Click these buttons to navigate the Toolkit

Conservation **Evidence** Toolkit

Version 1.0 15-01-2025

We can improve conservation practice by making better use of the available evidence

The Conservation **Evidence** Toolkit has been created in collaboration with practitioners and decision makers to help embed evidence in conservation projects and deliver better outcomes for nature and people.

Here we describe a range of tools and resources that can be used during any conservation project. We have drawn from the Open Standards for the Practice of Conservation[1] to define the different stages of a project, and tools relevant to each stage are grouped together.

To find out more about how this Toolkit was co-designed with practitioners, policymakers, funders and academics, see our peer-reviewed paper[2].

Conservation Evidence

Providing Evidence to Improve Practice

QuickStart guide

Click here for a quick guide

1. Open Standards for the Practice of Conservation Version 4.0 2020 Licensed for use under Creative Commons Attribution-ShareAlike 4.0 Internation License
2. Smith *et al.* (2023) Co-designing a toolkit for evidence-based decision making in conservation: Processes and lessons. https://doi.org/10.1002/2688-8319.12269

Click to return to the home page

Click to explore each stage of a conservation project and the associated tools and resources

Click to return to this guide

For each project stage you'll find a brief description and a set of useful tools and resources

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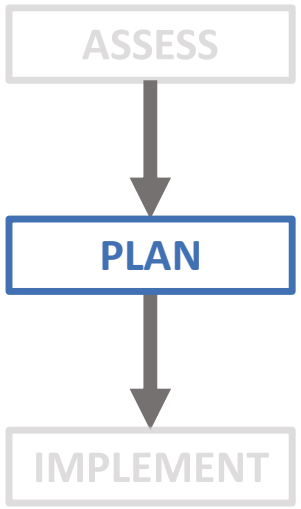

Planning involves:

- Developing a formal action plan
- Developing a formal monitoring, evaluation, and learning plan
- Developing an operational plan

Click on a tool to find out more

Useful tools and resources include:

- Conservation Evidence database
- Principles for evidence-based guidance
- Incorporating and reporting costs data
- Conservation guidance series

Get started

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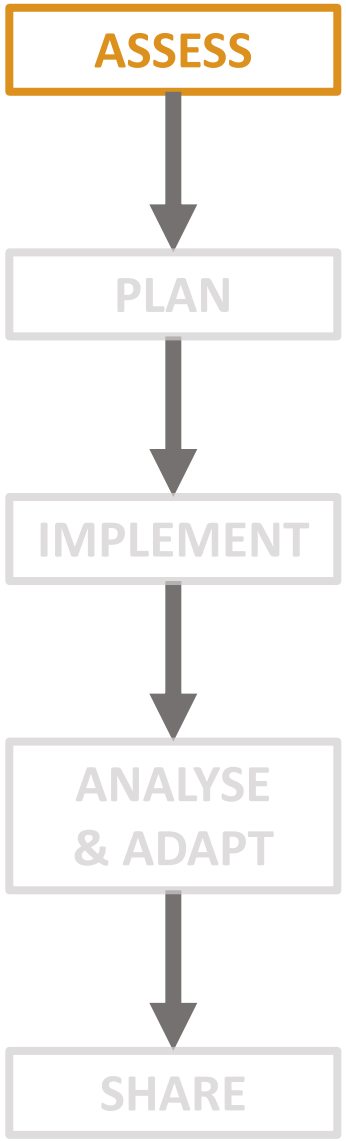
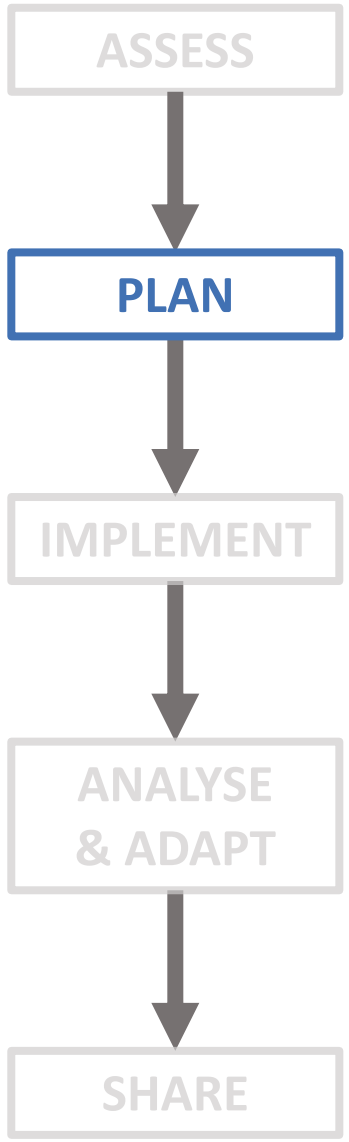


Assessing the situation involves:

- Defining your purpose and identifying a project team
- Defining your scope, vision and conservation targets
- Identifying critical threats
- Assessing the conservation situation

Useful tools and resources include:

- Evidence quality assessment
- Practical guide to evidence and decision making
- Checklists for better evidence use in practice
- Biodiversity strategy design for businesses
- List of global evidence sources



Planning involves:

- Developing a formal action plan
- Developing a formal monitoring, evaluation, and learning plan
- Developing an operational plan

Useful tools and resources include:

