

Sustainability and Environmental Advisory Panel

AGENDA – 21 NOVEMBER 2023

Sustainability and Environmental Advisory Panel (SEAP)

Date & Time:	21 November 2023 - 5:00pm
Location:	Council Chambers, 21 Saunders Street Wynyard
Council Representatives:	Cr Celisa Edwards (Chair), Cr Andrea Courtney (Deputy Chair)
Members:	Brenton Hosking, Colin Hocking, Fiona Loughran, Hannah Sadler, Ian Ferris, Ian Newman, Peter Lawrence, Robin Krabbe, Sarah Smith, Wendy Bryant
Staff in Attendance:	Daniel Summers, Dana Hicks, Kassandra Steward, Bill Walker
Guest Presenter:	5:00pm Kylie Ashley – Regional Cat Management Coordinator Cradle Coast NRM 5:30pm Veronika Tietz, CHC Environment and Sustainability Manager

1 WELCOME

- Ensure a quorum is achieved before opening up to official business.
- Take note of opening time

2 CONFIRM MINUTES

- Motion to confirm minutes from previous meeting.

3 CAT MANAGEMENT IN TASMANIA – KYLIE ASHLEY

Kylie Ashley, Regional Cat Management Coordinator from Cradle Coast NRM will present a summary of amendments to the Cat Management Act and what they mean, the desexing program followed by some Q&A.

4 SUSTAINABILITY AND THREATS TO FOOD SECURITY – VERONIKA TIETZ

Veronika Tietz, Environment and Sustainability Manager for Circular Head Council will present information on sustainability and threats to food security in the region followed by some Q&A.

5 BALLAD AVENUE UPDATE – P. LAWRENCE

Brief update on Ballad Avenue options for further consideration before a recommendation can be made to council.

6 BICYCLE PATHS WYNYARD – P. LAWRENCE

Brief overview on cycle path and options for consideration.

7 WILDLIFE CORRIDORS DISCUSSION RECAP – C. HOCKING

Brief recap of discussion and discussion to determine next steps in developing a Wildlife Corridor Policy and Strategy.

Sustainability and Environmental Advisory Panel

AGENDA – 21 NOVEMBER 2023

8 ACTION PLANS FOR PARKS AND RESERVES – B. HOSKING

The WWC minutes show multiple action plans for works in our parks and reserves. Many show... "no environmental impact". The discussion point is whether the management of our open spaces would be enhanced if the SEAP were invited to comment on/review the potential environmental consequences for their implementation while these plans are still in the planning stage.

9 STANDARDS OF PRACTICE TO GUIDE ECOSYSTEM RESTORATION – B. HOSKING

As the SEAP looks to develop a proposal to create a whole of business strategy for WWC vegetation management can the SEAP discuss the merits of ensuring new plantings enable the reintroduction of local sourced species in order to foster biodiversity in our community spaces in line with best practices in vegetation management.

10 TASMANIAN THREATENED SPECIES STRATEGY DISCUSSION PAPER

The Department of Natural Resources and Environment (NRE Tas) is developing a new Threatened Species Strategy to guide Tasmania's actions to support our plants and animals to survive in the wild.

The [Discussion Paper](#) is the first step in a comprehensive process to develop a new Strategy. In developing the new Strategy NRE Tas will consider how they can improve knowledge and tools, and understand emerging threats including climate change, invasive species and new diseases.

NRE Tas encourages all to have a say on how Tasmania can protect, recover, and value our threatened species now and into the future. Opportunity for feedback on this first stage is open for public consultation until **5 pm, Friday 22 December 2023**.

11 UPDATE ON RECOMMENDATIONS TO COUNCIL

- Recommendations list included in this agenda at page 8.

12 REVIEW OF ACTIONS LIST

- Actions list included in this agenda at page 3.

13 UPCOMING MEETINGS 2024

- 20 February 2024 at Council Chambers
- 16 April 2024 at Council Chambers
- 18 June 2024 at Council Chambers

14 GENERAL BUSINESS

- Call for members to raise other general business.

15 CLOSURE

- Take note of closing time

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

Action List as at 19 September 2023

No.	Action	Meeting	Responsibility	Due	Status
1	Review meeting frequency at the third official meeting of the group (six months).	31 Jan 23	Group	16 May 23 19 Sept 23	Not Started / Deferred
5.	Form a subgroup looking at a weed reduction program including education and transfer of knowledge into Council a strategy.	21 Mar 23	F. Loughran, B. Walker & C. Hocking	For July meeting	In Progress
7.	Seek further information on possible funding for waste education through the state government.	21 Mar 23	Cr. A. Courtney & D. Summers	For July meeting	In Progress
8.	Adjust and reorganise the Action Plan produced as part of the January brainstorming session. Soft copy of native file to be provided.	21 Mar 23	C. Hocking, Cr C. Edwards, D. Summers & K. Steward	For July Meeting	CLOSED
9.	Provide an outline of a food security proposal for the group to consider actions for.	21 Mar 23	R. Krabbe, H. Sadler, W. Bryant & S. Smith	For July meeting	Complete – Superseded by Action 24 taken at July meeting
10.	Provide examples and case studies to assist progress for easily achievable Community adaptation and resilience projects. E.g., Camp Creek, Inglis River <ul style="list-style-type: none"> B. Hosking to follow up and provide examples to group for consideration. 	21 Mar 23 19 Sept 23	B. Hosking & C. Hocking	For July meeting Before Nov meeting	In Progress
14.	Wildlife corridor concepts and management including threatened species (urban greening links/corridors) – Research and provide case studies for the group's consideration.	21 Mar 23	W. Bryant. I. Ferris & P. Lawrence	For Sept meeting TBC	In Progress

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

No.	Action	Meeting	Responsibility	Due	Status
16.	Provide information on the shared environmental officer discussion with Cradle Coast Authority. <ul style="list-style-type: none"> Assess the needs of/for an environmental officer, both strategic and day to day. W. Bryant to pull together a job specification for type of environmental officer position that would be useful at Council. 	21 Mar 23	P. Lawrence	Before May meeting	Complete
		16 May 23	D. Hicks / D. Summers	For review at Sept meeting	In Progress
		19 Sept 23			
19.	C. Hocking, P. Lawrence and I. Ferris to collate and summarise best practice tree and other vegetation policy framework and send to D. Hicks and D. Summers to review and consider. Resulting documents to be tabled at the following SEAP meeting for consideration before making recommendations to Council.	16 May 23	C. Hocking P. Lawrence I. Ferris D. Hicks D. Summers	For July meeting	Complete – Superseded by Action 26 taken at July meeting
20.	D. Hicks to provide to SEAP members information including natural values found on site at Ballad Avenue to help inform members ideas on land use.	16 May 23	D. Hicks	Before July meeting	Not Started
21.	SEAP members to review Ballad Avenue information and provide in return ideas for possible land use at Ballad Avenue. <ul style="list-style-type: none"> Investigate the possibility of a Tiny Forest option - opportunity to implement w/ the High School Green Team in this location if appropriate. 	16 May 23	Group	For July meeting	In Progress
		18 July 23	S. Smith	For Sept meeting	In Progress
22.	D. Hicks / D. Summers to look into bringing a wildlife corridor strategy into the planning process.	16 May 23	D. Hicks & D. Summers	TBC	In Progress
23.	Group to consider the pause places programme and provide feedback and/or endorsement to the Cradle Coast Authority representative out of session and prior to the September meeting. <ul style="list-style-type: none"> D. Summers to provide the identified Pause Place pilot options to the group. 	18 July 2023	Group	By Sept meeting	Complete
		18 Sept 2023			

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

No.	Action	Meeting	Responsibility	Due	Status
24.	Food security subgroup to provide further updates on the food security proposal development, including initial action recommendations for consideration. - Supersedes Action 9 for progress	18 July 2023	R. Krabbe, H. Sadler, W. Bryant & S. Smith	For Sept Meeting	In Progress
25.	S. Smith to provide a link to the “tree plotter” product / website.	18 July 2023	S. Smith	Before Sept Meeting	In Progress
26.	Group members to provide a finalised version of a Vegetation Strategy scope document for review of group ready for recommendations to Council. - Supersedes Action 19 for progress. • Group to review the Vegetation Management Strategy outline and determine whether to make a recommendation to submit to Council out of session NLT 22 September.	18 July 2023 18 Sept 2023	C. Hocking P. Lawrence I. Ferris D. Hicks D. Summers	For Sept Meeting	In Progress
27.	K. Steward & D. Summers to provide a finalised version of the SEAP Action Plan to members out-of-session for agreement prior to going to Council for endorsement.	18 July 2023	K. Steward, D. Summers	Prior to Aug Council Meeting	In Progress
28.	I. Newman and H. Sadler to provide Sisters Beach toolkit/education options for discussion at the September meeting with the intent of producing a community introduction and education campaign focusing on Sisters Beach. • F. Loughran to provide updates from current toolkit for group input and potential recommendation, working in consultation with C. Hocking.	18 July 2023 18 Sept 2023	I. Newman, H. Sadler	For Sept meeting	In Progress
29.	Subgroup (S. Smith, P. Lawrence, I. Ferris and R. Krabbe) to explore, map and make recommendations on Ballad Avenue to SEAP which will inform recommendations to Council at September meeting.	18 July 2023	S. Smith, P. Lawrence, I. Ferris, R. Krabbe	For Sept meeting	In Progress

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

No.	Action	Meeting	Responsibility	Due	Status
30.	D. Summers to resend the small community solar paper for SEAPs review and consideration. <ul style="list-style-type: none"> D. Summers to circulate original Infra Wild letter and associated documents for SEAP review and consideration. 	18 July 2023 18 Sept 2023	D. Summers	Before Sept meeting	Complete
31.	H. Sadler to provide a copy of a 2 page report from the Climate Council on bioenergy.	18 July 2023	H. Sadler	Before Sept meeting	Complete
32.	B. Walker to organise an information session on the move from the Weed management Act to the Biodiversity Act. <ul style="list-style-type: none"> B. Walker to circulate report on the move from the Weed Management Act to the Biosecurity Act once available. information sessions may then be organised, if required. 	18 July 2023 18 Sept 2023	B. Walker	TBC	In Progress
33.	R Krabbe to circulate key points for a response to the Tasmanian Government Sustainability Strategy Consultation for the group to make comment on.	18 Sept 2023	R. Krabbe	Before 27 Sept	New
34.	Group to respond to (above action) NLT 27 September so that a cohesive response can be prepared and submitted by consultation close on 6 October.	18 Sept 2023	SEAP Members	By 27 Sept	New
35.	D. Summers to invite CHC Environmental Compliance Manager to the next SEAP meeting for consultation on threats to food security.	18 Sept 2023	D. Summers	For Nov Meeting	New
36.	W. Bryant to provide details on climate impact for policy view.	18 Sept 2023	W. Bryant	By Nov Meeting	New
37.	D. Summers to circulate to the SEAP, the Inglis River Walking Track Study report for review and discussion at the next meeting.	18 Sept 2023	D. Summers	By Nov Meeting	New
38.	C. Hocking to send sequencing details to members for discussion at next meeting.	18 Sept 2023	C. Hocking	By Nov Meeting	New
39.	B. Walker to source and circulate the Gondwana Link process and mapping doc to members for reference and guidance.	18 Sept 2023	B. Walker	By Nov Meeting	New

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

No.	Action	Meeting	Responsibility	Due	Status
40.	H. Sadler to send a link to the regional strategy on the NRM site to members for reference.	18 Sept 2023	H. Sadler	By Nov Meeting	New
41.	D. Summers to source responses to questions of oversight, development, and staff involvement for the creation Vegetation Management Strategy to be discussed at the November meeting.	18 Sept 2023	D. Summers	By Nov Meeting	New
42.	B. Walker to provide Council's current education documentation around cats in the municipality.	18 Sept 2023	B. Walker	By Nov Meeting	New
43.	B. Walker to circulate a recent news story about cats from Clarence Council.	18 Sept 2023	B. Walker	By Nov Meeting	New
44.	B. Walker to provide a discussion paper on cats and cat management for the next meeting.	18 Sept 2023	B. Walker	By Nov Meeting	New
45.	B. Walker to invite a regional cat management coordinator from NRM to present on cat management in the region.	18 Sept 2023	B. Walker	For Nov Meeting	New
46.	K Steward to construct a comment for SEAP members to consider for inclusion with a media release in relation to the Plastic Free Places program and the Tulip Festival.	18 Sept 2023	K. Steward, SEAP Members	By 26 Sept	New

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

Updates for Recommendations to Council as at 18 September 2023

No.	Recommendation	Meeting	Update	Outcome
4	SEAP recommends Council to investigate opportunities for greater take up and usage of the Home Energy Audit Toolkit (HEAT).	16 May 2023	<p>18/06: An update on the initial list of pledges chosen by Council were relayed to the group. These include;</p> <ul style="list-style-type: none"> • Install renewable energy (solar PV and battery storage) on council bldgs. • Roll out energy efficient lighting across the municipality. • Develop procurement policy to ensure the practices of contractors and financiers align with councils renewable energy, energy efficiency and sustainable transport goals. • Support the local community to develop capacity and skills to tackle climate change. • Provide fast charging infrastructure throughout the city at key locations for electric vehicles. <p>18/09: It was noted that the kit that Council have in house is a bit out of date and requires renewal before progressing with education and use in the community.</p>	In Progress
5	SEAP recommend Council request a speed limit reduction for Sisters Beach Road from the Transport Commissioner.	16 May 2023	<p>Traffic Counters will be placed on Sisters Beach Road before the end of July in order to present necessary data to Council and the Transport Commissioner.</p> <p>18/06: Traffic data is being collected and assessed which will go to the next Council meeting.</p> <p>18/09: Road counters are still out gathering data which will be key in progressing through Council and for any request being submitted to the Transport Commissioner for consideration.</p>	In Progress

