBlitz. A diverse team is best for achieving your goals and accessing limited resources. An event that sounds fun, is community-led, and will produce valuable data is more likely to persuade organisations, experts, and volunteers to offer their time voluntarily or as a part of their paid work.

ORGANISERS – COORDINATING YOUR TEAM

First and foremost, essential to your BioBlitz is a lead organiser (or organisers) who will serve as the primary contact, being aware of all arrangements and able to delegate effectively. Support through a central organising committee helps share the load, along with designated roles within that committee (e.g., communications coordinator, safety coordinator, survey coordinator, etc.).

ORGANISATIONS – YOUR PARTNERS AND PARTICIPANTS

An effective BioBlitz collaboration will ideally include organisational partners with local connections, species expertise, and an interest in the species records collected. A BioBlitz can raise the profile of participating organisations and extend their reach to new audiences. It is best to engage with local groups and potential partners as early as possible in the planning process.

Local First Nations groups, community groups, councils, national parks, natural resource managers, natural history societies, museums, universities, science hubs, environmental education centres, gardening clubs, naturalists, scientists, and subject matter experts are all good starting points for creating your BioBlitz network. Seek out local companies and their employees who may like to assist the BioBlitz, either in terms of sponsorship or as participants in a corporate or volunteer capacity. For online BioBlitz events, consider partnering with a global organisation if the event is being run across multiple countries.

SCIENTISTS AND EXPERIENCED NATURALISTS – YOUR SURVEY LEADERS

Environmental expertise is essential for a successful event, not only during the event but also in selecting the most suitable site, timing, and activities. Invite local naturalists, rangers and/or scientists to join your BioBlitz team to serve as survey leaders. Aim to recruit survey leaders who can offer expertise across a wide range of species in your chosen location(s), enable a variety of surveys, and engage a broad audience. Specialist identifiers on platforms like iNaturalist can also help with the identification process after records are entered.

LEFT: *Jacaranda mimosifolia* is a widespread tree in the Southern Hemisphere. TOP: Volunteers for Eathwatch Saltmarsh Saver, Mackay, Qld. Photo: Soana Cameron MIDDLE: Sharks and Rays Australia Team and Volunteers Collecte DNA BOTTOM: An experienced bioblitzer explores deep rainforest, Coffs Harbour, NSW.

"Some iNaturalist 'super-users' spend very large amounts of time in the field, often have tens of thousands of observations and high level skills in photography and biodiversity identification. Using iNaturalist, it is easy to explore if any super-users are active in your area and invite them to your BioBlitz. Most would be excited to join in as a survey leader or participant. Participation by super-users will result in many more observations of biodiversity for your BioBlitz."

ABOVE: Hawaiian Beet Webworm Moth (*Spoladea recurvalis*) - Port Macquarie, NSW.

It may be beneficial to meet with the survey leaders on-site before the event to run through any plans and allow them to familiarise themselves with the location. Some survey leaders may also find it useful to have species lists previously recorded in the area, which they can either provide themselves or which you can compile with assistance from the Atlas of Living Australia database. It is also important to coordinate the timing and location of surveys to avoid spatial overlap; while surveys can run in parallel, they should not use the same transects or survey areas to ensure data integrity and minimise disturbance to wildlife and participants.

It is essential to collaborate with your survey leaders when determining what data to collect, which survey methods to use, how surveys will be done, and the maximum number of participants per survey. You will need to know what resources each survey leader will require, including equipment, and whether they need extra volunteers to assist them, and if any access or research permissions are needed.

The interaction between survey leaders and the public is a key attraction of a BioBlitz, so supporting survey leaders is very important. Our experience is that survey leaders enjoy the opportunity to share their knowledge and expertise, and nearly all have signed up as regular contributors each time we run a BioBlitz. Note they may also require a Working with Children or Vulnerable people check/card.

FIRST NATIONS – YOUR CONNECTION TO COUNTRY

First Nation involvement in your BioBlitz is highly desirable. Rangers or Elders who are prepared to share their deep understanding of local biodiversity, ecology and culture can significantly contribute to the sharing of knowledge and general engagement. Seek to also include a local Elder to offer a Welcome to Country. This can set the tone for the event and highlight the close relationship between traditional custodians and country.

SUPPORT ROLES - YOUR CAPABILITY RESOURCE

The support workers of a BioBlitz are essential and will determine whether your BioBlitz runs smoothly or not. They may be volunteers or paid workers depending on the resources available and who is running the BioBlitz. Event activities where you may need volunteers are:

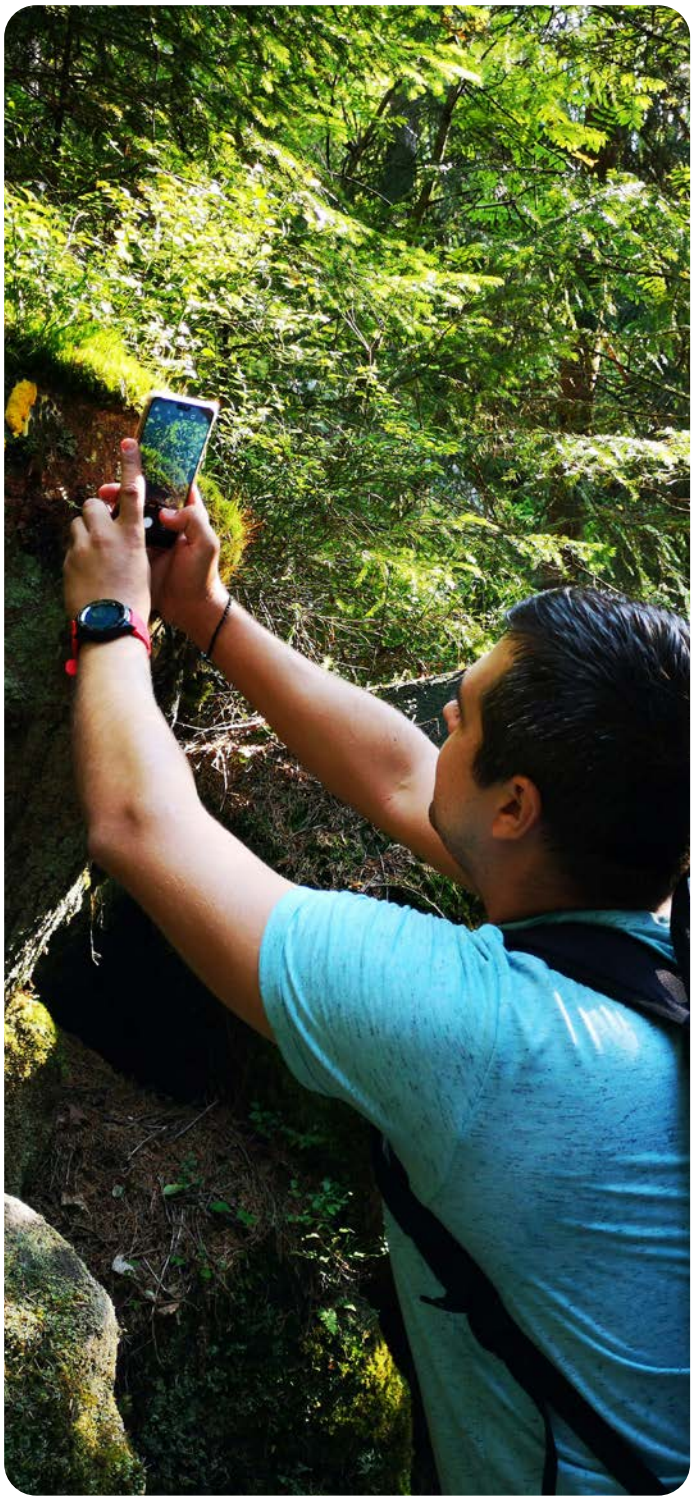
COMMON SUPPORT ROLES

- Registration and participant coordination
- Set-up and pack-down (for in-person events)
- Survey assistants, including supporting iNaturalist users
- Photographers and content creators
- Data entry
- Digital and communications support
- Outreach, promotion, and community engagement
- 'Meeters and greeters' (for in-person events as well as online)
- First aid and safety officers (for in-person events)
- Evaluation and feedback collection.