- Conservation Evidence database
- Incorporating and reporting costs data
- Guidance for embedding tests in practice
- Identifying testable knowledge gaps
- Practical guide to evidence and decision making
- Checklists for better evidence use in practice
- Principles for evidence use strategy
- Conservation Evidence Journal
- Principles for evidence-based guidance
- Conservation guidance series
- Evidence-to-Decision tool for decision making
- Biodiversity strategy design for businesses
- Evidence quality assessment
- Multi-criteria analysis for decision making
- Bespoke evidence synthesis

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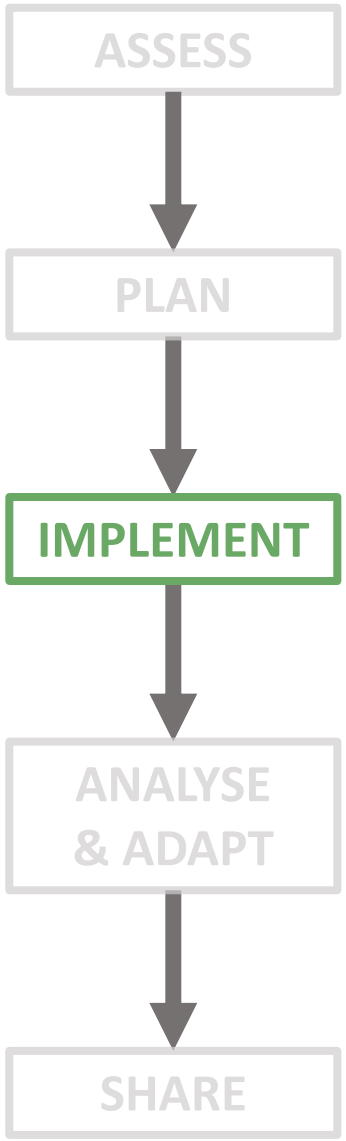
Open Standards for the Practice of Conservation



Implementing involves:

- Developing a detailed short-term work plan and timeline
- Developing and refining project budget
- Applying for and securing funding

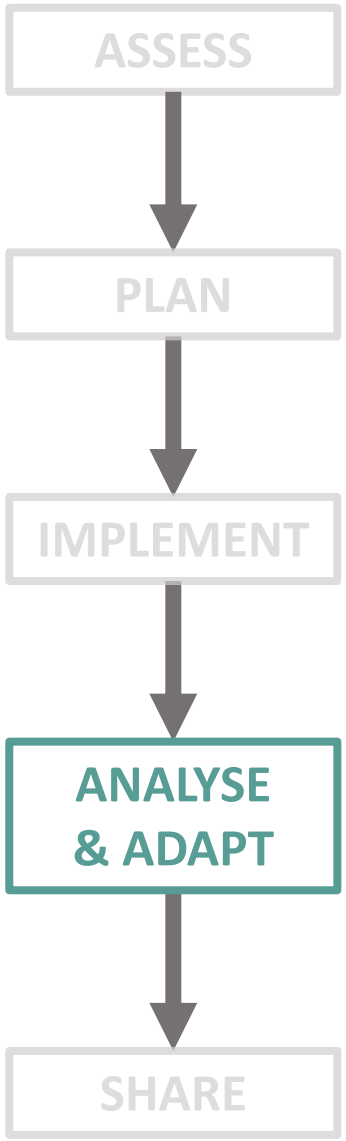
Useful tools and resources include:

Incorporating and reporting costs data

Mangrove Restoration Tracker Tool

Practical guide to evidence and decision making

Checklists for better evidence use in practice



Analysing & adapting involves:

- Preparing data for analysis
- Analysing and reflecting on results
- Adapting your strategic plan

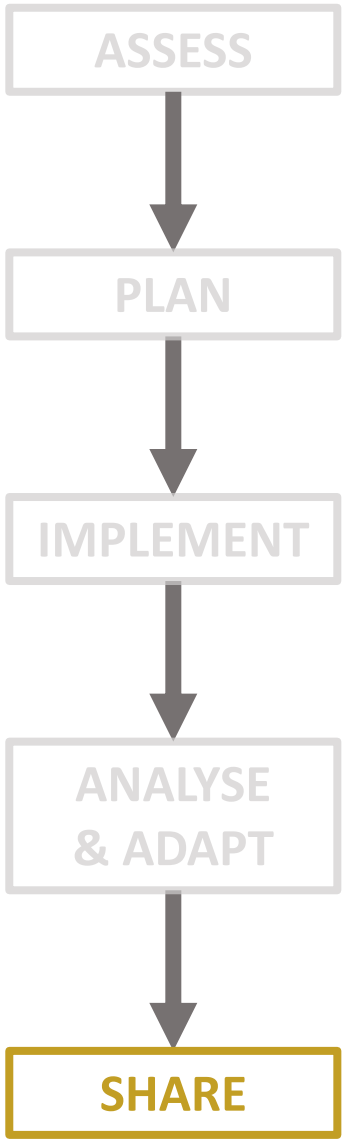
Useful tools and resources include:

Practical guide to evidence and decision making

Checklists for better evidence use in practice

Evidence quality assessment

Guidance for embedding tests in practice



Sharing involves:

- Documenting what you learn
- Sharing what you learn
- Fostering a learning environment

Useful tools and resources include:

- Incorporating and reporting costs data
- Mangrove Restoration Tracker Tool
- Conservation Evidence Journal
- Practical guide to evidence and decision making
- Checklists for better evidence use in practice
- Guidance for embedding tests in practice
- Principles for evidence-based guidance
- Conservation guidance series
- Evidence-to-Decision tool for decision making
- Evidence quality assessment
- Biodiversity strategy design for businesses
- Evidence use teaching materials

Conservation Evidence
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Tool: Conservation Evidence database

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Why do I need this tool?