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

No.	Recommendation	Meeting	Update	Outcome
6	SEAP recommend Council consider extending the virtual fencing along Sisters Beach Road	16 May 2023	<p>18/06: Initial discussion with Parks & Wildlife has occurred, they have suggested that the request makes sense though proper data is needed to back up the proposal.</p> <p>B. Walker advised that when required in Circular Head, they hired a consultant to check, pick up and record roadkill incidents in order to supply evidence based data for their request.</p> <p>It was suggested that with the introduction of the fencing, devils, and other fauna, have undergone behavioural changes and shifted their movements and/or habits towards unfenced areas of Sisters Beach Road; this in turn has seemingly led to more visibility of roadkill in some locations where it may previously have been spread over a wider area.</p> <p>There is currently a roadkill application in place for Sisters Beach, but it was noted that it requires more consistency of use for the data to be deemed realistic. It was suggested that education and more community awareness around the roadkill app may help to rigourise the information to back up a fence extension request. Additionally, the data collected includes information about all roadkill incidents to the area, not just devils, increasing its practicality.</p> <p>It was suggested that perhaps an information campaign could be run though the Council Comms Officer to include the Sisters Beach community tool kit. I. Newman and H. Sadler advised they could provide some options that could be discussed as an agenda topic at the next meeting.</p> <p>18/09: The group were advised that the data collection needs in order to progress this recommendation are quite rigorous and will require extensive effort to back up the proposal. It</p>	In Progress

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

No.	Recommendation	Meeting	Update	Outcome
			<p>has been suggested that the proposal will need about 2 years' worth of detailed data.</p> <p>A suggestion was made that Council could collaborate with Circular Head Council on possible funding to assist with data gathering.</p> <p>The data gathering discussion led to questions on the current fencing. The question was raised whether the polls and batteries on the fencing were regularly being maintained. The advice given was that they are being maintained and that the batteries are being replaced this year.</p>	
7	SEAP recommend Council identify and facilitate mapping of food security based partnerships.	18 Sept 2023		
8	SEAP recommend the group along with Councillors attend various communities (e.g. Waratah, Somerset, etc.) to visit and expand the focus areas of interest.	18 Sept 2023		

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

INFORMATION FOR DISTRIBUTION

ATTACHMENTS LIST:

1. Ballad Avenue Update
 2. Bicycle Paths Wynyard
 3. Standards of Practice to Guide Ecosystem Restoration
 4. Wildlife Corridors Discussion Recap and Biodiversity Corridors For Waratah-Wynyard Council paper
 5. Consultation Open: Tasmanian Threatened Species Strategy Discussion Paper
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1 BALLAD AVENUE UPDATE PAPER

- The Waratah-Wynyard Council invited SEAP to consider alternative options for the Ballad Avenue Recreation Reserve. The content of this update is presented to SEAP for consideration and formulation of a recommendation to Council.

2 BICYCLE PATHS WYNYARD

- For consideration towards a recommendation to Council.

3 STANDARD OF PRACTICE TO GUIDE ECOSYSTEM RESTORATION

- As the SEAP looks to develop a proposal to create a whole of business strategy for WWC vegetation management can the SEAP discuss the merits of ensuring new plantings enable the reintroduction of local sourced species in order to foster biodiversity in our community spaces in line with best practices in vegetation management.

4 WILDLIFE CORRIDORS DISCUSSION RECAP

- Summary of discussion around wildlife corridors at September meeting (to be read in conjunction with the Biodiversity Corridors document, attached).

5 CONSULTATION OPEN: TASMANIAN THREATENED SPECIES STRATEGY DISCUSSION PAPER

- The Department of Natural Resources and Environment Tasmania (NRE Tas) is developing a new Threatened Species Strategy to guide Tasmania's actions to support our plants and animals to survive in the wild.
- This Discussion Paper is the first step in a comprehensive process to develop a new Strategy. In developing the new Strategy NRE Tas will consider how they can improve knowledge and tools, and understand emerging threats including climate change, invasive species and new diseases.
- NRE Tas encourages you to have your say on how Tasmania can protect, recover, and value our threatened species now and into the future. Opportunity for feedback on this first stage is open for public consultation until **5 pm, Friday 22 December 2023**.
- LGAT encourages Councils to review the discussion paper and lodge feedback. LGAT will not be lodging a submission on behalf of the sector.

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

Attachment 1: Ballad Avenue Update

Ballad Avenue update

The Waratah-Wynyard Council meeting of 2 June 2023 invited SEAP to consider alternative options for the Ballad Avenue Recreation Reserve.



At the July SEAP meeting, a sub-group of SEAP members was nominated to collate ideas.

An initial on-site meeting on 1 September to discuss options for Ballad Ave only attracted 4 persons and most key stakeholders were not present.

Therefore, Peter Lawrence approached Jenny Donovan, regional planner with Cradle Coast Authority, to enquire if she could help SEAP develop concept plans for the site. Jenny has extensive experience in open space masterplans including the Waratah-Wynyard Council settlement strategy. Jenny responded positively in an email to Daniel Summers outlining a process to proceed.

At first glance the site would make a very good open space/environmental education asset. I have attached the first thoughts Peter has kindly compiled.

To this end can we have a chat about the options to come up with a masterplan or concept plan that we might leverage for future funding.

I envisage this could be done through a process that had as its core elements:

1. Background research,
2. Community consultation,
3. Design workshop,
4. Concept preparation
5. Refinement
6. Publication

With the depth that we go into each of these steps to be based on funding resources, etc. If you think this is worth pursuing let me know and I will organize a teams meeting to discuss scenarios for proceeding.

Daniel agreed the proposed process outlined by Jenny Donovan has strong merit; but Council endorsement is required before proceeding.

This update is presented to SEAP for consideration and formulation of a recommendation to Council. SEAP recommend that Council, not SEAP, with the support of Jenny Donovan lead the process of developing a concept plan for future use of the Ballad Avenue Recreation Reserve.

Key stakeholders to consult are:

- local residents living in the suburb near Ballad Ave
- school teachers, students and parents, plus Larapri Child & Family Centre about outdoor environmental education
- Wynyard residents
- Wynyard Landcare, field naturalist groups
- council staff and councillors
- Wynyard Community Garden & Live Well Tasmania about community gardens
- Spencer Aged Care group about possible housing for retired reserve caretakers
- Cradle Coast NRM for environmental expertise
- SEAP members

Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

Attachment 2: Bicycle Paths Wynyard

Bicycle paths – Wynyard

Benefits of cycling:

- convenient for travelling short distances in town
- health benefits for people of all ages
- environmental friendly – less car transport for short distances
- enable children to travel to school or other activities – reducing dependence on family car

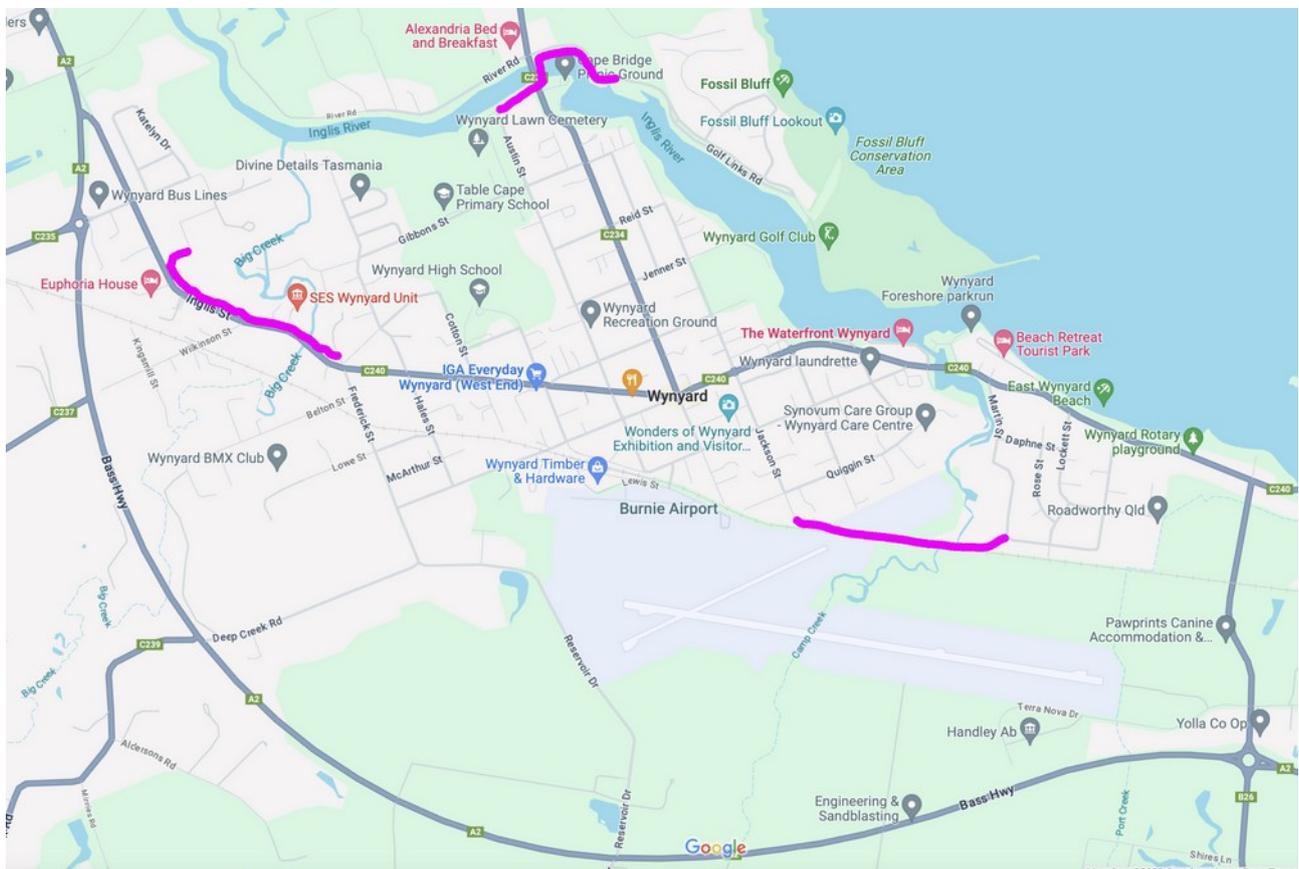
Wynyard is relatively flat, hence is ideal for cycling. To make cycling safer bike paths are required for the major streets thoroughfares travelled by vehicles.

Wynyard has three rivers/creeks that create transport bottlenecks where a dedicated cycle bridge and lane would improve the safety of all riders, especially children.

The **Big Creek** crossing was raised recently when the Inglis River Walking Trail report was released. Could children cycle from Katelyn Drive to school along the Inglis River trail? A quick inspection of the site suggested this was not practical, and a better solution was a dedicated cycle lane alongside Inglis Street.

A **Camp Creek** crossing could best be achieved by converting the dis-used railway bridge to a bicycle lane. This is a safe option to enable east Wynyard residents to travel to town and school.

Fossil Bluff residents need to travel along Golf Links Road and cross the **Inglis River** at Cape Bridge. The walking track along Golf Links Road from Cape Bridge could easily be upgraded to provide a safe bicycle lane.



Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

Attachment 3: Standards of Practice to Guide Ecosystem Restoration



STANDARDS OF PRACTICE TO GUIDE ECOSYSTEM RESTORATION

A contribution to the United Nations Decade on
Ecosystem Restoration

SUMMARY REPORT



Required citation:

FAO, SER & IUCN CEM. 2023. *Standards of practice to guide ecosystem restoration. A contribution to the United Nations Decade on Ecosystem Restoration. Summary report*. Rome, FAO. <https://doi.org/10.4060/cc5223en>