It is essential to determine early on what support roles are necessary for your specific BioBlitz format and which are best suited for volunteers. Consider both skills and preferences.

To avoid burnout and ensure that volunteers can also enjoy the event, create a manageable roster. For in-person events, this may involve 3–4 hour shifts; for online events, scheduling support across days or regions might be more appropriate.

Whether in-person or online, thoughtful planning around support roles helps foster a collaborative, inclusive and enjoyable BioBlitz experience for all involved.



TOP: Community event with Lama Lama rangers, Qld. Photo: Sharks and Rays Australia BOTTOM: Dmitry Rodionov during survey

PHOTO: Australian Sea Lion (*Neophoca cinerea*), Kangaroo Island, SA

Online BioBlitz case study - Great Southern BioBlitz

The Great Southern BioBlitz (GSB) illustrates how BioBlitz events can effectively leverage digital tools and global connectivity to facilitate widespread participation and biodiversity awareness.

By examining this case study, readers will learn practical strategies for organising inclusive, scalable, and digitally enabled citizen science events. They will also gain insights into how online platforms, effective outreach, and hybrid engagement methods can enhance community involvement, foster scientific contributions, and amplify local biodiversity initiatives within a global framework.

Launched in 2020 amidst the global COVID-19 pandemic by eight Australian naturalists and scientists, the GSB provided an opportunity for people across the Southern Hemisphere to engage with nature safely, often individually or in small groups, while remaining part of a broader, connected citizen science movement. This online-first approach proved both timely and transformative.

Held annually over a single long weekend in spring, the GSB aims to record as many observations of biodiversity as possible using the iNaturalist platform. The event has experienced exponential growth since its inception. By 2024, it had attracted thousands of participants from 27 countries across three continents, generating over 250,000 observations and documenting more than 25,000 unique species. These records now contribute to both country-specific and global biodiversity datasets, serving as valuable resources for scientists, conservationists, policymakers, and land managers.

TOP: The GSB Team in the field. BOTTOM: Participants from around the world come together to share their nature observations for the GSB

"The success of the GSB demonstrates how digital tools can be harnessed to mobilise widespread community participation in biodiversity monitoring. It is a compelling example of how a BioBlitz can be inclusive, impactful, and globally connected."

WHY IS THE GSB A SUCCESFUL ONLINE BIOBLITZ?

Accessible technology: The use of iNaturalist, a free and user-friendly platform, allows individuals with varying levels of scientific expertise to upload and share observations quickly and accurately. The platform's built-in species identification support and data validation by a global community of experts ensures both accessibility and data integrity.

EFFECTIVE OUTREACH

The GSB maintains an active presence on social media and its dedicated website, building anticipation and momentum. The accessible communication style helps bring in new users each year.

STRONG COMMUNITY ETHOS

Participants are encouraged to share their experiences through blogs, social media, and interviews, many of which are added to the GSB website before being translated and shared via social media. Tutorials and an online community foster strong connections.

HYBRID ENGAGEMENT

Although primarily online, many GSB participants and partner organisations run local in-person coordinated events during the BioBlitz weekend, offering multiple entry points for community engagement.

GLOBAL AND LOCAL RELEVANCE

The GSB's structure allows individual regions to create their own localised projects within the global event framework. This flexible model enables local stewardship and promotes regional biodiversity awareness while contributing to a larger international dataset.

Accessible technology: The use of iNaturalist, a free and user-friendly platform, allows individuals with varying levels of scientific expertise to upload and share observations quickly and accurately. The platform's built-in species identification support and data validation by a global community of experts ensures both accessibility and data integrity.

"IT IS OUR COLLECTIVE AND INDIVIDUAL RESPONSIBILITY...TO PRESERVE AND TEND TO THE WORLD IN WHICH WE ALL LIVE."

- DALAI LAMA

PHOTO: Garden Jumping Spider (*Opisthoncus sp.*) in Anglesea, Vic.

ABOVE: A young participant at Cooloola BioBlitz, Qld. Photo: Michelle Neil

Involving schools, guides & scouts

PRACTICALITIES

If your BioBlitz is in term-time, you may wish to invite local schools or scouting groups to take part. Previous experience has found that with a Friday-to-Saturday structure, children will bring their parents back on the second day. Ensure the schools are invited as early as possible, bearing in mind that it will take schools and groups time to organise, supply teacher cover, book transport, and obtain permission from parents. Provide them with specific time slots to attend and an idea of the activities they will cover in advance.

It is vital to consider your site from the school's point of view, especially with issues such as transportation, parking, administration, and health and safety risks. You can provide a risk assessment, parental consent form (including photo consent), and briefing for teachers and leaders well in advance to reduce the administrative burden on them. Ideally, you will need to inform schools about six months to a year in advance of the bioblitz dates to allow teachers to schedule it into their school's teaching calendar and term programming.

For Scouts (Joeys, Cubs, Scouts, Venturers, Rovers etc) there may be up to three badges possible to earn from a BioBlitz. These include Special Interest Areas (SIA) in Environment, STEM, and Personal Growth & Development (new skills). Scouts may also be eligible for community project service hours towards the World Scouting Earth Tribe Alliance Panda Badge (Environment). Consult with the leaders and see what is available. Guides and scouts will need three to six months warning generally. This also allows the leaders to prepare badgework for their units. The leaders will then order the badges and have them ready for the event.

Consider what size of groups will be best. Perhaps split classes into smaller groups of 10 or so, as they will be easier to manage and you will be able to provide a better experience for students. Ensure that whoever is leading school activities feels comfortable working with groups of children. Discuss content with them well in advance and remember that they may appreciate or need some extra support.

To create a successful school session at your BioBlitz, it is vital to recognise the motivations and requirements of schools and teachers and get them to 'buy in' to your event. It may be possible to collaborate with a local Environmental Education Centre or museum that can provide particular expertise or experience in natural locations and will be familiar with all the curriculum links to the activities they offer during weekdays. For Scouts and Guides consider evening and weekend activities.

Privacy is also an issue for schools, Guides and Scouts, so instead of each student having a separate database login, it may make educators and leaders more likely to engage if it is suggested that teachers use their work email addresses for their class' login. The students then add their initials in the comments box on observation. This way, educators have complete control over all data and interactions. iNaturalist also has an Educator's Guide, which talks about stewardship of your class' data. For Scouts and Guides an alternative could be a family account run by their parents or caregivers.

"TECHNOLOGY IS NEITHER GOOD NOR BAD - IT'S WHAT YOU DO WITH IT THAT MAKES THE DIFFERENCE."

TOP: Meeting a crab for the first time, Eagle Rock Marine Sanctuary, Vic. BOTTOM: Thomas Mesaglio gets everyone excited before the Ted Giblin Bioblitz in Port Macquarie, NSW.