Having rapid access to evidence for the effectiveness of conservation actions for your target species or habitat is vital when planning conservation projects. Access to this information will help you pick the right actions for achieving your project goals.

What does it do?

It provides free access to summarised, assessed evidence for the effectiveness of actions for conserving species groups and habitats from around the world (>9,000 studies reviewing almost 4,000 actions so far). Information is searchable and in an easily digestible format.

It can help you:

1. determine whether a specific action is effective (or not)
2. identify actions to mitigate against a specific threat
3. identify possible actions for a specific habitat or taxa
4. determine what actions have been tested for a specific species, habitat or country

When is it useful?

When making decisions about which actions to carry out for your target species or habitat. For example, for management plans, project proposals or funding applications.

Who can use it?

Anyone making decisions about how best to maintain or restore biodiversity.

How do you use it?

Search the database for actions, studies or by the subjects listed on the Home or Synopses page. See a short video here

Assessments of the evidence and key messages are also available in the free book *What Works in Conservation?*

You can also find evidence for actions to conservation different species directly from the IUCN Red List. For example, actions for the loggerhead turtle *Caretta caretta*.

Top tips

- **Start broad:** e.g. Consider checking all actions for bats before looking at a specific species.
- **Keep searches simple:** Avoid long phrases. Use 1–2 words or a genus name e.g. “bat box”, “burning”, “*Sphenodon*”.
- **Try searching synonyms or variants:** “Fire” vs “Burning”; “Translocation” vs “Reintroduction”.
- **Read before you decide:** Action pages contain lots of information e.g. species studied, location, implementation methods tested. Check if information is relevant to your system before making decisions.
- **Check we have covered your species group/habitat:** Not all have been covered; we are working hard to fill gaps! Check out “Synopsis” pages or search studies for your species.
- **Missing evidence:** Not all actions will have been tested for your species or habitat, but evidence for others is still useful for informing decisions, so search for relevant actions, not just your species.

Key links and references:

1. Conservation Evidence
2. What Works in Conservation?
3. Sutherland *et al*. (2019) https://doi.org/10.1016/j.biocon.2019.108199

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Tool: Incorporating and reporting costs data

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Why do I need this tool?

Accurate reporting of costs of conservation is important to keep track of finances, but also to assess the efficiency/cost-effectiveness of different actions. Understanding costs alongside information on effects and sharing with the wider community can help us prioritise limited resources and reduce effort on needlessly costly or suboptimal actions.

What does it do?

Our recommendations for reporting costs, and cost reporting workbook provide a framework to think through the costs of different actions, including different types of cost as well as financial benefits associated with actions.

It records information needed to record costs in a standardised way. This allows others to understand what was costed, assess cost-effectiveness of actions, and understand the relevance of the reported costs to different contexts.

When is it useful?

1. The costing workbook can be used to record costs of projects/actions in a standardised way either i) during planning to help understand costs, and ii) after implementation to record costs in a standardised way to help understand cost-effectiveness.
2. It can also be used to help report and disclose costs of actions/projects in a standardised way, helping others understand the costs of actions, and build a robust and comparable evidence base.

Who can use it?

The tool can be used by conservation practitioners, funders or researchers undertaking conservation actions or reporting on actions being undertaken or implemented.

How do you use it?

The tool is available for download here, as an Excel spreadsheet.

Top tips

- Record costs simply and in a standardised way to help record information on your project and assess cost-effectiveness.
- Use the tool to think through direct costs, as well as costs you may not have recorded formally but would be important for others thinking about doing the same thing (e.g., labour time)
- Have you thought about financial benefits or costs that have been avoided as a result of the action? The tool can help you think about these and assess the wider benefits of action.
- Share costs! Remember to share costs if possible. We often don't know how much actions cost, so this information can be really useful for wider conservation!

Key links and references:

1. White *et al.* (2022) https://doi.org/10.1111/csp2.12840
2. Workbook available here for recording costs

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Tool: List of global evidence sources

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Why do I need this tool?
Lots of decisions are made when starting a new conservation project. You will need to select a conservation focus or target, define a geographic or thematic scope, develop a project vision, and highlight key threats and opportunities for action. Having access to information and evidence relevant for these decisions will help guide the early stages of a project and get things off to the best possible start.

What does it do?
This list of global evidence sources covers a range of different topics, including evidence on important threats; the status of species, habitats, and other biodiversity indicators; the effectiveness of different conservation actions; and evidence relevant to social and economic issues. It also includes links to interactive maps for nature-based solutions and restoration projects, as well as resources and support for improving practice.

When is it useful?
When assessing the overall context of any new conservation project.

Who can use it?
Anyone (particularly decision makers) involved in the early stages of a new conservation project.

How do you use it?
Simply visit the page and explore the different resources that are available.

Top tips
- There isn't much to it really – just check out the list of sources!

Key links and references:
1. The list of sources

Tool: Mangrove Restoration Tracker Tool

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Why do I need this tool?

Conservation practice will only improve if we learn lessons from the successes and failures of the past. Key to this is sharing our findings and sharing them in a way that is useful for the rest of the community. This is easier said than done, as there are countless ways to record actions, gather monitoring data and report results. The solution is to capture and track projects in a standardised way, and this tool offers a simple, easy-to-use option for doing that for anyone working in mangrove restoration.

What does it do?

As a mangrove practitioner, you can add your projects to the Mangrove Restoration Tracker Tool: report pre-restoration baselines, any restoration actions you carried out, and results from your post-restoration monitoring. The multiple-choice format ensures that your findings can contribute to overall estimates of the effectiveness of different actions for mangrove restoration.