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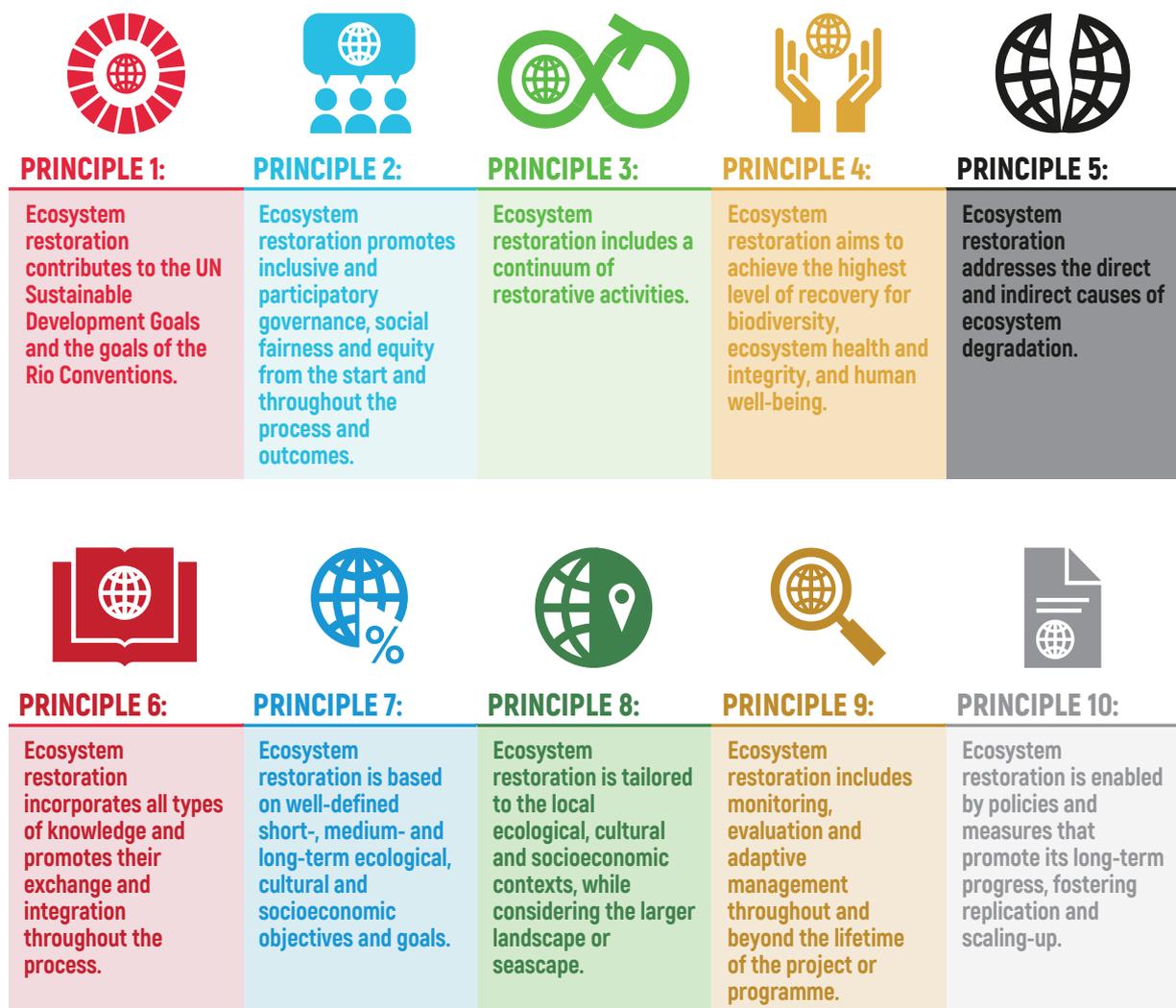
Cover photograph: Tidal wetland restoration of dredge material on Poplar Island, Chesapeake Bay, Maryland. ©Biohabitats Inc./Ecological Restoration & Management, Inc.



INTRODUCTION

The United Nations Decade on Ecosystem Restoration 2021–2030 (hereafter “UN Decade”) recognizes the critical need to prevent, halt and reverse the degradation of the world’s ecosystems. Effective restoration of degraded ecosystems is of paramount importance for recovering biodiversity, ecosystem health and integrity, ecosystem goods and services, climate-change mitigation and human health and well-being. UN Decade partners, through a consultative process, offered ten [principles](#) (Figure 1) for ecosystem restoration to create a shared vision and increase the likelihood of achieving the highest level of recovery possible.

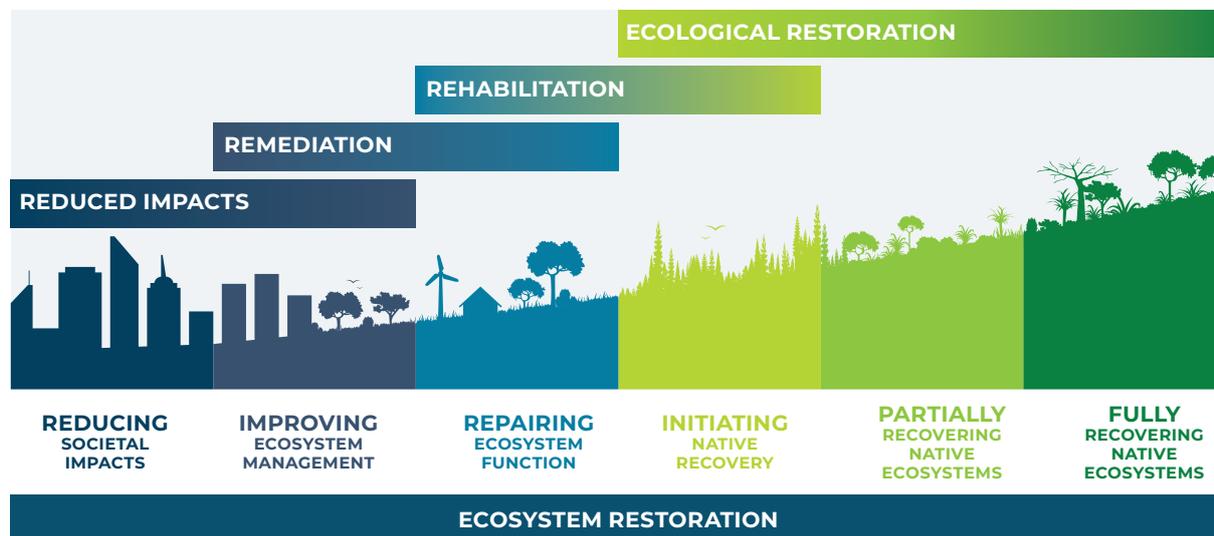
Figure 1. Ten principles for ecosystem restoration to guide the United Nations Decade on Ecosystem Restoration



Source: FAO, IUCN CEM & SER. 2021. *Principles for ecosystem restoration to guide the United Nations Decade 2021–2030*. Rome, FAO.

To facilitate application of these principles to restoration projects, the *Standards of practice to guide ecosystem restoration* (hereafter, *Standards of practice*) provides key recommendations for the entire restoration process, which can be applicable across all sectors of society, land or sea uses, ecosystems and regions, and to the broad array of ecosystem restoration activities under the UN Decade (Figure 2). The goal of this document is to provide an overview of the *Standards of practice*.

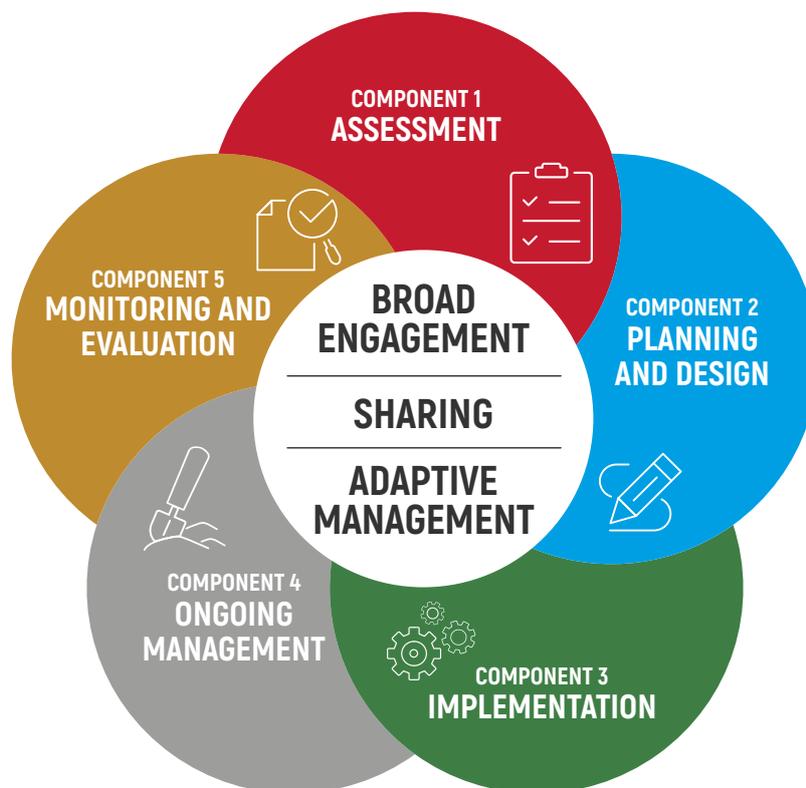
Figure 2. Restorative management activities arrayed along a continuum of ecological recovery



Source: Modified from Valderrábano, M., Nelson, C., Nicholson, E., Etter, A., Carwardine, J., Hallett, J., McBreen, J. and Botts, E. 2021. Using ecosystem risk assessment science in ecosystem restoration: A guide to applying the Red List of Ecosystems to ecosystem restoration. IUCN, Gland, Switzerland. After Gann G.D., McDonald, T., Walder, B., Aronson, J., Nelson, C.R., Jonson, J., Hallett, J.G., Eisenberg, C., Guariguata, M.R., Liu, J., Hua, F., Echeverría, C., Gonzales, E., Shaw, N., Decler, K. and Dixon, K.W. 2019. International principles and standards for the practice of ecological restoration. Second edition. Restoration Ecology 27(S1): S1–S46.

The *Standards of practice* were developed (Annex) through a synthesis of the large volume of existing guidance for best practices for a broad array of restorative activities, from sustainable agriculture to ecological restoration, as well as the [recommendations of the Science Taskforce for the UN Decade](#). Practices have been organized by components of the restoration process (Figure 3). The **assessment** component includes the identification and evaluation of the extent and scale of degradation, considering the site and its context within the land- and seascape. Degradation is defined as the cumulative degree to which an ecosystem’s physical condition, composition, structure and function have been adversely affected by anthropogenic factors. **Planning and design** focuses on determining appropriate restoration activities given the ecological, socioeconomic and cultural contexts, as well as financial constraints. Restoration targets are defined, and specific goals and objectives for the restoration project are developed based on consultations with stakeholders, right holders and experts. Planning foreshadows all the onsite work that will be undertaken during the project’s **implementation**, whereas **ongoing management** considers short- and long-term site needs following the completion of planned implementation activities. Finally, the **monitoring and evaluation** component focuses on measuring progress towards the recovery of the restoration targets and achievement of the project’s goals and objectives, enables adaptive management for possible course corrections, and provides an opportunity to share lessons learned.

Figure 3. The five components of the restoration process along with cross-cutting subcomponents that apply throughout the restoration process



Note: Although presented in a sequential order, the restoration process is not linear, and subcomponents within different components may be conducted simultaneously or in a different order than presented in the *Standards of practice to guide ecosystem restoration*.

Within the *Standards of practice*, each of the five components of the restoration process is presented in sequential order, with subcomponents (SC) detailed within each component, and practices listed within each subcomponent. It is important to recognize, however, that the restoration process is not linear and that some subcomponents and practices may be conducted simultaneously or in a different order than presented in the *Standards of practice*. For instance, the monitoring component, which is presented last in the *Standards of practice*, should begin during the project design phase. Moreover, there are “cross-cutting” subcomponents and practices that may need to be revisited throughout the restoration process. For this reason, some subcomponents are repeated within more than one of the components. For example, practices associated with adaptive management are needed throughout the restoration process. This is because adaptive management requires an iterative process of defining goals and objectives, implementing field trials to fill information gaps and test multiple alternative approaches, learning from restoring through effective monitoring and evaluation, and applying lessons learned to planning, implementation and ongoing management. Although an adaptive approach to restoration improves the likelihood of achieving restoration goals and objectives, it requires a commitment to undertaking adaptive-management activities across the restoration process. Similarly, the likelihood of restoration success greatly increases when each component of the process is informed by and involves inclusive, genuine and continuous engagement of all stakeholders, right holders and underrepresented groups, who might be directly or indirectly involved in, or affected by, restoration activities. In many cases, long-term sustainability of restoration projects is only possible via codesign, co-management and co-governance with local stakeholders and right holders, and, therefore,

Standards of practice to guide ecosystem restoration - Summary report

broad engagement should not be limited to a single component, such as planning. Restoration projects that may affect Indigenous Peoples or their territories must respect their collective right to free, prior and informed consent, embedded within the universal right to self-determination. Regular and inclusive reporting and communication of activities, achievements and lessons learned is also required within all components of the restoration process to foster support and enhance benefits of the restoration efforts; as is information sharing. In all cases where cross-cutting subcomponents are included in more than one component of the restoration process, the practices that are recommended are tailored for each component.

The success of ecosystem restoration projects depends on factors beyond the management activities employed at the project site, such as supportive policy, governance, and social and economic conditions. For this reason, many subcomponents and practices within the *Standards of practice* address enabling conditions, including: the socioeconomic and cultural contexts of the project and project governance; open, participatory processes that balance the needs and concerns of those involved in, or affected by, the restoration; tenure, property and use rights; equity, livelihoods and benefit-sharing; integrating all types of knowledge, including scientific and traditional; sustainable financing from different sources and managing tradeoffs between ecological integrity and human well-being. Because factors beyond the scope of the project may affect project success, understanding these conditions prior to project initiation can prevent wasted resources and unintended consequences. In addition, lessons learned throughout the entire restoration process may indicate the need for higher-level steps to leverage restoration efforts, reform tenure regimes, improve access to markets, change policies or repurpose current incentive programmes to reduce degradation and support restoration.

The recommendations proposed in the *Standards of practice* are voluntary. They were developed to assist practitioners, stakeholders and right holders in maximizing ecological, cultural and socioeconomic benefits of their restoration activities. Not all practices, however, will apply to every restoration project. Under the *Standards of practice*, a restoration project includes activities to repair one or more degraded sites. Restoration projects are highly variable with respect to the organizations and people involved (e.g. Indigenous Peoples, local communities, non-government organizations, government agencies and private landowners), resource availability (low budget to highly financed) and spatial scale (small individual sites to multiple sites across landscapes or seascapes). These differences may influence the number and type of best practices that are appropriate for each project. Regardless of whether a project is limited in its ability to incorporate practices from the standards or can implement most of them, a synthetic understanding of the complete set of recommended practices should facilitate decision-making about the practices to include as well as navigating tradeoffs, with the goal of achieving the highest level of recovery possible for nature and people.