CONTENT

Matching the activities with school curricula and learning objectives may make your event more appealing to schools. Demonstrate the scientific method by creating hypotheses for students to test or allowing them to come up with their own. Could you compare the biodiversity of two different habitats on the site? If this is a multi-year project, could you compare the biodiversity results to those of the previous year?

As students will be conducting fieldwork, provide methodologies, examples, and, if applicable, ID lists for the surveys.

This will help them understand the surveys they will be undertaking during the day and the scientific terms that may be used on any recording forms. If the schools can go over these with their students before the BioBlitz, their limited time at each survey will be optimised.

Ensure that a copy of the collected data is given to the school, as they may wish to use it in the classroom. You could also provide related activities for teachers to take back to school, which will increase the educational value of your event.

BOTTOM: Waterbug survey at Panboola BioBlitz, NSW. Photo: Ross Mannell. BELOW: Insect survey at ReefBlitz, Qld. Photo: Gary Cranitch, Qld Museum.

ABOVE: A live Anemone Cone Shell (*Conus anemone*) at Barwon Bluff Marine Sanctuary, Vic.

Health & safety

The health and safety of organisers, survey leaders, volunteers, and participants in your BioBlitz must always come first. As event organisers or facilitators, you have a duty of care, and there are health and safety elements that need to be considered for events that are on location or completely facilitated online. Below are key considerations to ensure your BioBlitz is safe, secure, and well-managed.

RISK ASSESSMENT

Undertake risk assessments covering all BioBlitz activities and identify hazards relevant to both central locations and independent surveys. Consider location-specific risks, such as wildlife (e.g., blue-ringed octopus), rugged terrain, and seasonal dangers. Communicate potential risks to all participants, including precautionary measures for mitigating identified hazards. Ensure participants undertaking remote activities independently understand these risks and are provided with guidelines to manage them safely. Night-time activities require additional safety measures (see page 38).

FIRST AID

Events in person will require first aid cover appropriate to the risk level identified in your risk assessment. Have trained first aiders available with a proper first aid kit at Basecamp and with survey leaders in the field. For online events, communicate guidelines on safe field practices, recommend essential safety equipment, and advise participants on how to respond to injuries or incidents independently. Provide contact details for local emergency services where participants are located.

PROTECTION OF CHILDREN AND VULNERABLE ADULTS

Prepare a written child protection policy applicable to both central event locations and online BioBlitz events. Clearly outline procedures to prevent one-to-one unsupervised situations between adults and minors or vulnerable adults. Ensure all organisers and facilitators interacting directly with participants have completed relevant Working with Children or Vulnerable People checks according to state or territory requirements. Have clear procedures in place to address any safeguarding issues, whether reported centrally or online.

EMERGENCY PROCEDURES

Develop clear, easy-to-follow accident and incident procedures that participants and organisers can apply whether activities are coordinated centrally or undertaken independently. At central locations, include site evacuation and communication methods suitable for your location (e.g., mobile phones, EPIRBs, satellite phones). For online events, establish clear reporting protocols for incidents or emergencies encountered by participants independently undertaking surveys. Ensure participants and survey leaders have essential emergency contact numbers and clearly outlined response plans.

SAFETY FOCAL POINT

Assign an identified Safety Officer responsible for overseeing all health and safety matters during your BioBlitz. Provide clear identification (e.g., t-shirts, badges) for event staff to ensure their roles are easily recognisable. Communicate how and where assistance can be obtained, whether via a central information area or designated online support channels.

For online BioBlitz events, an organiser could take on a role of communicating best practice safety messages for participants via social media. Such as discouraging BioBlitzing alone, keeping hands off potentially dangerous animals, and knowing the tide times on the beach.

ABOVE: Forest Scorpion (*Cercophonius squama*), SA.

ABOVE: Aquatic invertebrates being sampled during survey

Surveys

"Some iNaturalist 'super-users' spend very large amounts of time in the field, often have tens of thousands of observations and high level skills in photography and biodiversity identification. Using iNaturalist, it is easy to explore if any super-users are active in your area and invite them to your BioBlitz. Most would be excited to join in as a survey leader or participant. Participation by super-users will result in many more observations of biodiversity for your BioBlitz."

PERMISSIONS AND LICENCES

When determining where to hold your BioBlitz and the types of surveys you plan to undertake, it is essential to consider the permissions and licenses associated with different locations and surveys. Once you know which permissions and licenses you will need for your BioBlitz, you must plan the timing of obtaining access approvals.

You must obtain permission from the landowner(s) (public or private) to hold a BioBlitz on their land. For protected sites, contact the relevant statutory body. Additionally, if the site includes Traditional Owner controlled or managed land, ensure proper communication and consultation with First Nations representatives (e.g. Aboriginal Land Council, Elders group) and that the appropriate permissions are obtained.

Inform participants about any restrictions regarding protected species or handling wildlife. Ethics approval is required for surveys involving the handling and/or trapping of vertebrates (e.g. mammals, birds, reptiles, amphibians, or fish). The specific requirements will vary depending on the location of your survey area, as well as relevant institutional or legislative frameworks applicable to that area.

Collecting or surveying permits are often required for many species and some protected habitats, so seek advice where necessary. Some BioBlitz organisers employ one key ecologist who has all the required licences for surveys. Other survey leaders may have the specialist licences needed for whatever they intend to survey. If unsure about permits, licences and ethics, speak to your local council, Natural Resource Management organisation, or government body.

NOTE: Public Liability Insurance is a requirement for all events in public spaces, so be aware that you may need to purchase it for the event and ensure it is included in your budget. If you are partnering with governmental or not-for-profit organisations, you may be able to use their Public Liability insurance for the BioBlitz event. Insurance is essential to cover the event in case of accidents and as a requirement for permits.

SURVEY DATA AND RECORDING

The data gathered in your BioBlitz is an important legacy, so consider how the data collected from your survey might be used for scientific and land management purposes to maximise impact. BioBlitz surveys could provide 'baseline' data, an 'update' to check the status of a locally threatened or pest species, or increase understanding of population dynamics. Repeating BioBlitzes in specific areas greatly increases their scientific value. Discuss possibilities with any partner organisations and see if there are any species groups of special interest or gaps in data that your BioBlitz might fill.

You can collect data using paper datasheets, cameras, and directly via various online apps and websites like iNaturalist. Your survey leaders may have a preferred method. The endpoint for the data you collect should be the Atlas of Living Australia, which is the national biodiversity database.

Explain to participants how you intend to use the records so they know where the data will end up and how it will be shared. Public accessibility of this data should always be central to any BioBlitz event.

Remember to get the appropriate copyright permissions for any survey photos taken by participants, preferably a Creative Commons-Attribution (CC-BY) or Creative Commons-Public Domain (CC0) licence so that you can use and share the images in the future. This can be done as part of your registration process if you are participating in an in-person BioBlitz.

GUIDED SURVEYS

A survey leader can lend their time and expertise by directing a guided survey. Having an expert available to answer questions and guide participants as they participate in activities may help clarify any confusion and reduce risks to participants, wildlife, and the site. Make sure to ask the survey leader how many participants they are comfortable working with and whether they will need assistance.