In the future, entered projects will be displayed on the Global Mangrove Watch platform.

When is it useful?

During the planning and implementation phases of your project, when you are gathering baseline data, carrying out your actions and monitoring the consequences. It also makes sharing your findings easy, and you can see the results of other restoration projects.

You can even report historical projects if you still have the data.

Who can use it?

Anyone in the project team can use this tool, and it is a great way to keep track of your progress.

How do you use it?

The tool has three main sections:

1. Register your project – enter details of the site, project aims, causes of mangrove loss and pre-restoration assessments.
2. Record your interventions and costs
3. Enter monitoring data – including management status, ecological status, and governance details.

The full guidance for using the tool can be found here, and you can sign up to register projects here.

Top tips

- Any sensitive data can be kept private, though an approximate site location will always be publicly visible.
- You can export your project data and open it as a spreadsheet to create graphs or other reports.

Key links and references:

1. Sign up to register projects
2. User guide
3. Global Mangrove Watch

Tool: Guidance for embedding tests in practice

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Why do I need this tool?

Testing actions, and using evidence is fundamental to ensuring conservation organisations are not carrying out actions that are costly, ineffective or worse, harmful. Organisations practicing evidence-based conservation have a responsibility to routinely embed testing into their practice. This will add to the existing evidence base and contribute new evidence for previously untested actions.

What does it do?

This tool guides you through the process of planning and carrying out tests of actions. The tool provides information on how routine testing of actions can easily become embedded into an organisation.

When is it useful?

This tool is useful at an organisation level when developing future management plans. Practitioners can embed a test within a site or organisation management plan. By embedding testing within an organisation ethos, carrying out tests on a regular basis becomes integral to the organisational structure.

Who can use it?

Those involved in managing the strategic plans for an organisation. Once embedded, practitioners can use the tool to plan individual tests. Testing is not restricted to conservation practitioners and the tool will help anyone within your organisation carry out a test of an action.

How do you use it?

Take a look at this diagram[1]. It helps identify when an experiment can be usefully included in conservation practice by considering three things:

1. Would improved understanding of an action inform management decisions?
2. Are the relevant skills accessible within the organisation?
3. Are plans amenable to including an experiment?

Table 2 provides guidance on setting up an experiment and, crucially, the number of experimental replicates that are appropriate.

Top tips

- Create a culture within your organisation that values testing and evidence-use.
- Plan your experimental design and ensure you have the appropriate number of replicates before carrying out the test.
- Discuss testing successes and failures with all staff involved.
- Publish the results (whether it worked or not).

Key links and references:

1. Ockendon *et al*. (2021) doi.org/10.1002/2688-8319.12069

Tool: Conservation Evidence Journal

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Why do I need this tool?

Sharing results and findings is crucial if conservation practice is going to improve. But many academic journals are not well suited to publishing the results of tests of conservation actions. Many are prohibitively expensive to publish in, and small scale, locally relevant studies can often be overlooked. This tool offers a solution to these problems, with a free, accessible place to publish any test of a conservation action.

What does it do?

The Conservation Evidence Journal provides a place for practitioners to publish studies that test the effectiveness of conservation actions. Articles are short, written in plain English, and include all the details needed (including costs) for others to repeat the action. It is also fully open access which means it's free to read and publish in, making it a great place to share results with the rest of the conservation community.

When is it useful?

It is useful to have a look at previously published articles whilst you are planning your project and deciding what action you want to carry out. Can you set up an experiment to test this action? Before you start your project, spend some time thinking about how you will share your results with other practitioners. Once the project is complete, and you have the results (including if they show the action was ineffective or, worse, harmful), you can submit an article to the journal.

Who can use it?

Anyone involved in carrying out tests of conservation actions can publish in the journal. In fact, one of the authors must have been involved in actually carrying out the action.

How do you use it?

Take a look at www.conservationevidencejournal.com where you'll find information about the journal and the latest articles. You will also find all previous articles available to read and download. When you click on the 'how to submit to Conservation Evidence Journal' button, you'll be taken to a page with all the information you need to submit your article. Have a look at the Guidelines for Authors to make sure your study fits the criteria. There is also a template you can use to help format your article.

Top tips

- When you're planning your project, think about how you will test the action and how you want to publish the results.
- Make sure your study is testing the effectiveness of a conservation action using an experimental design.
- Commit to publishing your results – even if the action didn't work or, crucially, was potentially harmful.
- Check the Guidelines for Authors to make sure your study fits the criteria for inclusion *before* you submit to the journal.

Key links and references:

1. The journal homepage
2. A guide to creating testable questions and 100 examples

Tool: Identifying testable knowledge gaps

Why do I need this tool?

Whilst large-scale actions are important, it is often the small tweaks that can make an immediate difference to conservation practice. There are gaps in the evidence for the effectiveness of small-scale conservation actions that could easily be filled by testing.

What does it do?

This tool helps you at the planning stage to incorporate one (or more) small-scale experiments into your practice. It helps you identify suitable questions and provides a list of 100 'testable' questions. You can select questions to test or use the list as a starting point to create your own tests of actions.

When is it useful?

These are small-scale tests that can be accomplished within an existing site management plan or by volunteers. A test can be incorporated into an annual management plan and used to inform future management of a site or tweak existing actions.

Who can use it?

This tool is especially useful to conservation practitioners who are actively involved in site management. It is also useful to anyone involved in preparing management plans for a site in order to include a test in the planning.

How do you use it?