This summary of the *Standards of practice* includes an overview of each of the five components of the restoration process, along with their relevant subcomponents. Detailed explanations of the 45 subcomponents and over 250 recommended practices within the five components are included in the full version¹ of the *Standards of practice*. These subcomponents and practices can assist the global restoration community with developing restoration projects that reflect the UN Decade principles. Adherence to the recommendations within the *Standards of practice* should facilitate achieving maximum net gain for biodiversity, ecosystem health and integrity, and human well-being, and promote the engagement of local communities, women, youth, Indigenous Peoples, funders, researchers, governments and others. In addition, the practices should aid in harmonizing across projects, which is critical to achieving the greatest net gain possible through ambitious global restoration initiatives.

¹ The *Standards of practice* are scheduled to be released on the [UN Decade website](#) in the fourth quarter of 2023.

COMPONENT 1: ASSESSMENT

Degraded ecosystems are those that, due to anthropogenic causes, have been altered in composition, structure or function, and that no longer provide the level of services they once did (e.g. water, food, fibre, climate regulation, clean air, nutrient cycling, erosion and coastal flood control) or have lost species of conservation, cultural or economic interest. Prior to planning any restoration project, an assessment of the local ecological, cultural and socioeconomic conditions is needed to identify degradation and to define restoration vision and targets during planning. Most restoration projects are conducted at the local or community level, and local stakeholders and right holders may be aware of the factors causing degradation. Therefore, broad engagement by stakeholders and right holders, as well as incorporation of all kinds of knowledge, is critical in the assessment phase (SC1).



Designing a restoration project starts with a local assessment of the area being considered for restoration (SC2), including a general description of its physical (e.g. topography, hydrology) and biotic components (e.g. species present). The degree of degradation, and its effects on biodiversity, ecological integrity, and human health and well-being must be identified. While degradation may be obvious, the underlying causes must also be determined so that a plan for reducing or eliminating them can be developed. Information on land use, livelihoods and potential social barriers to restoration should be obtained.

Because restoration sites are embedded within larger landscapes or seascapes (SC3), conditions and activities external to the restoration site can greatly affect the outcome of restoration. Consequently, understanding the broader context in terms of biophysical and environmental conditions, socioeconomic realities, policy and legal contexts, and cultural and historical influences is important for achieving desired outcomes from restoration. Potential barriers to restoration and external threats, as well as fragmentation and connectivity, should be evaluated at this scale. It is also necessary to fully identify stakeholders and right holders, as part of the assessment of the larger context of the project.

A detailed inventory of the baseline condition (SC4) of the proposed project area and restoration target to be restored should be conducted in advance of planning or implementation of specific restoration activities. This baseline inventory extends the initial assessment of local conditions (SC2) by measuring specific indicators of the site's physical environment, biotic composition, community structure and ecosystem functions. This inventory greatly assists development of restoration goals and objectives, and selection of restoration activities. It also provides a benchmark for measuring change following implementation. For this reason, the indicators measured in the baseline inventory should be the same as those that will be measured for project monitoring.

To assess the degree of degradation to the project area and define targets and recovery goals, it is useful to estimate the condition that the project area would be in if degradation had not taken place. Best practice for characterizing this condition is to develop a "reference model" (SC5) from "reference sites" – sites that are environmentally similar to the project site, but that have not experienced a high degree of degradation. The appropriate time to identify reference sites and models is during the assessment phase. Adaptive management, information management and record keeping, and reporting and communication are important in both assessment and planning; however, because best practices are similar across these components, these are only included in planning to reduce redundancy (SC12, SC17, and SC18, respectively).



COMPONENT 2: PLANNING AND DESIGN

Effective planning is essential to achieve the desired outcomes of a restoration project, and the development of a restoration plan underpins the entire ecosystem restoration process. To be successful, the plan should be a product of informed decision-making at all levels, and a participatory process that includes all stakeholders and right holders involved in, or affected by, the restoration, as well as experts in ecosystem degradation and repair (SC6). The development of a shared vision and the restoration targets (i.e. desired ecological, socioeconomic and cultural conditions), as well as specific project goals and objectives (SC7), should be built on fair and transparent negotiations to address potential conflicts or trade-offs among goals, objectives and activities in a manner that does not compromise ecosystem recovery.



Restoration planning is complex and requires an understanding of land and resource tenure security, legitimate tenure rights and cultural values (SC8), as well as clear agreement among stakeholders and right holders on the project governance structure and decision-making processes (SC9). Capacity development (SC10) may be needed to enable and enhance participation of local stakeholders and underrepresented groups in selecting and prioritizing the restoration activities to be implemented (SC11), and to achieve greater consensus among all local communities and authorities as to funding, implementation, access, adaptive management and other aspects of project work. By prioritizing restoration activities, the project can be scaled to the available resources or adjusted if external factors require that changes be made to implementation. The adoption of an adaptive-management framework (SC12) also allows modifications to be made based on evaluation of monitoring results.

Development of the restoration plan (SC13) should be based on the condition of the restored site, as determined during assessment (component 1), and predictions of future conditions resulting from climate change. The plan should specify all details about the project (SC6 to 12), including plans and timelines for implementation, ongoing management, and monitoring activities (components 3, 4, and 5, respectively).

The plan should also detail required financial resources including in-kind contributions (S14) and the laws and regulations (SC15) that must be followed to enable the implementation. Because issues may arise during implementation that can adversely affect restoration outcomes, risk assessment and appropriate risk management (SC16) need to be conducted to reduce these adverse effects. Information management and record keeping (SC17) is also critical in this phase to enable broad engagement, understanding and implementation of planned restoration and ongoing management activities, and adaptive management. Finally, a good communication strategy (SC18) can help create the shared vision and the plan, build trust and avoid problems related to project governance and design.



COMPONENT 2 PLANNING AND DESIGN



COMPONENT 3: IMPLEMENTATION

Care must be taken to perform restoration activities in a manner that maximizes returns for biodiversity, ecosystem health and integrity, ecosystem goods and services, climate change mitigation, and human health and well-being. To this end, implementation should be done, as appropriate, in the context of participatory governance, social fairness and equity, by promoting fair and safe working conditions, and providing inclusive opportunities for engagement, co-management, decision-making, knowledge integration and the enhancement of livelihoods for local stakeholders, right holders and underrepresented groups (SC19 and SC20). When implementing restoration activities, it is critical to ensure that sufficient human resources, tools and materials are available at the project site (SC21), so that the planned project timeline is met (SC13). All activities should be undertaken in compliance with applicable laws and regulations, and with respect for local and Indigenous Peoples' rights, traditions and customs (SC22).



Ecosystem restoration involves innovation and experimentation, and restoration activities often result in surprises and setbacks. Because of this, it is often necessary to conduct initial experimentation to support decision-making (e.g. choice of species and spacing) or to install and test alternative treatments during the project to enable adaptive management (SC23). Likewise, several types of restoration activities may be needed to prevent or halt degradation, or amend abiotic and biotic conditions to facilitate natural regeneration and establishment of translocated organisms (SC24, SC25 and SC26). For example, it is often important to take action to remove threats from the site, such as grazing, that may adversely affect planted vegetation. Wherever feasible, practitioners should leverage opportunities for natural recovery (e.g. successional processes). However, where the potential for natural regeneration has been lost, additional measures may be necessary (e.g. modification of abiotic conditions to allow establishment or translocation of organisms to the site). In many cases, the use of restoration activities aimed at reducing societal impacts, such as application of sustainable management practices for soil, land, water and vegetation together with additional alternatives to generate livelihoods for local communities (e.g. ecotourism), will help prevent further degradation by satisfying socioeconomic needs. Importantly, when modifying biotic or abiotic conditions, measures should be adopted to avoid or minimize negative collateral damage, or to mitigate these impacts (SC27).

To maximize learning from restoration interventions, it is critical to document in detail the locations, types, intensities, frequencies, and costs of all restoration activities (SC28). For example, if prescribed fire is used, it would be important to document the environmental conditions during the fire, which areas within the fire perimeter burned, and the intensity and severity of the fire where it occurred. This information is critical both for understanding best practice for implementing treatments, monitoring treatment efficacy and effects, and for replication purposes. In addition, reporting and communicating about project implementation is important to raise awareness, mobilize and maintain support from the public, government, and donors, and to foster collaboration and mutual learning with other restoration practitioners (SC29).



**COMPONENT 3
IMPLEMENTATION**

SC19 BROAD ENGAGEMENT	SC20 SUITABILITY, SAFETY AND WELL-BEING OF RESTORATION IMPLEMENTERS	SC21 MATERIALS, TOOLS AND SUPPLIES	SC22 COMPLIANCE WITH LAWS AND REGULATIONS
SC23 ADAPTIVE MANAGEMENT	SC24 IMPLEMENTING RESTORATION ACTIVITIES	SC25 ENHANCING NATURAL ECOSYSTEM RECOVERY PROCESSES	SC26 TRANSLOCATION OF PLANTS, ANIMALS AND OTHER ORGANISMS
SC27 MINIMIZING COLLATERAL DAMAGE FROM RESTORATION	SC28 INFORMATION MANAGEMENT AND RECORD-KEEPING	SC29 REPORTING AND COMMUNICATION	

COMPONENT 4: ONGOING MANAGEMENT

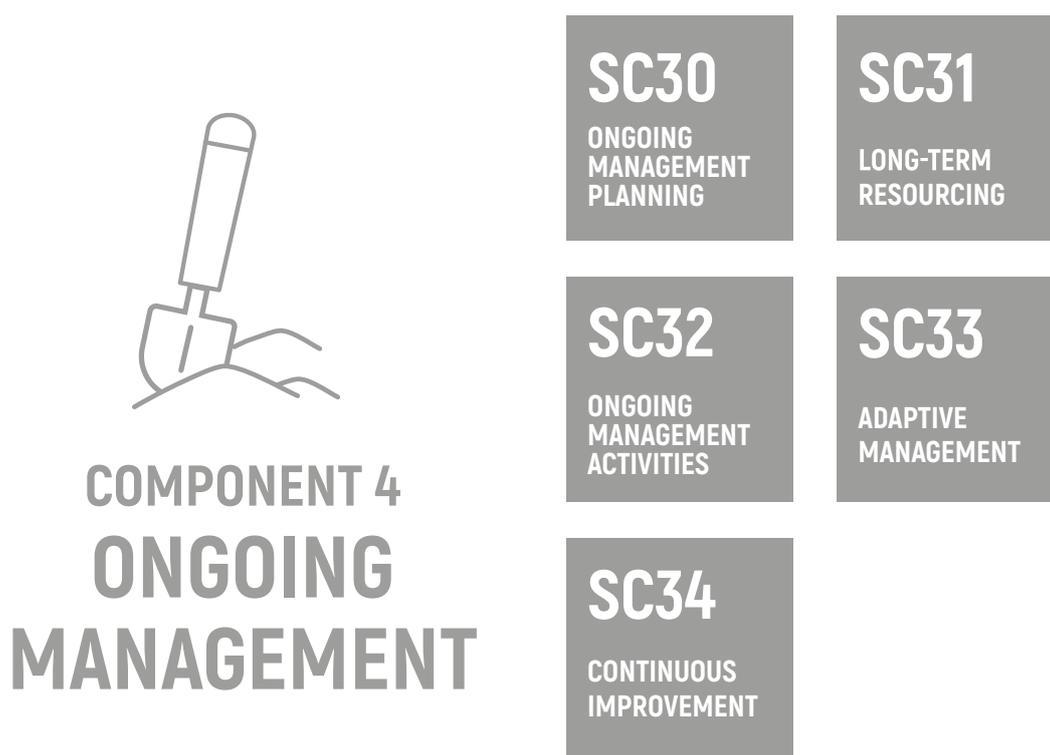
Ongoing management (often referred to as “maintenance”) of restoration sites after the primary project implementation phase is an essential part of successful restoration. Restoration projects are unlikely to succeed in providing ecological, cultural and socioeconomic benefits if the sites are not revisited after the completion of initial restoration activities. Because of this, ongoing management should begin as soon as any project implementation phase is over to minimize potential of regression into a degraded state and maximize progress towards medium and long-term restoration goals and objectives. However, there may not be a clear point of transition from implementation to ongoing management, especially in long-term restoration projects, when implementation phases continue until recovery is secured.

Active engagement of stakeholders and right holders during the ongoing management phase is just as important as it is in the implementation phase of restoration, as it helps promote co-management, collaboration and capacity development for project sustainability. Furthermore, it helps facilitate communication about the project and its values to new generations. Educational and research institutions may be able to support restoration science or implementation projects and incorporate methods and tools into curricula. Information management, record keeping, reporting and communication are also critical during ongoing management. The specific practices for these, however, are the same as for implementation (SC19, SC28, and SC29) and have not been repeated in ongoing management.



Realistic, cost-effective and sustainable plans for ongoing management (SC30) and adequate funding (direct or through revenues generated) (SC31) is essential, especially since personnel and budget resources are generally limited in this phase of the project. Planning and budgeting should consider that some long-term needs for ongoing management can be anticipated (e.g. site protection measures, continued removal of invasive species, management of hydrological regimes and ensuring natural disturbance regimes), while other needs may not be known in advance since ecosystems are dynamic and constantly changing, and unanticipated events can occur. Although they occur after implementation, ongoing management activities should be scheduled and budgeted during the planning phase of restoration (SC13 and SC14) and should allow for the development of both anticipated and adaptive activities (SC32).