ABOVE: Experts working with public participants for Cooloola BioBlitz. Credit: Michelle Neil

SELF GUIDED SURVEYS

Self-guided activities are a vital tool for online BioBlitz events, helping to engage local BioBlitz participants between collaborative activities. Your risk assessment and animal ethics approval will also need to cover self-guided activities. You can minimise injury to participants and impact on wildlife by choosing easily accessible habitats, following walking tracks and identifying any ethical issues related to observing or sampling living organisms. Here are a few ideas for self-guided surveys:

- Participants can be offered 'missions' to find different species or artefacts, such as shells, feathers, leaves, or nuts, that can be identified by an expert back at Basecamp
- Nature trails that progress around the site can be devised, with printed 'spotter sheets' of target species to look at, e.g., "Top Five" or "Hunt for Alien Invaders"

- Recording forms and maps can be provided to participants
- Participants can photograph observations, and they can either be identified back at Basecamp or uploaded for later identification
- Specialists may be available during or after the BioBlitz, and could be asked to help identify online recorded species
- Survey leaders might like to do some 'solo surveying' as it is often difficult to lead a group and record wildlife simultaneously. Rotating shifts or including a few surveys which are closed to the public can work well.

BELOW: Brown Hill Creek nocturnal BioBlitz, SA.

AFTER DARK SURVEYS

Night surveys for wildlife, such as possums, bats, moths, and frogs, are among the most exciting BioBlitz activities, but they require careful planning due to the additional health and safety risks. Some may need to strictly limit public numbers or even be best left only to survey leaders and skilled volunteers. Remember to check when the sun sets. Here are a few ideas for after-dark surveys:

- Light-trapping for moths is well suited to public involvement either on the night or by examining the catch the next morning
- Audio recording of birdsong at dusk and as dawn approaches
- Tracking bats, which can be possible with a bat detector and ideal for guided walks
- Invertebrates such as arthropods and molluscs are very active at night. You can search by hand or set pitfall, flight intercept, or Malaise traps to check in the morning.
- Beach surveys and rock-pooling can be done by torchlight. Check tide times and pay particular attention to safety
- Live trapping of small mammals by trained people. Licenses are required for this, and traps must be checked regularly
- Recording forms and maps can be provided to participants
- Participants can photograph observations, and they can either be identified back at Basecamp or uploaded for later identification
- Specialists may be available during or after the BioBlitz, and could be asked to help identify online recorded species
- Survey leaders might like to do some 'solo surveying' as it is often difficult to lead a group and record wildlife simultaneously. Rotating shifts or including a few surveys which are closed to the public can work well.

After-dark activities also have some additional concerns that are important to consider. Make sure to check with any groups or organisations that you choose to work with, as they may have their own risk assessment processes or policies in place that you will need to follow. Here are a few safety tips for after-dark surveys:

- Keep group sizes manageable
- Participants should always be accompanied by an experienced guide
- All participants should be briefed before the survey on what to do in case of injury, getting lost, or encountering unexpected hazards

ABOVE: Night survey for moths in the Adelaide Hills, credit: Ferox australis RIGHT: A biodiverse shoreline of gastropod mollusc shells, with Neptune's Necklace (*Hormosira banksii*) growing, Vic.

- At least one trained first aider should be present on each walk, and first aid supplies should be carried
- Carry whistles for emergency communication and consider using radios or mobile phones where possible to maintain contact between groups
- Ensure all participants are equipped with torches or headlamps, and encourage the use of reflective vests or bands for visibility
- Walks should follow well-defined paths
- If working near water, ensure appropriate safety measures are in place, including supervision and suitable equipment
- Use red-filtered torches when observing sensitive species to reduce disturbance
- Notify local authorities or landowners if the event will take place near residential areas.

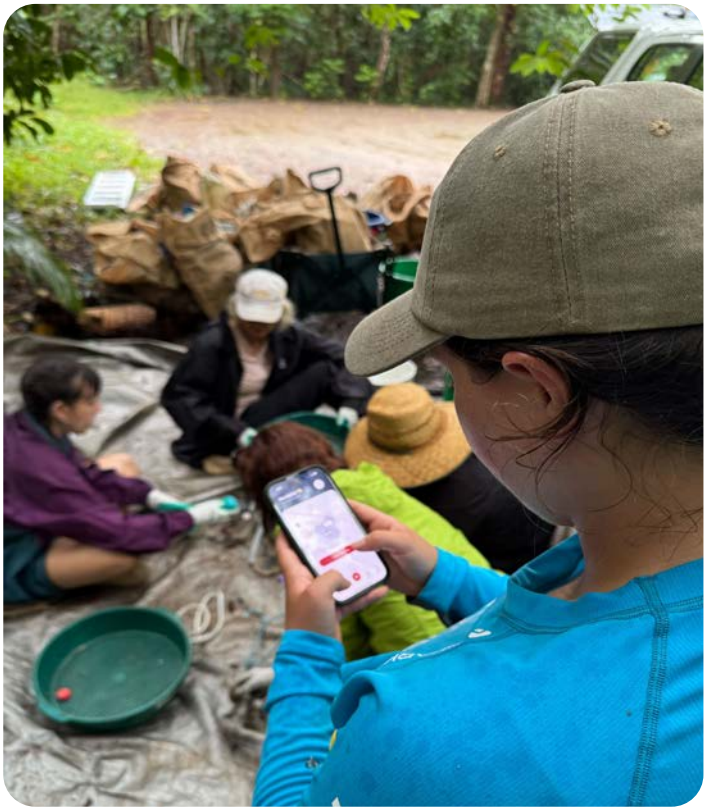
MARINE AND FRESHWATER SURVEYS

Amazing biodiversity can be found in non-terrestrial ecosystems. Coastal environments are hotspots for a diverse array of fascinating species. Rockpools are a favourite for surveys, but activities need to be planned around the tides and weather conditions. Leaders with experience in this environment are recommended, as it is a sensitive habitat, and best practices must be implemented to minimise environmental damage and risks to participants.

Catch-and-release fishing and bioblitz events can also be great ways to explore freshwater ecosystems such as rivers, creeks, wetlands, and dams. For example, the Home River Bioblitz is a global citizen science initiative that invites communities to survey and document species found in and around local rivers. These events provide valuable data on freshwater biodiversity while engaging people of all ages in conservation efforts.

Activities like dip-netting and aquatic invertebrate surveys are popular during such BioBlitz events and can be easily adapted for families and schools.

Always check whether special permissions, permits, or animal ethics approvals are required for aquatic activities in your area. Safety measures such as life jackets, water-quality assessments, and sun protection should also be in place.



ABOVE: Makeshift basecamp for GSB in the field, processing samples and making observations

Basecamp

For an in-person BioBlitz, basecamp will be the hub of activity and thus needs to be accessible and well-organised. For scientists and naturalists, it serves as a gathering place to launch surveys and report their findings. For participants, it serves as a registration point, a place to discover ways to take part, a hub to see what has been discovered so far, and a place to rest and socialise.

BASECAMP FUNDAMENTALS

From an event management perspective, Basecamp needs to be where possible:

- Welcoming, safe, secure and easy to navigate around.
- Easy to find and accessible to the public
- Close to catering and toilets (accessible 24 hours if your event is running over-night)
- Connected to necessary services, including electricity (or portable generators) for lighting and facilities as well as phone access (fixed or mobile signal) for internet/wi-fi access
- Adaptable in the event of bad weather, security issues, etc.

BASECAMP FOCAL POINTS

Basecamp should have a series of surrounding focal points for various event management and science activities.

Information/registration area

- Your registration process must keep track of participant numbers, contact details, signed disclaimers, and photo permission forms for each survey
- Make sure personnel here are well-informed, good communicators, and enthusiastic
- This will usually be the best place for first aid supplies, lost child/possessions, fire extinguisher points, and a master information folder, including copies of the emergency contacts list, site map, timetable, briefing notes, and any other necessary documentation.