The steps involve identifying a repeated process (e.g. planting trees, or treating invasive plants), coming up with ways it could be modified, and considering if an experiment can be implemented and monitored to test the effect of the different approaches.

Have a look at Figure 1 in this freely available paper[1] for all the details.

You can either select a relevant question from the list in the paper to test or use the list as a guide and design your own question.

Top tips

- Check to see whether there is existing evidence for your action and, if so, build on that work.
- Look at the list of 100 testable questions if you're unsure what makes a good 'test'.
- Use the P.I.C.O. method to form your question (details in the paper).
- Make sure your question is relevant to your site and make sure the results are measurable and involve a comparison – this can be between two different actions or an action vs. no action (control).

Key links and references:

Sutherland *et al*. (2022a) https://doi.org/10.52201/CEJ19XIFF2753.

Conservation Evidence
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Tool: Practical guide to evidence and decision making

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Why do I need this tool?

Properly embedding evidence in decision making can transform conservation. But how do you actually do it? There's lots to think about: framing problems and identifying solutions; identifying key stakeholders and building collaborations with communities; gathering evidence and communicating findings; making good decisions in the face of uncertainty[1]. It might seem a bit overwhelming. Fortunately, there is help at hand in the form of our free book, Transforming Conservation: A Practical Guide to Evidence and Decision Making.

What does it do?

This book makes the case that there are considerable problems with current decision making in conservation. It presents a range of "straightforward practical solutions" that can improve the use of evidence, improve decision-making, and embed evidence into practice.

When is it useful?

This tool will be useful at all stages of a conservation project.

Who can use it?

The book is free to access and will be of interest to anyone working in conservation. But it will be particularly useful for project and programme managers, conservation leaders and decision makers, and anyone else seeking to improve practice and drive change in the conservation sector.

How do you use it?

The book is structured around four main themes:

1. Recognising the problem (chapter 1)
2. Collating and assessing the evidence (chapters 2, 3, 4 & 5)
3. Making decision to deliver change (chapters 6, 7, 8, 9 & 10)
4. Transforming society by creating demand for evidence use (chapters 11 & 12)

You can find the whole book here.

Top tips

- You can download the book as a pdf or explore each chapter separately.

Key links and references:

1. Sutherland (2022) Transforming Conservation

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Tool: Checklists for better evidence use in practice

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Why do I need this tool?

For complicated tasks, remembering what to do and when to do it can be the difference between success and failure. Take aviation. There's lots to remember when flying a plane, and no one wants to get to 35,000 ft before realising they have forgotten to complete a crucial task. Conservation projects too are complicated, and to reach their many goals, practitioners and decision makers must complete lots of tasks, preferably in the right order. Checklists are a simple but effective tool to help.

What does it do?

Each checklist provides a list of actions that can be carried out to ensure processes are in place for evidence use when making decisions. They help your organisation, or you as an individual, measure and monitor what you currently do, and what you still need to do to improve evidence use. Checklists also help develop a culture of continuous quality improvement.

When is it useful?

As an audit of what you or your organisation routinely do to ensure evidence is used in decision making and therefore which areas need to be improved upon.

Who can use it?

There are seven checklists, each aimed at a different group of users:

- Evidence-based decision making
- Organisations
- Leaders
- Knowledge brokers
- Practitioners and decision makers
- Reports and advice
- Funders and philanthropists

How do you use it?

Select and download the most appropriate of the seven checklists. Mark all the actions that are routinely undertaken and consider whether you can adopt any of the actions you are missing.

Top tips

- Can you/your organisation provide documented evidence that you are undertaking checklist actions? Being able to prove that you are an evidence-based organisation could help with funding applications.
- Return to checklists regularly (e.g. at least annually), to ensure continuous improvement.

Key links and references:

1. A chapter on checklists in our free book
2. Link to download the checklists

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Tool: Principles for evidence use strategy

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Why do I need this tool?

Conservation projects likely involve hundreds of decisions, many of which need to be made quickly. Carefully considering all the available evidence for every decision is clearly not realistic and is actually unnecessary. The key is to recognise which decisions can be made quickly, and which require a more careful assessment. Getting this balance right means avoiding catastrophic errors in big decisions, without wasting time and resources on trivial ones.

What does it do?

This tool provides a framework for thinking about the types of decisions you need to make, and how much time you should spend making them. There are two main considerations:

1. How certain are you that a particular course of action is going to be effective?
2. What are the consequences of making the wrong decision?

If the consequences of a wrong decision are trivial, then there is little to lose by acting quickly. It may even be a good opportunity to learn something new. But where the consequences are substantial (including ecological, financial or reputation consequences), unless you are very confident that you know what you're doing, it's time to slow down and check the evidence.

The framework also sets out "seven levels of evidence assessment", and an approximation of the time needed to reflect on the evidence. From not considering the evidence (which takes no time at all!), to briefly reviewing some key papers (taking minutes to hours), to conducting a full systematic review of the evidence (which could take a whole year).

When is it useful?

When assessing the evidence needs for new and existing projects, particularly when working with the realities of limited resources.

Who can use it?

Conservation decision makers that are seeking to strike the right balance between acting in the face of uncertainty and assessing the available evidence.

How do you use it?

Consider 1) your level of certainty in the effectiveness of your course of action, and 2) the consequences of making a wrong decision. Use Figure 1 from the paper to look up the suggested level of evidence assessment. The higher the number, the more time you should spend checking the evidence.

Check Table 1 of the paper for a description of what each level of evidence assessment means, and approximately how long it will take (from no time at all, to minutes, to a whole year).