To foster continuous improvement, opportunities for the implementation of additional restoration activities at the project site should be explored based on reliable monitoring and adaptive management (SC33 and SC34). Application of lessons learned from monitoring and evaluation and adaptive management is essential over the long-term to plan and implement any necessary corrective measures to avoid adverse impacts and progress to long-term project goals.



COMPONENT 5: MONITORING AND EVALUATION

Ecosystem restoration is a long-term process with uncertainties on how to best achieve project goals. Furthermore, climate change is adding to existing unknowns about how ecosystems respond to planned restoration actions. Consequently, it is imperative to monitor and evaluate the restoration project over time to determine: i) the extent to which restoration activities were implemented as planned (implementation monitoring); ii) the degree to which the restoration targets were recovered, and the project goals and objectives were achieved (effectiveness monitoring); and, iii) the ecological, cultural or socioeconomic effects that resulted, whether positive or negative (effects monitoring). When done correctly, monitoring and evaluation enables ongoing management to be adaptive, so that effective actions can be adopted and expanded, ineffective approaches can be discontinued, and promising new methods can be added.

The best outcomes from monitoring will be achieved using a participatory approach that engages stakeholders and right holders, and incorporates multiple types of knowledge, including traditional, local and scientific (SC35). Including people with diverse skill sets and knowledge bases will facilitate the identification of monitoring goals, objectives and key questions to be addressed, based on stakeholder interests and concerns. Experts in assessing biophysical, cultural and socioeconomic indicators are needed to develop monitoring methods that have sufficient power to detect trends and reliably answer



key questions. Broad participation in monitoring is also important to maintain monitoring and adaptive-management frameworks over the long term.

For monitoring to reliably answer questions about restoration implementation, effectiveness and effects, the monitoring and evaluation plan (SC36) requires more than just protocols for making observations about the restoration project. Rather, it requires developing specific monitoring goals and objectives (SC37), as well as questions that will be addressed, and selecting reliable monitoring and sampling designs, based on the indicators selected, for answering those questions (SC38 and SC39). It also requires protocols for collecting data (SC40) in a way that can be repeated over time and for analysing data and interpreting results (SC41). An important, but often overlooked, aspect of monitoring is periodic evaluation of whether the monitoring and evaluation effort is efficiently achieving its goals and objectives and to adapt aspects as needed (SC42). Procedures and timelines for evaluating the efficacy of the monitoring programme should be included in the monitoring plan. The plan should also include procedures and timelines for information management and record-keeping (SC43) and sharing findings (SC44), so that lessons learned can be utilized for adaptive management (SC45).

Development of the monitoring plan should begin during the planning and design phase of the restoration project, before work has started on the project site. This is critical for obtaining required resources and scheduling monitoring activities directly into the restoration project plan. Equally as important, it allows monitoring questions to be directly linked with the ecological, cultural and socioeconomic objectives of restoration. Furthermore, for many monitoring questions, it is essential to collect baseline (or pre-treatment) data, which is only possible if monitoring activities are designed prior to the implementation of the restoration work.

Besides evaluation of implementation, efficacy and effects of restoration activities, there are other equally important goals of monitoring (SC37), including evaluation of project governance, information sharing, building project support and increasing trust among stakeholders and right holders, providing technical training on the restoration process and environmental assessment and providing opportunities for contributing to environmental solutions. Unless the full set of monitoring goals are well articulated in the monitoring and evaluation plan, with specific objectives and methods, the project will not be well positioned to achieve them.



COMPONENT 5 MONITORING AND EVALUATION

<p>SC35 BROAD ENGAGEMENT</p>	<p>SC36 MONITORING AND EVALUATION PLAN</p>	<p>SC37 MONITORING GOALS AND OBJECTIVES</p>	<p>SC38 SELECTION OF INDICATORS</p>
<p>SC39 MONITORING AND SAMPLING DESIGNS</p>	<p>SC40 DATA COLLECTION</p>	<p>SC41 DATA MANAGEMENT, ANALYSIS AND EVALUATION</p>	<p>SC42 EVALUATION OF THE EFFECTIVENESS OF THE MONITORING EFFORT</p>
<p>SC43 INFORMATION MANAGEMENT AND RECORD-KEEPING</p>	<p>SC44 REPORTING AND COMMUNICATION</p>	<p>SC45 ADAPTIVE MANAGEMENT</p>	

ANNEX

BACKGROUND

The Taskforce on Best Practices, which was established under the leadership of the Food and Agriculture Organization of the United Nations (FAO), is a collaborative effort of currently 300 members from more than 100 global organizations, which supports capacity development and knowledge dissemination to help achieve the vision of the United Nations Decade on Ecosystem Restoration (hereafter “UN Decade”). In 2021, the Taskforce on Best Practices, the Society for Ecological Restoration (SER) and the International Union for Conservation of Nature Commission on Ecosystem Management (IUCN CEM) partnered to lead an inclusive effort to draft ten guiding [principles](#) that underpin the full set of ecosystem restoration activities, in collaboration with the Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF), the EcoHealth Network, the World Wide Fund for Nature (WWF) and the United Nations Environment Programme (UNEP). After the release of the principles in September 2021, and following the same participatory approach, the partnership continued to coordinate the development of the *Standards of practice to guide ecosystem restoration* (hereafter “*Standards of practice*”) to provide guidance on the application of the ten principles across all components of the restoration process in close collaboration with 15 organizations (see authors).

PROCESS AND METHODS

The development of the *Standards of practice* started with review of existing guidance documents for all types of activities defined as ecosystem restoration under the UN Decade, including rehabilitation, reclamation, forest and landscape restoration, ecological restoration, sustainable or ecological agriculture and forestry, rewilding, other effective conservation measures (terrestrial or in aquatic ecosystems) and others. These documents were obtained through a global request distributed via email to members of the SER, IUCN CEM and the UN Decade Taskforce on Best Practices. A total of 201 respondents suggested 127 unique *standards of practice* documents. Suggested documents covered a wide range of management activities, ecosystem types, aims, geographical locations and audiences. After review, the most universally relevant documents were selected for extracting best practices (see list of documents in the *Standards of practice*). To the extent possible, redundant practices were eliminated. Practices were then organized into components and subcomponents of the process. The initial set of components, subcomponents and practices were subject to a series of consultative processes, including: i) a global forum in which 70 scientists and practitioners collaboratively reviewed and revised the practices for each subcomponent within each component (April and May 2022); ii) an invitation to provide feedback and inputs distributed to leads and members of the UN Decade taskforces, the UN Decade Strategy Group, the Science and Policy Committee of SER and leaders of IUCN CEM (August 2022); and, iii) consultations at the XV World Forestry Congress (May 2022), the Thirteenth European Conference on Ecological Restoration (September 2022) and the Twenty-Sixth Session of the FAO

Committee on Forestry (October 2022). All feedback and inputs were evaluated and considered in the creation of a second draft, which was subjected to a one-month open global consultation advertised to the restoration community and available on the UN Decade website. Over 400 individuals from diverse organizations and geographic regions provided comments during the global consultation. Each comment was evaluated and the text was adjusted as appropriate to create the beta version of the *Standards of practice*, on which this summary is based. The final version will be released on the [UN Decade website](#) in the fourth quarter of 2023 after conducting targeted consultations with Indigenous Peoples.



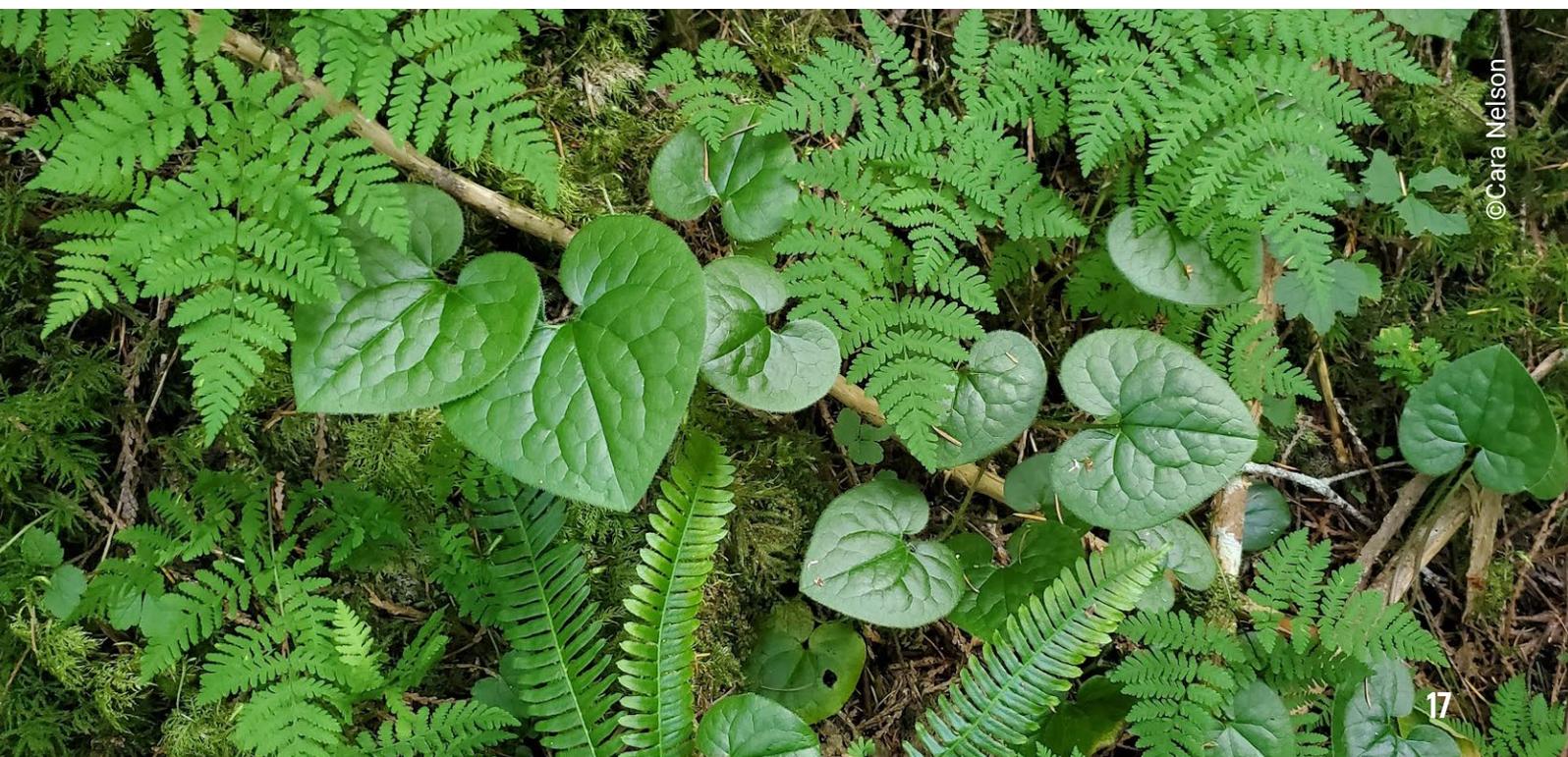
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In collaboration with:



Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

Attachment 4: Wildlife Corridors Discussion Recap and Biodiversity Corridors For Waratah-Wynyard Council paper

Waratah-Wynyard SEAP Committee 2023

Summary of Discussion on Approaches to Developing a Wildlife Corridors Policy At September 2023 SEAP Meeting

Colin Hocking 30/10/2023

A WWC Wildlife Corridors Policy & Strategy needs to fold out from the Biodiversity Management and Protection Policy – it is important to have some idea of what biodiversity there is in WWC and where first, and then develop the Wildlife Corridor policy & strategy as a following set of actions, out of this.

It is important to document and represent wildlife and other biodiversity values across the range of land tenures in Waratah-Wynyard, not just on Council Managed land – wildlife does not live and move within our pre-determined boundaries.

Likewise, any Wildlife Corridors Policy & Strategy needs to address in some way, and take account of, the wildlife /biodiversity values across the range of land tenures in WWC, and how these might be connected.

Any policy and strategy will not just focus on fauna, although going by corridor policies in other councils and shires, in the first iteration, corridor identification and development might focus on threatened wildlife, with perhaps some address to threatened flora as well. Later iterations of the Corridor Policy and Strategy could expand on key floral values.

Any Corridors policy and strategy will need to take human interest and human behavior into account – that is, what works practically on the ground, as well as focusing on high biodiversity outcomes.

First iteration corridors might be identified around existing identifiable corridors. For example, the types of corridors in Redlands Council Policy:

Existing established corridors

Corridors under development – with possible extensions

Riparian corridors

Coastal foreshore corridors

Corridors associated with human features; e.g. along roadsides and walking/cycling paths

These types of corridors would include:

Core habitat areas and connections between these relevant to threatened wildlife

Linkages under, or capable of having, *enhancement* of habitat and linkage values

Areas that might form *stepping stones* for some species e.g. birds, marsupials needing protected home bases, and corridors for foraging = *functional connections*, not just physical connections.

Corridor policy and strategy would also benefit by considering possible development of links between existing corridors.

In addition to expert input and advice, development and monitoring of wildlife corridors can include contributions from citizen science, including wildlife photography and lodging sightings on biodiversity lists, such as ListMap.

Biodiversity Corridors For Waratah-Wynyard Council

Colin Hocking 5/5/2023

The purpose of this proposal is to raise the prospect for, and promote ideas about, how best to identify, maintain and enhance biodiversity corridors within Waratah-Wynyard Council.

A significant number of Councils, Shires and other agencies across Australia now have biodiversity corridors of some type as part of their overall environmental strategy (sometimes called other names: ecological linkages, wildlife corridors, wildlife connection plans, biolinks, habitat corridors, etc.).