BioBlitz map and timetable

- It is a good idea to get a large map printout of the whole BioBlitz area with survey areas clearly marked to display at Basecamp
- The map should be placed next to a large timetable so everyone can see when and where their surveys will take place.

Identification area

- This is where participants will learn about the species they have found and how to identify them
- Ensure that personnel are present who are experienced in the relevant field(s)
- Should have any necessary identification and data recording equipment such as field guides, plastic trays and bags, microscopes, cameras, laptops, and internet access if possible
- In addition to reference books and guides, there are numerous online resources such as the Atlas of Living Australia, iNaturalist, Museum Field Guides for each state, and many others. Searching Google images online can also be valuable
- Once a species has been identified, label it (e.g. Christmas Beetle - *Anoplognathus pallidicollis*). People can then look at the specimen alongside the guides.

Results area

- This is a central point where species records can be collated, and results can be displayed
- You may need data entry volunteers to help with this
- You could use low-technology blackboards, a projector or TV to display live results
- Bring a small scanner and memory card reader to digitise notebooks and collated specimen photos as evidence to support records.

Rest and refreshment area

- This is where organisers and volunteers can sit and renew energy between surveys, particularly if they are working overnight
- Decide whether local cafes will be sufficient for the needs of participants, and be sure to alert them to your event
- You can work with a group like Rotary or CWA to provide food and drinks (for a donation or fee).

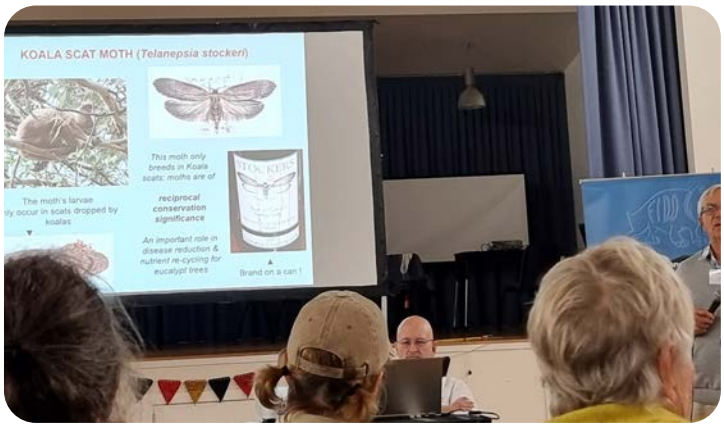
Secure area

- An area where organisers and volunteers can leave personal possessions and store field equipment when not in use.

Optional activity ideas

There are a number of optional ways to increase interest and activity at Basecamp:

- Competitions, such as nature photography, wildlife drawing, and guessing the number of species that will be found, can be really popular
- Microscopes always draw a lot of interest, especially if linked to a laptop, flat-screen monitor, or projector. Try analysing a sample of soil, sand, contents of a plankton net, or pond water
- Wildlife-related stands, stalls, and presentations, such as nestboxes and insect hotel building, flower pressing, face painting, and crafts. Don't underestimate the value of these as icebreaker activities, particularly for younger children and casual drop-ins
- Museum in a Box. The Australian Museum can loan boxes of museum specimens and resources that will add a lot to your displays. Contact your local or State Museum to see what loan material is available.
- Display and membership stands for natural history groups (e.g. friends groups, conservation or volunteering organisations, natural history societies, scuba diving clubs, etc). Encourage organisations to create active and interesting displays.
- Running footage of nocturnal animals captured



TOP: Presentation at Cooloola BioBlitz, Qld. MIDDLE: Western Bearded Dragon (*Pogona minor ssp minor)* Tarin Rocks WA. BOTTOM: *Daviesia uniflora Tarin Rocks WA*

Promoting the BioBlitz

Spend some time planning how to promote your BioBlitz as effectively as possible.

Consider some of the following points and incorporate them into a communications plan.

Goals

Determine the key messages and main aims for the promotion. In your promotion, explain the different ways people can get involved. Some example prompts are as follows:

For photographers and artists

- "Capture the beauty of nature through your lens or art. Participate in our BioBlitz and showcase your work while contributing to science"
- "Use your creative skills to highlight local biodiversity and inspire conservation efforts."

For participants and volunteers

- "Be a part of a community-driven scientific endeavor. Help us record species and contribute to meaningful environmental data"
- "Engage with neighbours and nature alike, volunteer at our BioBlitz and make a difference.

 ABOVW: Cradle Mountain, Tas, by Squirrel Photos.

For educators and students

- "Transform your classroom into a field lab. Participate in our BioBlitz to provide hands-on learning experiences about local ecosystems"
- "Encourage students to become citizen scientists and foster a deeper connection with the environment.

For scientists and naturalists

- "Share your expertise and passion for biodiversity. Lead surveys and mentor participants in our upcoming BioBlitz"
- "Collaborate with fellow scientists and the public to enhance our understanding of local species."

ABOVE: A family of Australian Wood Ducks (*Chenonetta jubata*), Vic.

AUDIENCE

Identify your primary audiences, what you know about them, and what is the best way to communicate with them. Invite groups you think will be interested and inform local and national bodies that might help promote your event (e.g. Local Council, Tourist office, the Atlas of Living Australia, Inspiring Australia, the Australian Citizen Science Association). Encourage everyone in your partnership to inform their contacts and networks of the broad event details, location, and date.

COMMUNICATION TOOLS

There are several tools at your disposal to help promote your event.

Utilising established branding can provide some recognition from the public and even the media. You can design and order logos, t-shirts, banners, signs, posters and programs for public attendees. The name 'BioBlitz' itself has also developed international recognition in the media. Nobody owns it, and you don't need to use it if you don't want to.

If undertaking an in-person BioBlitz, advertise locally in the weeks leading up to your event using flyers in libraries, shopping centres, banners at the venue, and newsletters. Social media, email newsgroups, online biodiversity-related communities, and blogs are also useful publicity tools. Remember to include links on your flyers or or posts to more detailed information.

Reaching out to traditional media outlets, such as newspapers, television, and radio, can be a valuable and cost-effective way to gain publicity for your event. Decide on your story before contacting anyone and ensure your message is as 'newsworthy' as possible. Events that are novel, extreme, large-scale, or in interesting locations stand out.

"Naturalists and scientists involved with your BioBlitz are a great source of publicity. Radio and newspapers are all keen to hear what insights these specialists can give. Interviews with traditional media are a great way to build interest and promote the surveys and local environment"

Action plan and timeline

Consider the timing of each of your promotional activities, including post-event, and who is responsible for the different actions.

Plan ahead

Remember that people need enough notice to include events in their diaries and that there are deadlines for certain newsletters. Note also the time required to prepare and distribute any printed materials.

On the day

If running an in-person BioBlitz, hand out leaflets around the location to inform and encourage residents and passers-by to attend your event. For online BioBlitz events, you can create a live buzz around the event using social media with #hashtags. Remember to encourage ongoing participation in citizen science projects, which can build a community invested in environmental learning and conservation.

After the event

Share photographs, species totals, interesting finds, stories, and other key information to the media and the public. Sharing success stories and interesting findings inspire community pride, and generate support for future environmental initiatives. Remember to evaluate the effectiveness of your plan so you can improve your approach in the future.

- What communication tools worked best?
- What sort of people attended?
- How did they find out about the event?

BELOW: Koala (*Phascolarctos cinereus*) joey is happy riding on mum's back by Holger Detje

Budget

Planning your BioBlitz budget will depend on the scale and nature of your event. Understanding the types of costs involved and how to manage them is essential when planning.