Top tips

- Check Box 2 in the paper for two real world examples of how organisations have used this framework to develop realistic plans for including evidence in decision making

Key links and references:

1. Sutherland *et al.* (2021) https://doi.org/10.1016/j.jnc.2021.125975

Tool: Principles for Evidence-based guidance

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Why do I need this tool?

Many conservation practices are implemented without thorough evaluation of available evidence, which can lead to uninformed or potentially harmful decisions. Evidence-based guidance provides a framework to ensure that actions are grounded in reliable data, helping to minimize risks and improve outcomes.

What does it do?

The Principles for Evidence-based Guidance offers a systematic approach for creating well-informed, reliable recommendations. This framework ensures that decisions are based on sound evidence, helping individuals and organizations make choices that are both effective and supported by the best available data.

When is it useful?

Integrating the creation and use of guidance into routine practices or decision-making processes ensures that best practices are followed consistently. This fosters a culture of evidence-based decision making and ensures that recommendations remain grounded in up-to-date evidence.

Who can use it?

Anyone who wants to create evidence-based guidance in conservation. It's useful for policymakers, practitioners, and others involved in making decisions that impact the environment and biodiversity.

How do you use it?

The principles provide a set of criteria for creating evidence-based guidance, which can apply to any conservation action about any species or habitat. These criteria are organised around two key steps: collating evidence and making recommendations.

The Conservation Guidance Series is an example of evidence-based guidance. It combines scientific evidence with practitioner experience and is structured in such a way that allows flexibility for the user depending on their specific needs.

Top tips

- **Provide sources**: Always back up recommendations with citations and a reference list, including links to original sources where possible.
- **Use neutral language:** Ensure that recommendations are framed as suggestions, not absolute directives. Avoid phrases like 'you should' or 'you must'.
- **Be transparent**: If evidence is conflicting or incomplete, acknowledge this openly.
- **Case studies**: Giving a real-world example helps to illustrate how an action can be applied in practice.
- **Updates:** Continually review and update the guidance to ensure it reflects the latest evidence and practices.

Key links and references:

1. Downey *et al.* (2022) https://doi.org/10.1111/csp2.12663
2. Conservation guidance series

Tool: Conservation Guidance Series

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Why do I need this tool?

In the context of conservation, every decision can have significant impacts on ecosystems and species. Using evidence-based guidance ensures that informed decisions are made about practical conservation to create more effective outcomes for biodiversity.

What does it do?

The evidence-based Conservation Guidance Series describes practical information and techniques for implementing individual conservation actions. It is informed by up-to-date scientific evidence, practitioner experience and expert opinion.

Each piece of guidance has a set structure and focusses on an individual conservation action. Multiple pieces of guidance can be collated into a series to cover a broader topic. This modular format allows for flexibility, while the set structure maintains consistency.

When is it useful?

When planning and designing a conservation project. It describes different approaches for implementing actions based on what has worked in similar situations. It also supports ongoing learning, as new knowledge can be continuously integrated into future guidance.

Who can use it?

Anyone involved in making decisions to effectively design and implement conservation projects. Whether you're a field conservationist working directly with ecosystems or a policymaker shaping conservation strategies at a broader level, evidence-based guidance provides a solid foundation for making informed decisions.

How do you use it?

Check out the evidence-based guidance series and read and download it all for free.

Top tips

- **Question the evidence**: Always assess the evidence behind the guidance. Does the guidance provide sources for its recommendations? Is the evidence up to date? Is the evidence unbiased and presented in a neutral way?
- **Monitor and evaluate:** If you implement actions from the guidance, track the outcomes using a robust experimental design to see if the intended results are achieved.
- **Stay updated:** Regularly check for updates and new guidance documents to ensure that your practices are always aligned with the latest evidence. Be prepared to adapt your approach as new evidence emerges.
- **Be aware of limitations**: Understand the scope and limitations of the guidance–what works well in one context may be less practical in another. For example, local topography or climate conditions may influence the effectiveness of a particular conservation action.
- **Consult with experts:** Make use of professional judgment and local expertise alongside guidance.

Key links and references:

1. Conservation Guidance Series

Tool: Evidence-to-Decision tool for decision making

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Why do I need this tool?

Evidence-based decision making at its best should be comprehensive and transparent. Comprehensive meaning that relevant evidence from the full diversity of sources was considered. Transparent meaning that others can see how that evidence was used to justify the decision. This tool guides conservation practitioners through the process of making an evidence-based decision with the aim of improving decision making and improving outcomes for conservation.

What does it do?

The tool guides practitioners through the decision-making process in three key steps: defining the context, gathering the evidence, and making a decision. In documenting your project goals, potential actions for achieving those goals, and the relevant evidence for each of those actions, you will have a full report of your decision-making process, including next steps for implementation and monitoring. You can even include considerations like costs and feasibility.

When is it useful?

During the planning stage of any conservation project, particularly those in which a range of potential actions could be implemented to achieve the project goals.

Who can use it?

While any conservation decision maker can use this tool, it may be best suited to individual landowners, reserve managers or small NGOs looking to make evidence-based decisions around specific projects or issues.

How do you use it?

Access the tool here, where you can also find the user guide and an offline template, which you can customise to your needs. You will enter information about the three main steps of your decision:

1. Defining your decision context – including the conservation target, ultimate goals, and the relevant ecological and social context.
2. Gathering your evidence – including identifying potential actions, assessing costs, feasibility and acceptability.
3. Making a decision – including weighing up the evidence for different actions, making decisions, providing justification, and documenting and reporting the decision.