Redlands Council, in Queensland, have a comprehensive and comprehensible strategy for biodiversity corridors across their area of jurisdiction (attached and linked to at https://www.redland.qld.gov.au/download/downloads/id/2773/wildlife_connection_plan_2018_-2028.pdf

Redlands Council describe Wildlife Corridors as follows:

“Fragmentation of wildlife habitat in the Redlands has resulted in smaller disconnected patches of wildlife habitat that has reduced wildlife movement and has led to a reduction in biodiversity. Wildlife habitat, networks and corridors are the areas of connected native vegetation that enable the maintenance of ecological processes, the movement of wildlife and support the continuation of viable populations.”

The Redlands Council plan, and similar plans from other Councils, could be used as one template for how Waratah-Wynyard can develop a Biodiversity Corridor Policy and Strategy.

Relevance of Biodiversity Corridors to Waratah-Wynyard Council

WWC covers public and private land rich in biodiversity, with many areas that maintain high ecological integrity. WWC is habitat for rare plant and animal species, many of which are significant at State and National level. They include the Eastern Barred Bandicoot, the Eastern Brown Bandicoot, the Tasmanian Devil, Eastern and Spotted Tail Quoll, Tasmanian Wedgetail Eagle, Swift Parrot, etc., as well as numerous threatened plant species

Over time, it is apparent that the habitat of these and other significant species is being fragmented and otherwise divided by physical and other ecological barriers. There needs to be action now to head off these isolating effects of fragmentation and development.

Biodiversity corridors have already been identified as significant for WWC

In the WWC iCE,P under Item 38. *Protecting, enhancing and recovering biodiversity*, there is an action specific to biodiversity corridors

“38.3 Work with appropriate partner agencies to enhance and extend biodiversity corridors throughout Waratah-Wynyard, prioritising those currently at high risk.”

This is rated as Essential within the iCEP list of actions, with identified NRM as the lead within Council

(WWC iCEP Summary, at pg. pg. 22, under Theme 5 Environmental Stewardship)

Priority Actions for Developing Biodiversity Corridors

There is a priority now to:

1. Identify what the high significant corridors for biodiversity are within WWC, , in as far as these are known, on both public and private land.
2. Develop a set of interim protocols for how these corridors should be protected.
3. Set up a number of pilot projects to investigate the effectiveness and value of the interim protocols, primarily around highly significant locations.
4. Establish interim protocols for wildlife corridor management, as well as areas identified as significant corridors, and in the longer term, develop detailed Council Policy, Strategy and Guidelines for wildlife corridor identification and management, and embed these across the range of relevant WWC strategies (e.g. Settlement Strategy).

In this process, interested local and regional communities and organisations with interest in wildlife corridors should be invited to participate in helping to identify significant wildlife corridors, and what the interim protocols for management should be.

Next Steps

The next steps in the process for developing a WWC Biodiversity Corridor Policy, Strategy and Guidelines might be to:

Identify the range in people within WWC Council who have a responsibility, as well as interest, in developing biodiversity corridors.

Identify which WWC policies and strategies are relevant to the development of WWC biodiversity corridors , so that consideration can be given to adjustment of these in future, in the light of the development Biodiversity Corridors Policy and Strategy.

Identify which local communities, formalized community groups and organisations have an interest and need to identify, protect and enhance biodiversity corridors.

Set up a process for how Council Officers and community representatives can work through the processes for identifying corridors and developing interim protocols.

Note: UTas and Other Organisations as Partners and Resources

The University of Tasmania (UTas) and Bush Heritage Australia are partners in a major biodiversity corridor project to connect Tasmania's Eastern Tiers and Western Tiers via biodiversity corridors – see <https://www.bushheritage.org.au/places-we-protect/tasmania/midlands#:~:text=Between%20Tasmania's%20Eastern%20Tiers%20and%20Great%20Western%20Tiers,the%20west%20C%20south%20and%20north%20of%20the%20state.>

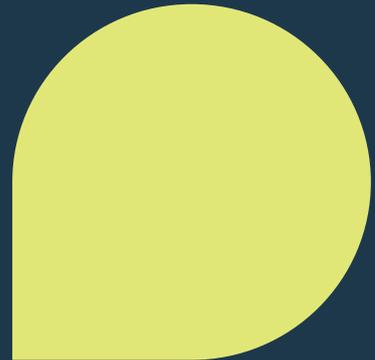
UTas have significant expertise in the identification and development of biodiversity corridors, and may be interested, with their students, in a project within WWC to identify and developing management plans, for biodiversity corridors – see attached guide for biodiversity corridors.

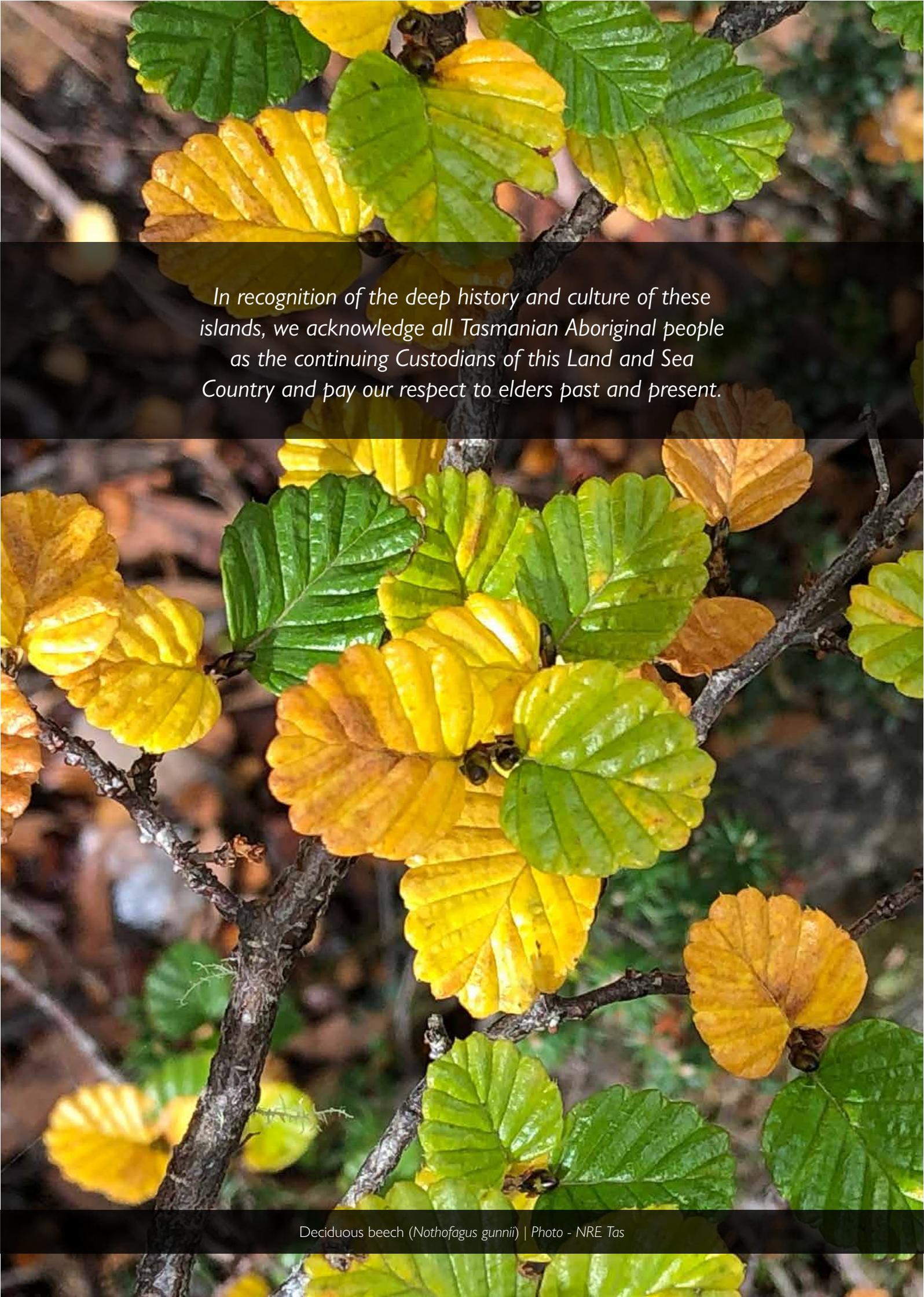
Sustainability and Environmental Advisory Panel

AGENDA - 21 NOVEMBER 2023

**Attachment 5: Consultation Open: Tasmanian Threatened Species
Strategy Discussion Paper**

Developing a new threatened species strategy for Tasmania



A close-up photograph of deciduous beech leaves on a branch. The leaves are in various stages of autumn color change, ranging from vibrant green to bright yellow and some showing brown edges. The leaves have a distinctively lobed or scalloped shape. The background is a soft-focus forest scene with more foliage and branches.

In recognition of the deep history and culture of these islands, we acknowledge all Tasmanian Aboriginal people as the continuing Custodians of this Land and Sea Country and pay our respect to elders past and present.

Contents

Minister’s Foreword	4
Introduction.....	5
Background.....	7
Reflections on progress.....	8
Threats.....	13
Case Studies.....	15
Towards a New Threatened Species Strategy	17
Have Your Say.....	24
How to Provide Feedback.....	24
Questions	24
Confidentiality	25
References.....	26

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Page 14: Swift parrot - Henry Cook, Giant kelp - Cayne Layton IMA, Tasmanian devil - Kellie Simpson, Myrtle rust - Ziqing Yuan, Biosecurity Tasmania, Ptunarra brown butterfly - Simon de Salis, Gell River Fire - Chris Emms.

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Minister's Foreword

Tasmania is world renowned for its rich natural environment. Our natural ecosystems, native plants and animals are important to the health of our environment and our community, and we all have a role to play in protecting these species into the future.



The Tasmanian Government is developing a new Threatened Species Strategy to guide our collective actions to help our flora and fauna survive in the wild. We are committed to a thorough review and have provided \$300,000 over two years to ensure our approach is comprehensive and informed by contemporary science. The new Strategy will reflect current biodiversity management principles and consider future impacts of climate change, providing an opportunity to cast a forward-thinking approach to threatened species management in Tasmania.

As in other parts of Australia, Tasmania's threatened species face significant challenges including impacts of invasive species, new diseases and climate change. Extreme weather events, altered bushfire regimes and warming oceans are all having a destabilising effect on biological systems. Under these emerging scenarios, many species face an uncertain future. Tasmania is a safe haven for many species, yet many plant and animal species in Tasmania are critically endangered and are vulnerable to small changes in their habitat and environmental conditions. Building knowledge of habitat and ecosystem requirements and threats along with finding ways to protect these values remains one of our greatest challenges.

In saying that, we have had great success in bringing some species back from the brink of extinction. The Save the Tasmanian Devil Program has supported these iconic marsupials to slowly rebuild from the devastating threats of devil facial tumour disease and the Orange-Bellied Parrot Captive Breeding Program in 2022 delivered the highest recorded number of wild returns in over 15 years. These success stories provide us with hope and inform our approach to emerging challenges.

Increasingly, the ability to collaborate across research bodies, community organisations, Tasmanian Aboriginal People, industry, and government is critical to how we achieve maximum impact. The Strategy will be developed through several rounds of consultation. Partnership opportunities and innovative thinking, coupled with pragmatic action, are being sought to navigate the path forward. Your response to this Discussion Paper will help inform the final Strategy and actions.

I encourage you to have your say on how Tasmania can continue to protect, recover and value our threatened species now and into the future.

A handwritten signature in black ink, appearing to read 'R Jaensch'.

Hon Roger Jaensch MP

Minister for Environment and Climate Change

Introduction

Nearly 700 species of flora and fauna found in Tasmania are listed as threatened under the *Threatened Species Protection Act 1995* (the Act). A new evidence-based Threatened Species Strategy (Strategy) informed by the latest science will focus efforts and provide a contemporary framework for Tasmania to maximise the conservation and recovery of our threatened species.

The *Threatened Species Protection Act 1995* states that the Secretary will prepare a threatened species strategy for the conservation of threatened native flora and fauna. This Discussion Paper is the first step in a comprehensive process to develop a new strategy which is evidence-based and informed by contemporary science. It specifies that the Strategy needs to incorporate proposals for:

- ensuring the survival, and conditions for evolutionary development in the wild, of threatened native flora and fauna; and
- ensuring the identification, and proper management of, threatening processes; and
- education of the community in conservation and management of threatened native flora and fauna; and
- ensuring the availability of resources to accomplish the objectives of conservation and management of threatened native flora and fauna.

The current Strategy for Tasmania (the 2000 Strategy) has been in place for more than 20 years. Emerging threats, and improved knowledge and tools to support threatened species management, will be considered in developing the new Strategy. The new Strategy will:

- ensure decisions are evidence-based and informed by contemporary science;
- allow for adaptive responses to the risks and potential opportunities associated with climate change and other threatening processes;
- foster collective ownership, collaboration, and participation from all sectors of the community;
- complement national and international approaches to threatened species conservation;
- encourage partnerships with other organisations and governments to produce tangible long-term outcomes; and
- explore options for resourcing conservation initiatives.