An in-person BioBlitz may involve costs such as equipment hire, site setup, accommodation, catering and printed materials. Conversely, an online BioBlitz, where individuals or groups participate from their local areas, can often be delivered at little or no cost, especially if organisers are volunteering their time and participants use their own devices and tools.

COMMON AREAS YOU MAY INCUR COSTS

- Venue and logistics: typically only relevant for in-person events, including shelter, furniture, lighting, toilets, signage, and safety infrastructure
- Digital infrastructure: websites, data platforms, apps, or Wi-Fi access
- Survey and scientific equipment
- Personnel and facilitation
- Promotion and outreach
- Insurance and administration: including permits, risk management documentation, and public liability cover where needed.

Online resources, community goodwill, and creative partnerships can significantly reduce expenses. Reusable items can be viewed as investments for future BioBlitzes. Be open-minded and flexible. Align your spending with your event's core objectives, and do not hesitate to ask for support or sponsorship, whether that be in-kind or volunteer-based help, as examples. Importantly, remember that a successful BioBlitz does not need to be expensive to have long-lasting positive impact.

LEFT: Southern Water Skink (*Eulamprus tympanum*) can sometimes be found at home, Vic. BELOW: Snake-necked Turtle (*Chelodina longicollis)*, SA

After the BioBlitz

Post-event recognition, communication, and evaluation of your BioBlitz are integral to maximising its success and impact. Capitalising on participant enthusiasm and effectively analysing your outcomes helps to sustain momentum and enhances future activities.

IMMEDIATE ACTIONS

Ensure any event locations are cleaned up after the event. Individually acknowledge and thank participants, organisers, and supporters at the end of each day, maintaining peer recognition. Make the most of this momentum by building lasting connections and encouraging continued engagement beyond the event itself.

COMMUNICATING RESULTS

Prepare a concise, engaging event report summarising key outcomes, notable species discoveries, and memorable experiences. Circulate this report widely among participants, scientists, naturalists, volunteers, sponsors, landowners, and local media to celebrate and highlight achievements. Including event photos can enrich communication and foster continued engagement. Sharing insights with other BioBlitz organisers can also help build an ongoing community of practice.

CELEBRATE WITH FOLLOW-UP ACTIVITES

If you have the time and resources, it is well worth maintaining the momentum and connections formed during your BioBlitz by organising post-event activities.

Engage local schools, libraries, or community groups through follow-up talks or presentations that communicate event outcomes, interesting findings, and stories. Use this engagement as an opportunity to start preparing and generating excitement for future events.

FEEDBACK AND EVALUATION

Gathering comprehensive feedback is important for evaluating event successes and identifying areas for improvement. Practical evaluation demonstrates achievement of your original goals, supports future funding applications, and contributes to national insights into BioBlitz events as tools for citizen science engagement. Share evaluations with organisations such as the Australian Citizen Science Association.

Who to collect feedback from

Obtain timely feedback from all participants, employees, and volunteers to gain diverse perspectives and insights.

How to collect information

There are different ways of capturing information for your evaluation, and as you will be collecting both qualitative and quantitative data, they all require different levels of effort:

- Exit surveys: completed by participants during the event or later via email
- Exit interviews: short (~90 seconds) snapshots to capture immediate feedback
- Staff interviews: organisers, volunteers, and naturalists provide formal and informal insights
- Observation: a designated evaluator records attendance, composition, and participant reactions.

What information to collect

You will want to collect and evaluate information on different aspects of the BioBlitz, with the questions varying depending on who you are asking and what outcome you are trying to measure. Questions may cover:

- Audience demographic
- How they found out about the BioBlitz
- Feedback regarding activities
- Scientific outcomes (broken down by broad taxonomic category such as birds, reptiles, mammals, plants, etc.)
- Individual outcomes
    - » What did participants and survey leaders learn at the BioBlitz?
    - » Did they change their attitude to science, the environment etc?
    - » What did they think was the purpose of the BioBlitz?

BELOW: Furneaux Group islands, TAS

Data & reporting

BioBlitz events are exceptional opportunities for communities to collaborate in exploring and documenting local biodiversity. For most events, this information is typically compiled into a list of species records and photos for the location, which is then archived on relevant databases. The data collected must be as clear, comprehensive, and accurate as possible, as that makes it more useful for scientific analysis. Changes in species distribution and abundance, as well as subtle differences between populations of the same species, can reveal much to ecologists about the incremental impacts of environmental changes and land-use pressures.

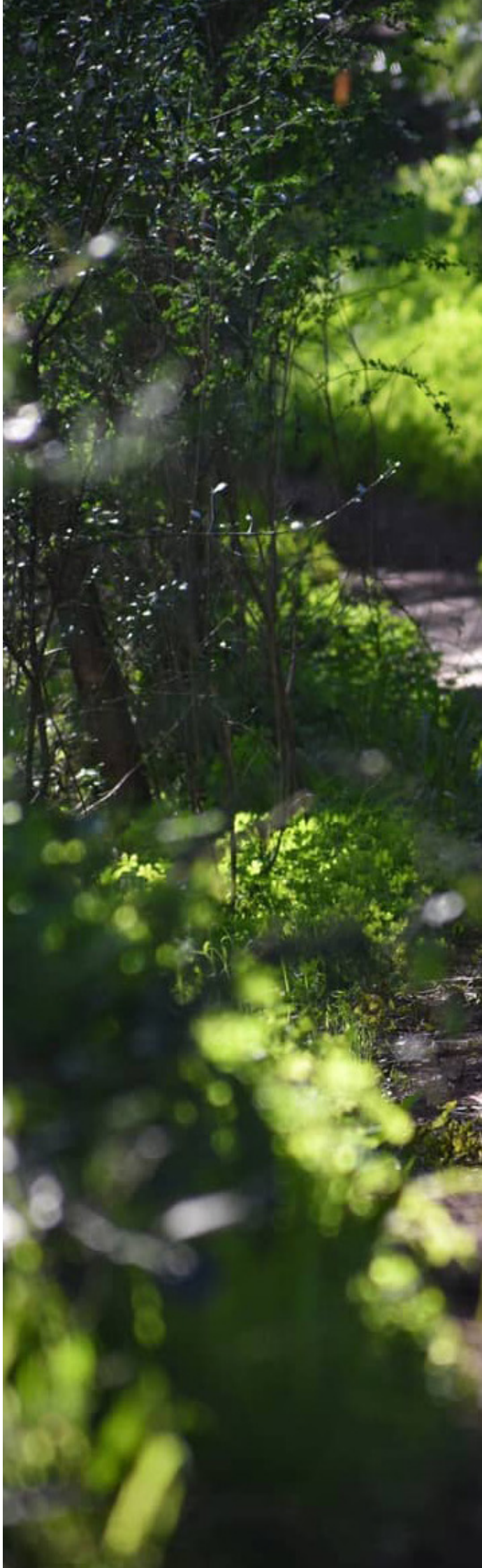
However, this abundance of information can be overwhelming, particularly for those without a scientific background. By effectively handling this data, you can transform collective observations into valuable insights that advance education, bolster conservation efforts, and foster deeper community engagement.

WHAT IS A BIOLOGICAL RECORD?

A biological record is a documented record of a particular species in a certain area on a specific date. A BioBlitz aims to record everything, whether common or rare, to build a comprehensive picture of the site's biodiversity present during the event.

If you are new to recording biodiversity occurrences, then contact your relevant state government environment agency, museum, herbarium, the ALA, or other local nature group for guidance. Universities and the many relevant websites are great resources as well.