All the information you enter will be used to create a summary report that you can download.

Top tips

- Take the time to carefully consider your ultimate goals. For example, is your goal to control mink or conserve water voles? The answer to that will almost certainly determine what actions you should take.
- Be sure to 'Bookmark' your work regularly when using the online tool. You don't want to lose any progress!

Key links and references:

1. The Evidence-to-Decision tool
2. Christie *et al.* (2022) https://doi.org/10.1111/csp2.579

Conservation Evidence
Providing Evidence to Improve Practice

Tool: Biodiversity strategy design for businesses

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Why do I need this tool?

Businesses can mitigate their impacts on biodiversity and contribute towards nature recovery, but the actions taken must be based on solid evidence. This improves the likelihood that conservation outcomes are achieved, and reduces the ecological, business and financial risks associated with suboptimal or ineffective action.

What does it do?

The tool sets out six helpful principles that a business can use to guide effective, evidence-based biodiversity strategies. While it is not prescriptive as to the actions that should be taken for different business' strategies, the principles can be used to guide the development of such strategies and to ensure that actions taken are effective for conservation.

When is it useful?

These principles are useful to help assess if guidance or strategy design is based on robust evidence and likely to deliver conservation outcomes. Either for reviewing existing strategies, or for developing new strategies for mitigating impacts.

Who can use it?

The tool can be used by **businesses** developing their biodiversity strategies to ensure they are evidence-based. It can also be used by **consultants** who are providing advice to businesses to ensure their statements and recommendations are robust and based on a solid evidence base.

How do you use it?

Businesses can adopt the six principles for developing evidence-based biodiversity strategies:

1. Evidence use is mainstreamed across business operations
2. Evidence is collated and appraised to guide decision making
3. Evidence use is documented and based on clear processes
4. Baselines, actions and impacts are documented and reported
5. Monitoring is effectively implemented and supports adaptive management
6. Information is shared to strengthen the evidence base

Top tips

- Embedding these principles early in strategy design can help improve effectiveness, reduce costs spent on ineffective action or the costs to reach given biodiversity targets.
- Use these principles as a basis to assess whether current practice is evidence-based e.g., have we documented our assumptions clearly? Is there a clear reference to evidence where needed?
- The principles can also help you think through where it may be possible to work with researchers to improve the evidence base (e.g., what actions do we need to test?) and help share data to benefit the wider conservation community.

Key links and references:

1. Blog post - how to ensure that businesses can deliver for nature
2. White *et al*. (2023) https://doi.org/10.1002/bse.3389

Conservation Evidence
Providing Evidence to Improve Practice

Tool: Evidence quality assessment

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Why do I need this tool?

Some approaches to gathering and assessing evidence don't represent the full variety of what is out there. Local forms of evidence are often neglected (e.g. local and traditional knowledge, expert judgements and experience). If this information is missed, conservation projects may suffer the consequences of poor decision making.

Part of the challenge of incorporating an appropriate set of available evidence into decision making is a lack of approaches for assessing and weighing up the evidence; particularly where there are questions around the quality and relevance of evidence.

This tool provides an intuitive, transparent approach to assessing all types of evidence, and can reveal the level of confidence decision-makers should have in different aspects of conservation projects.

What does it do?

The tool is based around the idea that the success of any given conservation project is underpinned by a set of **assumptions** – if they hold, the project is likely to achieve its goal(s), if not it'll likely fail. You can then gather evidence to test each of these assumptions. For any piece of evidence, you assess the **strength of support** for the assumption and the **weight of evidence**. You can then see the overall balance of evidence and see if your assumption is supported or refuted.

When is it useful?

In the early stages of conservation projects when assessing the current situation and planning your interventions, but also for analysing your own data, reflecting on and sharing your findings.

Who can use it?

The tool can be used by individuals through to a whole project team.

How do you use it?

Assess whether the evidence supports to assumption e.g. Strong support, Mixed support, Refutes.

Assess the weight of evidence by scoring **Relevance** (how useful it is for your context), **Source reliability** (how credible it) and **Information reliability** (how rigorous it is). Multiply up the three scores to give the **weight of evidence**.

Place evidence on a 'seesaw'. Its position is determined by its strength of support. Its size by its weight. You can then visualise the distribution of evidence – and think about which way it tips!

You can carry out this process on your own or in a group, using sketches/post it notes, or using our online platform to generate a 'Ziggurat plot'.

Top tips

- When working as a group, ensure you are scoring consistently. Discussing a few examples or taking the median/average of everyone's scores are potential ways of working in practice.
- You can score relevance and reliability out of 3, 5 or whatever makes sense for you. But carefully consider whether to include zero scores. Giving a score 0 for any of the three criteria will effectively remove that piece of evidence from your final assessment – it means you are judging it as either irrelevant or not to be trusted.
- Depending on your assumption, you may wish to try different scales for the strength of support. For example, you could just define two categories (Supports vs Refutes), or even more categories (Strong support, weak support etc.).

Key links and references:

1. Online tool for evidence quality assessment
2. Christie *et al.* (2023) https://doi.org/10.1111/csp2.13024

Tool: Multi-criteria analysis for decision making

Why do I need this tool?

Most conservation projects have more than one objective. For example, in addition to restoring an area of habitat or managing a range of ecosystem services, the project must keep within budget, satisfy local stakeholders, and potentially navigate a range of other social and political considerations. Choosing management interventions that lead to satisfactory outcomes across all these criteria can be challenging, but multi-criteria analysis offers a structured, transparent approach to decision making that can incorporate the best available evidence.