Forty-spotted pardalote (*Pardalotus quadragintus*) | Photo - Mark Sanders



The Strategy will also consider the objectives of the Act which, in support of the Objectives of the Resource Management and Planning System of Tasmania, are to:

- a) ensure that all native flora and fauna in Tasmania can survive, flourish and retain their potential for evolutionary development in the wild; and
- b) ensure that the genetic diversity of native flora and fauna is maintained; and
- c) educate the community in the conservation of native flora and fauna; and
- d) encourage co-operative management of native flora and fauna including the making of co-operative agreements for land management under this Act; and
- e) assist landholders to enable native flora and fauna to be conserved; and
- f) encourage the conserving of native flora and fauna through co-operative community endeavours.

The new Strategy will provide the overarching framework for action. It will be supported by an Implementation Plan which will identify the actions required to deliver on the Strategy.

This Discussion Paper is the first step in developing the new Strategy. It provides an overview of threatened species in Tasmania, identifies key threats and challenges, and proposes a vision, objectives, prioritisation principles and priority areas for action.



Overland track through buttongrass (*Gymnoschoenus sphaerocephalus*) | Photo - Tasmania Park and Wildlife Service

Background

Tasmania's rich biodiversity is widely recognised on a global scale. Our distinctive flora and fauna are precious in their own rights and support activities that underpin Tasmania's liveability and economy. Tasmania has several species that are no longer present on the Australian mainland.

Ongoing threats place our ecological communities at risk of decline or extinction. Out of the approximately 33,000 native species residing in Tasmania, as of November 2023, 686 are listed as threatened under State legislation, of which 195 are animal species and 491 are plant species. A significant number (227) are listed as endangered, the highest threat level under State legislation. A further group (310) are rare in the wild, existing in small populations that are not currently in danger of extinction but could be at risk in the future.

Twenty-seven percent of Tasmania's threatened species are also listed as threatened on a national level.

Listing a threatened species

Species considered to be in need of protection can be referred to the Government under the *Threatened Species Protection Act 1995*. The listing and delisting processes for flora and fauna are detailed in the Act and associated Guidelines. Listed species are included in Schedules 3, 4 and 5 of the Act.

Tasmanian threatened species categories are:

- **Extinct:** Species presumed extinct.
- **Endangered:** Species in danger of extinction because their long-term survival is unlikely while the factors causing them to be endangered continue operating.
- **Vulnerable:** Species likely to become endangered while the factors causing them to become vulnerable continue operating.
- **Rare:** Species with a small population in Tasmania that are at risk.

What has changed?

The current Threatened Species Strategy for Tasmania was published in 2000. A copy of the Strategy is available on the Department of Natural Resources and Environment Tasmania (NRE Tas)'s website at <https://nre.tas.gov.au/Documents/threatspstrat.pdf>. The 2000 Strategy has close to 80 performance indicators and for many, no base line data existed at the time of development. On review, the monitoring and evaluation framework has been found to be complex with many performance indicators not supported by tools and data that allow progress to be measured.

Focusing on six key areas, we can draw some conclusions about what has been achieved since 2000. These areas are policies, regulation and compliance; protecting habitat in our Reserve Estate and on private land, identifying and listing threatened species, conservation planning, managing disease, pathogens and invasive species, and species level monitoring and interventions.

A brief summary of progress towards delivery of the Strategy is detailed in the Reflection on Progress section.

Reflections on progress

In November 2000, the current Threatened Species Strategy for Tasmania was published. Since then, the Tasmanian Government, in partnership with key stakeholders, has made significant investments that directly or indirectly support the recovery of threatened species.

Policies, Regulation and Compliance

Many international policies and conventions convey an obligation on Tasmania, including the International Convention on Biological Diversity, the United Nations Sustainable Development Goals and Framework Convention on Climate Change, the Convention on the International Trade in Endangered Species, Agreement on the Conservation of Albatrosses and Petrels, and the Convention on Wetlands of International Importance.

At a national level the *Environment Protection and Biodiversity Conservation Act 1999* and regulations protect and manage nationally and internationally important plants, animals, habitats and places. Conservation of some species is supported by a National Recovery Plan or Conservation Advice.

At a State level, threatened species management is guided by legislation such as the *Threatened Species Protection Act 1995*, the *Nature Conservation Act 2002*, the *Environmental Management and Pollution Control Act 1994*, the *State Policies and Projects Act 1993*, the *Land Use Planning and Approvals Act 1993*, and associated subordinate regulatory instruments – all of which assist in protecting the State's flora and fauna. Other land use legislation, policies and plans also reference sustainability principles and provide protections for Tasmania's native biodiversity (e.g., forest practices, fisheries management, and resource management).

NRE Tas, including a dedicated Threatened Species and Conservation Programs (TSCP) branch, provides specialist scientific advice, tools and information to support the State Government, community and regulators with meeting these obligations and promotes the consideration of conservation values and species protection and recovery as part of land management and sustainable development.

Overall, it can be concluded that there are legislative frameworks in place to provide for consideration of threatened species in approval processes and to support compliance with policies, regulations, and conventions. Nevertheless, risks associated with resourcing assessments, compliance and ensuring continuous improvement in supporting contemporary data, maps and tools and knowledge of species and habitat use, remains challenging.

Ptunarra brown butterfly (*Oreixenica ptunarra*) | Photo - Simon de Salis



Habitat

Sufficient habitat and ideally habitat subject only to natural rates of change for our flora and fauna, is a foundation block for its protection. This includes but is not limited to, habitats that require a level of disturbance for flora and fauna to regenerate.

Tasmania's national parks and reserves provide a significant habitat resource and protection for our threatened species, as well as providing the opportunity to view threatened species in their natural habitat and learn about them through interpretive programs and displays.

The Tasmanian Reserve Estate covers over 3.5 million hectares, including formal and informal reserves on public land, reserves on private land, and Marine Protected Areas. The terrestrial reserve area covers more than 50% of the area of Tasmania and Marine Protected Areas over 144,000 hectares.

Reserves are declared under the *Nature Conservation Act 2002* which sets out the values and purposes of each reserve class. Reserves are managed under the *National Parks and Reserves Management Act 2002* according to objectives for each class of reserve. Objectives of the reserves include recreation, education, cultural, co-operative management with Aboriginal people, research and protection.

In addition to the public Reserve Estate, the Tasmanian Government's Private Land Conservation Program has supported the establishment of reserves on private land, which now cover more than 114,000 hectares.

Many of these private land reserves have been established specifically for the protection of habitat for threatened species, such as the endangered giant freshwater crayfish, swift parrot and Davies waxflower.

The new Threatened Species Strategy will consider other objectives of a reserve including conservation and preservation.

Regional Natural Resource Management (NRM) organisations and Landcare with the support of governments are bringing together industry, land managers and conservation interests to improve the health, productivity and biodiversity of local areas.

The Tasmania-wide Vegetation Mapping Program (TASVEG) is a comprehensive digital map depicting the extent of more than 150 vegetation communities. This map is being continually updated and refined as new information comes to light, providing an important resource to support monitoring programs and management decisions at both State and Commonwealth levels.

Tasmania's strong habitat-focused approach to conservation is providing critical habitat for threatened species and helping protect Tasmania's biodiversity.

Burnie burrowing crayfish (*Engaeus yabbimunna*) | Photo - Michael Driessen



Identifying and listing threatened species

The *Threatened Species Protection Act 1995* (the Act) details the procedure for listing a species. All nominations are considered by the Threatened Species Scientific Advisory Committee, an independent body set up to advise the Minister and the Secretary on the listing and delisting of flora and fauna species. Decisions by the Minister are then gazetted.

A total of 686 species are currently listed as threatened under the Act in Tasmania. The number of threatened species is a snapshot in time and may increase as knowledge of our flora and fauna improves, and consequently it is likely that some species already at risk may not be currently listed. Alternatively, the number of species listed as threatened may decline as new knowledge about species range and population numbers are obtained, resulting in delisting of species.

Table 1 details the change in number of species listed under the Act between 1999 and 2023. The changes in numbers in the different categories below reflects a range of factors, including the movement of species between listing categories as they are reassessed due to new information and improved spatial mapping. It is also a function to some degree on the number of nominations received and assessed throughout the years.

Table 1: Number of species listed under the *Threatened Species Protection Act 1995*

	Extinct		Endangered		Vulnerable		Rare		Total	
	1999	2023	1999	2023	1999	2023	1999	2023	1999	2023
Plants	30	20	36	154	60	76	345	241	471	491
Mammals	1	1	3	7	1	2	2	2	7	12
Birds	4	4	5	18	11	11	6	3	26	36
Reptiles	0	0	1	2	5	4	0	1	6	7
Amphibians	0	0	0	1	1	1	0	0	1	2
Fish	0	1	3	9	5	7	5	2	13	19
Invertebrates	6	3	10	36	19	19	83	61	118	119
TOTAL	41	29	58	227	102	120	441	310	642	686

The number of extinct species in 2000 and in 2023 has declined. This reduction is due to several factors including as an example, four invertebrate species listed as extinct in 1999 which have been rediscovered:

- Lake Fenton trapdoor spider now listed as **Endangered** (the species has been rediscovered, and further research will seek to determine the range of this species).
- Tunbridge looper now listed as **Endangered** (rediscovered at the Type locality and now found at two other locations).
- Miena jewel beetle now listed as **Endangered** (rediscovered in 2013, after extensive field work, range extended).
- Caddisflies - one species previously assessed as extinct is **no longer a valid species** and has been subsumed into another more widespread species.

Conservation Planning

Recovery Plans and Listing Statements are documents which outline information on a species biology, habitat and distribution, and provide guidance on the key threats, research and management actions necessary to address the decline, support the species recovery and enhance its chance of long-term survival in the wild. In Tasmania, 47 per cent of threatened species are covered by Listing Statements or Recovery Plans. The drafting and development of these tools requires intensive input from leading species experts, academics, managers, government, and industry representatives.

During the process for developing these documents the Scientific Advisory Committee has the opportunity to evaluate the data and knowledge for a species, including information related to total population, geographical range, threats and decline in numbers. The Threatened Species Community Review Committee also has the opportunity to consider draft Recovery Plans and Listing Statements. This process ensures that these conservation planning resources have a well-rounded consideration for the ecological and socio-economic aspects of threatened species management, to support practical approaches to species recovery and management.

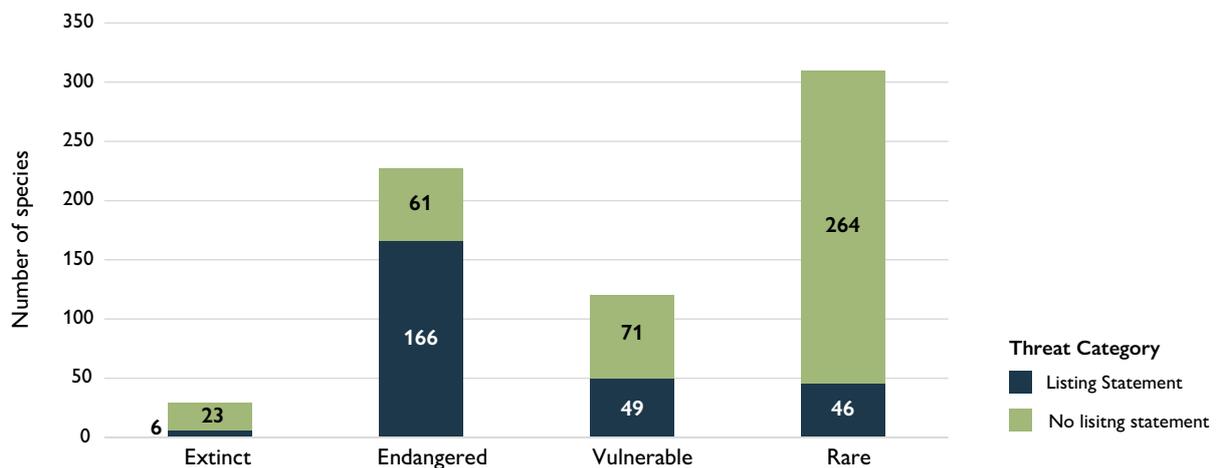


Figure 1: Listed species with or without Listing Statements

Recovery Plans can be long, complex documents which take several years to be developed and approved. Listing Statements are usually shorter and less detailed and are often developed when a species is listed as threatened. While progress is being made in preparation of Listing Statements and Recovery Plans for key threatened species their development is resource intensive. In addition, many Recovery Plans are led nationally by Recovery Teams with the majority of members based in other parts of Australia and consequently may not fully reflect Tasmanian priorities.



Managing Pests, Diseases and Invasive Species

Tasmania's island status and its strict biosecurity protocols provide the State with a greater natural advantage for preventing incursion of invasive species and pathogens than individual Australian mainland states. Tasmania has strong biosecurity measures that are underpinned by legislation and policies. This includes tight border restrictions on species of higher risk, and control of species that can enter and be kept in the State. Despite this, external biosecurity risks and threats combined with a changing climate are increasing Tasmania's exposure to incursions of pests, diseases, and invasive species not currently present in the State, and which increases the need to be prepared for response activities.

Biosecurity controls and management programs help to limit the invasion and establishment of exotic pest plants and animals, restricting their impact on the State's ecology, agricultural enterprises and economy, however they don't reduce the risk to zero. Increased movements of people and goods into the State, climate change, and natural means of dispersion (e.g., wind borne) of some pests mean managing the State's biosecurity status to minimise their impacts requires ever increasing demands on an adaptable biosecurity system.

There is a broad spread of activities undertaken as part of this system. One example is the management of vertebrate pests and weeds on Tasmania's high priority off-shore islands, targeting the eradication of vertebrate pests that predate on native fauna (e.g., seabirds) and destroy vital habitat.