Biological records made by expert naturalists may form the bulk of your species list; however, getting beginners involved in biological surveying is invaluable to cultivating an interest in nature and helping to build the local and national biodiversity database.



The most vital components of a species record are:

Who?

- Who found the specimen and who identified the species?
- Once the record is submitted it may need to be verified by an expert

What?

- What is the name of the species?
- Give a common and scientific name if you can, otherwise note down the higher group level (e.g. spider), then seek help with your identification. Higher level identification (eg. Family) is acceptable for many groups
- Try to get a good quality photo from different angles, showing different features, and with a measuring strip if possible, to support your record.

When?

- Record the date and time of day.

Where?

- Where was the observation made?
- Ideally recorded as a latitude/longitude in decimal degrees (WGS84). This is a very commonly used coordinate reference system (CRS) and is the default used in Google Maps, mobile phones, and many hand-held GPS units
- Many data recording tools, including some mobile phone apps will also allow you to simply place a marker on a web-map (or use the on-board GPS) and will automatically capture the coordinates

How?

- What device was it recorded on (e.g. smartphone)
- How was it recorded (e.g. via iNaturalist)
- How was it peer reviewed or verified?

Platforms like iNaturalist automatically document essential observation details including who made the observation, as well as when, where, and how it was recorded.

Increasing the data value using annotations in iNaturalist

If your BioBlitz utilises the iNaturalist platform, a valuable feature is the ability to apply annotations to observations, enhancing their scientific utility. Annotations add detailed context, such as whether the organism was alive or dead, or if the observation is of a trace such as feathers, footprints, or scat. Other important annotations include life stage (e.g., juvenile or adult) and reproductive status (e.g., flowering plants). This additional context greatly enriches biodiversity records, especially for studies investigating seasonal biological events—known as phenology.

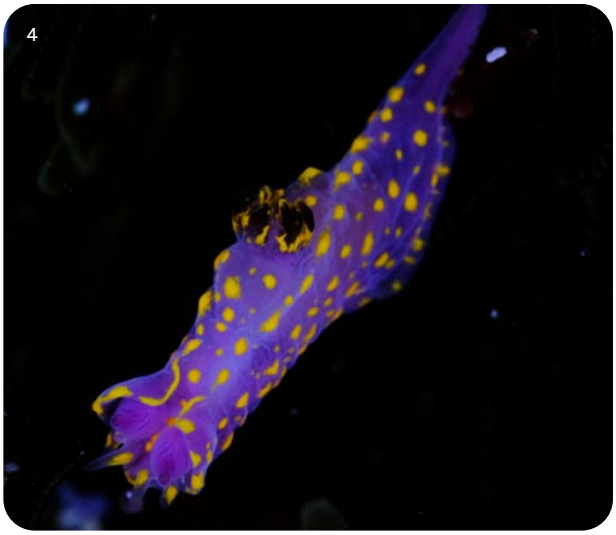
LEFT: Horsnell Gully Conservation Park, SA

PHOTOGRAPHS

Photographs are valuable evidence of a species, particularly if you are uncertain of the identity of the species. They are also essential if the record is to be verified by an expert. The best images for identification and verification purposes are clear, in-focus, show the subject as large as possible with minimal 'wasted space'. Include something for scale if possible, and no filters. It can be helpful to use the closest focus distance possible and get as close as possible when photographing organisms. Taking multiple photos is recommended, capturing its surrounding habitat and a variety of angles. For invertebrates, you should capture a top-down view and a side view. More often than not, photos of moving animals will be blurry, but sometimes matching the movement speed of the creature when taking their photo can result in a sharper image.

You could even include a 'best photo' competition as a BioBlitz activity. It is also essential to make it easy for people to download or upload their images at Basecamp, and this is best done before they leave the BioBlitz!

1: Laughing Kookaburra *(Dacelo novaeguineae)* 2: Swamp Tigertail, *(Synthemis eustalacta)* 3: Jacky Tree Dragon *(Amphibolis muricatus)* 4: Nudibranch *(Polycera janjukia),* Vic. 5: Lace Monitor *(Varanus varius)* 6: Wattle, *(Acacia sp.)* 7: Metalic Coolskink Carinascincus metallicus TAS 8: Horse Fly, Tabaninae. Vic. 9: Short-beaked Echidna *(Tachyglossus aculeatus).* 10: Mygalomorphae spider photography. Photo: Michelle Neil 11: Bird Nest Fungi *(Cyathus sp.),* NSW. 12: Beautiful Leaf Moth *(Gastrophora henricaria),* Vic. 13: Cinnamon huntsman *(Isopedella leai)*



RECORDING FORMS

There are several example sites from which you can download standard data collection forms. If necessary, you can adapt these to your needs. Some example sites include the Atlas of Living Australia sightings page, and the Atlas of Life in the Coastal Wilderness.

Survey leaders may also want to supplement the basic fields with some additional data, or they may have an existing standardised recording system they would prefer to use. It is, therefore, essential to understand the data recording needs of survey leaders and data users well in advance of the event.

DATA RECORDING TOOLS

To be used for scientific purposes, the data collected during a BioBlitz must be incorporated into a larger database that enables scientists to analyse patterns, distribution, and changes over space and time. The Atlas of Living Australia is a national aggregation hub for species occurrence data. It provides a suite of tools for collecting, visualising, and analysing this data.

Several BioBlitz projects have successfully utilised digital tools for recording survey data and contributing to national and international biological repositories. Some of these tools include BioCollect, iNaturalist, NatureMapr, FrogID, eBird, and Birdata, among others. Different tools have different strengths and weaknesses, so try them and talk to people who use them to record observations and analyse the data.

MAPS

Easily readable copies of relevant field maps should be provided to each survey team and to individuals participating in self-guided surveys when they go out on their survey event. These should be pre-marked with legible transects, grids, points, etc., as appropriate to the type of survey. Survey leaders and scribes should also be familiar with the spatial referencing and mapping method before leaving the survey event.

COLLATING SPECIES RECORDS

Some experts will need to take specimens away to ID them, so you will not get their lists until several weeks later. Make sure you highlight this when revealing your final species tally and update people via your website(s), social media, or other relevant channels after the event. When announcing your grand species total (which can be another publicity opportunity), use wording such as 'so far' rather than 'final' as there may be additional records to come from experts. They may be prompted to submit any outstanding records by the publicity!

WORKING WITH COMMON DATA ISSUES

BioBlitz events are invaluable for engaging communities in biodiversity monitoring; however, for the data collected to be reliable and useful, there are certain challenges that must be addressed. This section examines common data issues and provides solutions to improve the quality of your BioBlitz data. Not only does addressing and mitigating these issues improve the scientific value of the data, but it also enriches the experience for participants by providing them with a more comprehensive understanding of local biodiversity.

Variable data quality

Participants of a BioBlitz will have varying levels of expertise, leading to inconsistencies in data quality. Some strategies to improve data quality include:

- Providing standardised protocols before the event, with clear and simple guidelines outlining what information should be recorded for each observation
- Offering training sessions, either in person or online, on species identification and data recording techniques, pre- and or post-event, ensuring participants are prepared
- Encouraging the use of reliable field guides, mobile apps with identification aids, and online resources can help participants make accurate identifications
- Establishing a system to review the submitted observations after the event, allows for verification of species identifications and correction of any errors
- Checking of participant's methods by survey leaders.