What does it do?

Once the criteria for a successful project have been established, and management options shortlisted, multi-criteria analysis allows decision makers to clearly see how well each option performs against each criterion. For example, agricultural land managers could compare how well interventions like adding manure to soils, growing cover crops or reducing tillage perform with regards to crop production, soil regulation and biodiversity conservation[3]. A consequences table is a handy tool for setting out this information and contains all of the essential elements for making a well-informed decision.

When is it useful?

When making decisions about which actions to carry out to meet a range of different project criteria or achieve a range of objectives. For example, objectives around ecological, economic, and social issues.

Who can use it?

Anyone making decisions about how best to meet a range of criteria or reach multiple project objectives.

How do you use it?

Decide on a set of project criteria and performance measures, and a list of alternative management actions. For all management actions, use the best available evidence to estimate the performance measure against each criterion.

Populate a consequences table with the results and use it to make a decision. A range of approaches can be used for decision making, including finding the “dominant alternative”, excluding unacceptable options, excluding redundant criteria, and removing “dominated alternatives”[1]. Where there is no clear winner, there are a range of options for addressing trade-offs.

We have also produced a dedicated tool for carrying out multi-criteria decision analysis for Mediterranean-type farmland and rangeland, available here.

Top tips

- One management option should always be to do nothing or continue with the status quo. It is important to understand whether alternative options are better than what is already being done.
- Where possible, choose performance measures that directly measure the thing you are interested in.
- When estimating performance measures, include information on the precision of your estimate e.g. confidence intervals, or a subjective credible interval.

Key links and references:

1. A guide to multi-criteria analysis
2. Multi-criteria decision analysis for Mediterranean-type farmland and rangeland
3. Shackelford *et al*. (2019) https://doi.org/10.3389/fsufs.2019.00083

Conservation Evidence
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Tool: Bespoke evidence synthesis

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Why do I need this tool?

What is missing from the field of meta-analysis is the ability of decision makers to answer the question “How effective is this intervention in my specific context?". The lack of context-specific evidence is a problem in evidence-based decision making. This tool allows you to conduct ‘dynamic meta-analysis’ – creating bespoke analyses on the evidence that matters most to you. Currently the tool predominantly focuses on invasive alien species management.

What does it do?

Metadataset is a tool that provides a platform to perform meta-analyses on the effectiveness of actions to manage and eradicate invasive species listed by the European Union Species of Concern.

It can:

- Allow you to filter data for analysis by species, location, control mechanism and the outcome that was measured
- Automatically produce forest plots for simple graphical interpretation of results
- Provide the ability to downweigh studies that may not be relevant to your circumstances
- Give you downloadable .csv files of raw results for further analysis
- Provide analysis of publication bias and raw model outputs from R

When is it useful?

When making decisions about how to most effectively manage or eradicate an invasive species.

Who can use it?

Anyone can access and use it. However, it is best used by someone with a basic understanding of meta-analysis techniques.

How do you use it?

The app has several filters and options to interrogate and interact with our database of scientific studies that have tested interventions. Use the dropdown filters to select your species/interventions/geographies of interest and then click ‘get your results’.

See short video here.

Top tips

- Results are most interpretable when selecting either a single species (or a group of related species), or a single intervention
- Make sure that the y-axis (comparison variable) is set correctly. You want to set this to be the thing you want to compare between (different intervention techniques, species, measured outcomes or geography)
- Read the explanatory paragraph produced below your plot to assess the significance of your result
- Some species may only have one intervention tested for their control, results with fewer than five studies contributing to the effect size should be treated with caution

Key links and references:

1. Metadataset homepage
2. Jump in and explore actions for invasive species here
3. Shackleford *et al*. (2021) https://doi.org/10.1186/s12915-021-00974-w
4. Martin *et al*. (2020) https://doi.org/10.1186/s13750-020-0186-y

Tool: Evidence use teaching materials

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Why do I need this tool?

Gathering, assessing and embedding evidence in decision making requires a diverse set of skills, but a lack of training and support can be a barrier to many in the conservation sector. Building the capacity of individuals and organisations for critical thinking and good decision-making will be key to meeting the conservation challenges of the future.

What does it do?

These teaching materials cover the key skills for evidence-based conservation:

1. Identifying problems and formulating questions
2. Finding and appraising the available evidence
3. Applying evidence-based decisions while considering costs, values and experience
4. Incorporating evidence into future monitoring, evaluation and management

They also cover topics such as planning and designing experiments, systematic reviews and meta-analysis, and conservation translocations.

When is it useful?

These teaching materials will be useful as part of a bigger drive towards developing a culture of evidence use in conservation. While originally designed for use in university courses, they could easily be incorporated into staff inductions and training courses within conservation organisations.

Who can use it?

Materials can be used directly by 'learners' or trainees but can also be delivered as part of a course, workshop, lecture series, or training event.

How do you use it?

You can access all the teaching materials here. They include lectures, handouts, workshop suggestions, assessments, exercises, reading lists and useful link.

They are free of copyright, can be used as they are, or modified in any way that is helpful for your teaching and learning needs. They have also been translated into Chinese, Finnish, French, Italian, Japanese, Malay, Portuguese and Spanish.

Top tips

- Consider adding a new lecture or training session on evidence-based conservation to your courses or training programmes.
- Try combining with some of your existing teaching and training materials to make it more relevant to your own organisation.

Key links and references:

1. Teaching materials
2. Downey *et al.* (2021) https://doi.org/10.1002/2688-8319.12032