Multiples of observations

A common challenge during a BioBlitz is the occurrence of multiple observations, where various participants record the same species in the same location. If your main outcome from a BioBlitz is to not just generate a species list for an area, some strategies to reduce overlap include:

- Spreading participants out by assigning specific areas or habitats to different groups, ensuring that each team explores a unique section of the study area
- Directing guided walking groups to less-covered zones, maximising coverage and reducing redundancy
- Scheduling surveys at different times for specific locations also helps prevent multiple groups from surveying the same area simultaneously, thereby decreasing the likelihood of various recordings while increasing the likelihood of observing new species.

By reviewing the dataset and identifying any overlapping entries after these mitigation methods are utilised, you can address any remaining multiples of observations to ensure the data's reliability and usefulness.

Biased observations

Participants often gravitate towards observing more noticeable or charismatic species, such as certain birds, mammals, or flowering plants. This tendency can lead to the underrepresentation of less conspicuous taxa, resulting in an incomplete picture of the area's biodiversity. Some strategies to mitigate taxonomic bias include:

- Providing participants with identification guides covering a wide range of taxa, highlighting the ecological importance of all species and emphasising that every observation contributes valuable information
- Involving local taxonomists or naturalists who specialise in less-studied groups can inspire participants to explore beyond the more obvious species
- Creating challenges or recognition programs or focused activities that reward participants for recording a broad diversity of species, especially those from underrepresented groups.

MAKING THE MOST OF YOUR DATA

Collecting data during a BioBlitz is just the beginning; the true power lies in analysing and interpreting this information. The value of your BioBlitz data extends far beyond its initial collection: it empowers communities to make informed decisions that benefit both people and the natural world and fosters a more engaged and informed society committed to preserving biodiversity.

Your data can be used to generate study tools for local schools and teachers that cover many different aspects of STEM, or be reviewed in future workshops to inform the community on local biodiversity. Interactive sessions encourage participants to explore the data themselves, perhaps through guided activities or discussions, deepening their engagement and appreciation for the natural environment.

If you lack the requisite knowledge in this area, it can be helpful to partner with someone more experienced.

Informing conservation and management

The insights derived from your data could also support decision-making processes within local councils and government agencies. Your data may be used to inform conservation efforts by identifying species that may need protection or highlighting areas rich in biodiversity. This vital, evidence-based information can influence environmental policies, land management decisions, urban planning, and resource allocation, among other places.

By performing analyses on your data (e.g., species richness), doors can be opened for future in-depth research into your surveyed area. Highlighting observations of threatened or endangered species brings attention to those that may require immediate conservation action. Additionally, including this data in grant applications can strengthen your proposals for ecological projects by demonstrating evidence-based needs and potential impact.

ABOVE: Australian Pelican (*Pelecanus conspicillatus*), TAS

ETHICAL AND LEGAL CONSIDERATIONS

When working with data collected from BioBlitz events, it is also important to be aware of and adhere to human and animal ethical and legal responsibilities, particularly regarding data privacy, ownership, and compliance with relevant laws and regulations. Protecting the personal information of participants is of paramount importance.

Personal data, such as names, contact details, and other identifying information, should be handled with care to ensure confidentiality and comply with privacy laws, including the Australian Privacy Act 1988. When sharing data publicly, remove personal identifiers to maintain anonymity unless permission is otherwise given, and ensure that participants have provided informed consent about how their data and any associated media will be used and shared.

Understanding data ownership and respecting intellectual property rights are also crucial. Always respect the terms of use of platforms you might be using, adhering to any specified licensing agreements when extracting and utilising data from these sources.

Compliance with local and national laws ensures that your activities are lawful and ethically sound.

Familiarise yourself with regulations related to data management, biodiversity information, and wildlife protection, such as the Australian Privacy Principles and the Environment Protection and Biodiversity Conservation Act 1999. Additionally, be cautious when sharing sensitive information, such as the exact locations of endangered species, to prevent potential harm from poaching or habitat disturbance.

By adhering to these ethical and legal considerations, this approach not only ensures compliance with laws but also fosters trust within the community, encouraging ongoing engagement and support for biodiversity initiatives.

Activity: Planning your own BioBlitz

This section is designed to help you reflect on and apply ideas and practises identified in this guide when planning your own BioBlitz. By working through the following prompts, you can assess the scientific value, inclusivity, and broader impact of your event. These questions align with the Australian Citizen Science Association's 10 Principles of Citizen Science and are intended to support best practice, ensure meaningful community engagement, and guide you in designing a BioBlitz that is both scientifically robust and socially valuable. Use the space provided to draft your responses and revisit them as your planning progresses.

1. What outcomes are you seeking?

- Scientific and environmental outcomes

- Organisational Outcomes

- Community Outcomes

- Individual Outcomes

2. Will a BioBlitz help you to achieve these desired outcomes?

3. Which BioBlitz type do you think might be suitable at this stage? i.e., online, in-person or both?

4. If relevant, which location do you think might be suitable at this stage? Consider the value of the habitat, the accessibility, and safety.

5. If relevant, which time might be best to run your BioBlitz event(s)? Consider seasons, duration, and timing around other events(s)chedules. and safety.

6. Principle 1 is 'actively involving citizens in a scientific endeavour that generates new knowledge or understanding'. How will your BioBlitz achieve this principle?

7. Principle 2 is 'citizen science projects have a genuine science outcome'. In what ways will your BioBlitz ensure that the findings or data are scientifically valuable and contribute to the field of study?How will your BioBlitz achieve this principle?

8. Principle 3 is 'citizen science provides benefits to both science and society'. How will your BioBlitz benefit both science and society?

9. Principle 4 is 'citizen scientists may participate in various stages of the scientific process'. Consider which stages of your BioBlitz project citizen scientists will be involved:

- ☐ Develop research questions
- ☐ Design methods
- ☐ Gather data
- ☐ Analyse data
- ☐ Communicate results

10. Principle 5 is ‘citizen scientists receive feedback from the project’. How will you ensure that citizen scientists receive timely and meaningful feedback about the progress and findings of your BioBlitz event(s)?

11. Principle 6 is ‘citizen science, as with all forms of scientific inquiry, has limitations and biases that should be considered and controlled for’. What potential limitations and biases might affect your BioBlitz, and how will you address or mitigate them

12. Principle 7 is ‘where possible and suitable, project data and meta-data from citizen science projects are made publicly available and results are published in an open access format’. How will you ensure that the data collected by citizen scientists as part of your BioBlitz is made publicly available and accessible to a broader audience? Further, how will you balance the need for data sharing with any ethical or privacy concerns related to the data collected?

13. Principle 8 is ‘citizen scientists are suitably acknowledged by projects’. How will your project acknowledge your BioBlitz participants?

14. Principle 9 is ‘citizen science programs offer a range of benefits and outcomes which should be acknowledged and considered in project evaluation’. What benefits and outcomes should you evaluate as part of your BioBlitz event(s)? E.g., scientific outcomes and knowledge sharing.

15. Principle 10 is ‘leaders of citizen science projects should take into consideration legal and ethical considerations of the project’. What legal and ethical components of your BioBlitz should you consider? E.g., risk assessments and data attribution.

Notes

Use this space to jot down ideas, contacts, equipment lists, or observations as you prepare for your own BioBlitz. Whether you're planning surveys, tracking species, or coordinating your team, keeping notes will help you stay organised and make the most of your event.

Notes

Notes

AUSTRALIAN GUIDE TO RUNNING A

BIO BLITZ

This guide was developed by the team at Ferox australis in collaboration with the Australian Citizen Science Association.