A comprehensive Biosecurity Strategy has been developed for the Tasmanian Wilderness World Heritage Area ([Tasmanian Wilderness World Heritage Area - Biosecurity Strategy 2021-2031 \(nre.tas.gov.au\)](https://nre.tas.gov.au)), identifying goals to address biosecurity risks in this area of important natural and cultural value.

Overall, evidence suggests that managing pests, diseases and invasive species has been, and continues to be, a priority to protect and recover threatened species.

Species level monitoring and interventions

At times, urgent interventions have been necessary to protect endangered and vulnerable species from threats and allow wild populations to stabilise and recover. Tasmania has collaboratively invested in targeted recovery actions to support a range of threatened species including, for example, the Orange-bellied parrot, Tasmanian devil, swift parrot, shy albatross and Maugean skate.

The Tasmanian Government, through specialised units such as the TSCP, deliver priority threatened species programs in partnership with stakeholders including NRMs and environmental not-for-profits, the Australian Government, local government, research institutes, industry organisations and landowners. The teams also provide scientific advice, tools, and information regarding conservation and recovery actions.

Monitoring of threatened species enables detection of changes to a species' status and trends and is crucial to determine the effectiveness of recovery actions. Data collection through a range of short and long-term monitoring and research projects and through citizen science activities contributes to our knowledge of species distributions and habitat use. In addition to larger scale projects and programs, a prioritised approach has been developed within the TSCP for monitoring across other listed species.

The Tasmanian Natural Values Atlas (NVA) is a key tool for capturing, storing, spatialising and making data accessible that supports efforts to manage, monitor and protect threatened species. The data supports important scientific research and provides valuable metrics to underpin listing processes. The NVA can be used in conjunction with TASVEG to provide species information for selected habitats.

QUESTION 1: *What key elements in the 2000 Threatened Species Strategy should be considered when developing the new Strategy?*

Threats

Understanding and mitigating against threats to native flora, fauna and ecological communities that are at risk or are threatened is fundamental to protecting and recovering threatened species. The new Strategy will need to take into account current and emerging threats if it is to be successful.

Key threats to Tasmania's native flora and fauna named in the 2000 Strategy included the clearance of native vegetation; pests, weeds and diseases; degradation of water systems; inappropriate use of fire; illegal harvesting; and impacts of stock.

More recently climate change and associated risks have emerged. Some species may adapt to the new environmental conditions, or follow shifts in their preferred habitats, others will not have the capacity for change. The cumulative impact of multiple threats adds to the complexity of risk mitigation.

After considering scientific literature, and accounting for Tasmania's unique natural environment, a high-level summary of the key threats to threatened species in Tasmania, including some examples for context, is provided for feedback (Figure 2).

QUESTION 2: *Are there any key threats to Tasmania's native species that may be missing, and why are they important?*



Miena jewel beetle (*Castiarina insculpta*) | Photo - Simon Grove Tasmanian Museum and Art Gallery

Figure 2: Key threats to threatened species in Tasmania



Habitat Loss, Declining Quality and Fragmentation

Habitat fragmentation and loss has been implicated in, for example, the declines of threatened species including the swift parrot (*pictured*) and giant freshwater crayfish. Loss of connectivity may limit threatened species recovery potential, and amplify other threatening processes.



Climate Change

Climatic modelling has identified that the preferred environmental conditions for numerous species (e.g. Giant kelp *pictured*) and their habitat (e.g. Tasmania's unique alpine communities) will either shift or no longer exist in the future as a result of climate change.



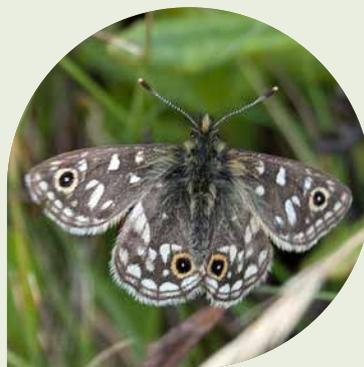
Decisions Guided by Incomplete Knowledge

With approximately 33,000 native species in Tasmania, it is unsurprising that our knowledge about their biology, conservation status, habitat requirements, and drivers of population declines is incomplete. For example, we know that cascading effects can occur following the decline of species, but the effect of declining populations of Tasmanian devils (*pictured*) are only partially understood. We also don't understand the current causes of mortality of Orange-bellied parrots during migration (a research project has been initiated to address the latter).



Disease, Pathogens and Pollutants

Phytophthora cinnamomi and myrtle rust fungus are two of the most well known pathogens leading to disease in susceptible plants. *Phytophthora* is recognised as a national threat to biodiversity, and its impact is not limited to the plants and plant communities it infects and kills, but also the animals that rely on these plant communities for habitat.



Invasive Species and Predation

The detrimental impact of feral cats and uncontrolled domestic cats on wildlife is widely recognised and projects are underway to address this threat. Less known impacts occur too, for example, predation of swift parrots by sugar gliders, and European wasp predation on Ptunarra brown butterflies (*pictured*) which has resulted in local population declines.



Unsuitable Fire Regimes

Burning too often, too little, or with too much intensity has been demonstrated to be a key driver of habitat modification leading to decline in a broad range of species including the King Billy pine and New Holland mouse.

Case Studies

Evidence-based Decision Making

Save the Tasmanian Devil Program

The emergence of Devil Facial Tumour Disease (DFTD) resulted in a significant decline in Tasmanian devil numbers. By 2002, there were legitimate concerns that DFTD could cause devils to become extinct in the wild, with some model projections suggesting extinctions in local areas could occur within 25-35 years.

Fortunately, collaborative investment in research and monitoring has shown that despite initial fears, the devils have persisted in the wild with the disease.

The Save the Tasmanian Devil Program now focuses on four key areas with the aim of achieving a resilient wild devil population that needs limited management intervention. These are:

- robust long-term monitoring and evaluation regimes that enable timely assessment of wild devil population status and inform appropriate management response;
- managing and maintaining a captive insurance population;
- providing specialist advice across a range of sectors; and
- facilitating targeted research collaborations to address key knowledge or technical gaps.

DFTD remains the single largest cause of devil decline and the resulting small, isolated populations across the landscape are at greater risk of other factors including severe bushfires, roadkill, and loss of genetic diversity.

Collaboration with industry and research institutions continues to play a key role in devil recovery efforts. Captive breeding institutions from around Australia hold devils which are managed collectively as a disease-free genetically diverse insurance population to guard against extinction. Research institutions from around the world continue to address key knowledge gaps in understanding DFTD and other threats to devils.

These include the Menzies School of Medical Research which for over a decade has been working towards an effective vaccine and targeted vaccine delivery system, the University of Tasmania's School of Natural Sciences which has been investigating the dynamics of DFTD and devil genetics, the University of Sydney which has research across a range of devil-related fields including best practice genetic management, and the University of Cambridge which has been tracking the movement of different disease strains across the State and through time at monitored sites.



Tasmanian devil (*Sarcophilus harrisi*) | Photo - Jonathan Ayres

Collaborative Action

Orange-Bellied Parrot Tasmanian Program

The migratory orange-bellied parrot (OBP) is one of Australia's most threatened bird species. The last known breeding site is at Melaleuca in the Tasmanian Wilderness World Heritage Area.

A foundation of the recovery effort is a well-managed captive OBP insurance population, which provides birds for release to supplement the wild population. The captive OBP population consists of approximately 570 individuals across five breeding institutions. NRE Tas partners with volunteers, researchers and breeding institutions to deliver a range of management and monitoring recovery actions for the wild OBP population, including:

- annual monitoring of the size and survival of the wild population and breeding success;
- providing nest boxes and supplementary food;
- managing direct threats to survival and breeding;
- monitoring population migration;
- undertaking annual planned ecological burns to improve foraging habitat quality; and
- releasing captive-bred adults and juveniles at Melaleuca each spring, and end of summer.

These actions have produced promising results. In 2022-23 the wild population reached its highest level in over 15 years, with 77 wild returns. This season also saw investment into the first proof of concept tracking trial of migrating OBPs in partnership with Zoos Victoria. This foundational trial will build on our knowledge of OBP migration ecology and provide the first steps towards improving the understanding of migration and over-winter survival.



Orange-bellied parrot (*Neophema chrysogaster*) | Photo - Jan Wegner

Towards a New Threatened Species Strategy

The new Strategy will be informed by contemporary science and modern understanding of threatened species management and developed in consultation with the Scientific Advisory Committee, the Community Review Committee, Tasmanian Aboriginal People and the broader Tasmanian community. Consultation will be undertaken at each step as detailed in the diagram below.

Feedback on this Discussion Paper will be summarised in a Consultation Summary Report. The summary report will identify themes for workshopping during the targeted engagement stage of the strategy development.

Following the release of the Strategy, an Implementation Plan will be developed, and this will identify actions that will be undertaken to deliver the Strategy. The Strategy will be supported by an evaluation framework and performance indicators to enable progress towards delivery of the Strategy to be measured over time, and for adaptive management.

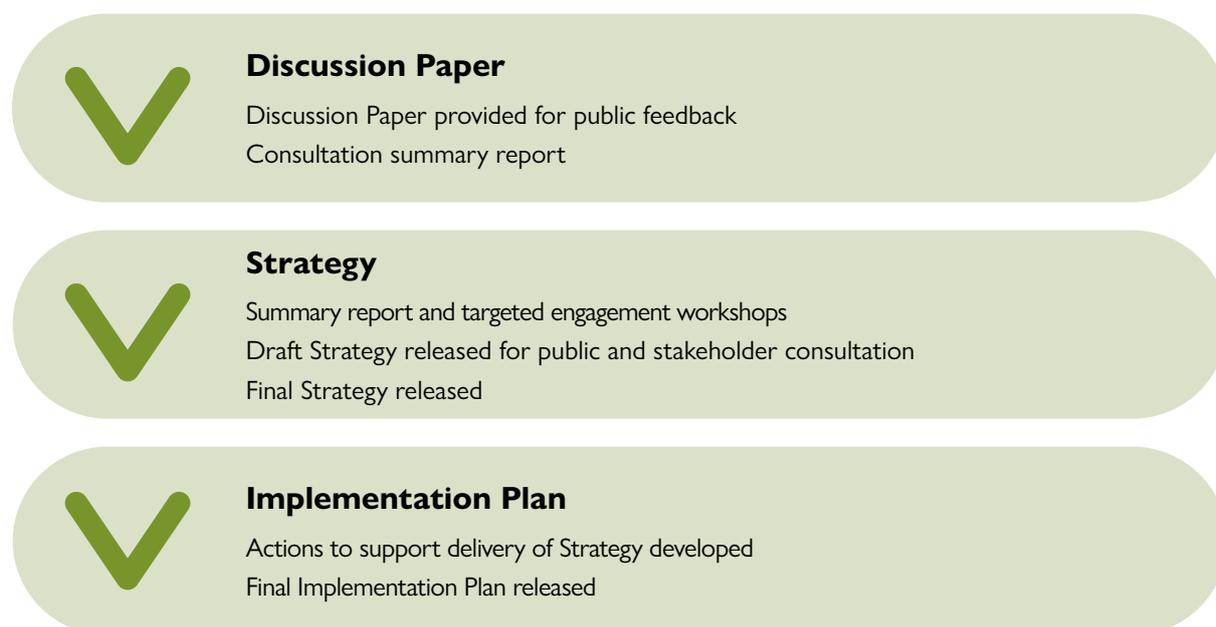


Figure 2 – Summary of the Strategy development process and its implementation

Vision

Threats to the survival of Tasmania's rich biodiversity and ecosystems are managed in an integrated and adaptive way to reduce future species decline and create pathways to recovery for those that are already threatened.

We will deliver our vision through collaboration, evidence-based decisions, adaptive management, and focused recovery efforts, targeted at where we can make the most significant impact.

Objectives

The aims of the 2000 Strategy were to:

- ensure that threatened species can survive and flourish in the wild;
- ensure that threatened species and their habitats retain their genetic diversity and potential for evolutionary development; and
- prevent further species becoming threatened.

In considering the objectives for the new Strategy it is proposed that an additional objective be considered:

- foster and facilitate a shared responsibility for improving the status of Tasmania's threatened species and conservation efforts.

This recognises the importance of collaborative action to address key threats and implement effective management strategies.

Guiding Principles

In developing and delivering the new Strategy, the following guiding principles are proposed:

1. **Evidence-based:** enable evidence-based decision making by applying scientific expertise and robust data.
2. **Collaborative:** work together to conserve or improve the status of Tasmania's threatened species.
3. **Innovative:** apply novel approaches to meet the new challenges presented by a changing climate and other emerging and unresolved threats.
4. **Effective:** strategically and transparently present the case for investment, and target threatened species activities for maximum impact.
5. **Accountable:** measure our progress through reporting and evaluation frameworks.

QUESTION 3: *Do the proposed Vision, Objectives and Guiding Principles provide a sound foundation for the Strategy and Implementation Plan? If not, why not? Are there any important principles missing and, if so, what are they?*

Resource Prioritisation Framework

Existing prioritisation frameworks will be enhanced to help identify where investment in threatened species management and recovery can be strategically targeted. The framework will provide an objective, transparent, and adaptable prioritisation process. This will be based on standard risk management principles for ensuring that resources and efforts for threatened species management and recovery are targeted where we can achieve the maximum impact.

Possible prioritisation principles are identified below to guide where activity and investment is focused:

Prioritisation principle	
Urgency	Prioritising species based on their likely threat of extinction.
Potential to recover	Prioritising species with the best survival prospects, where affordable efficient interventions can be delivered that have the potential to deliver lasting recovery.
Impact	Prioritising recovery work for species and habitat where activities will deliver broader impact across multiple species.
Building on past successes	Prioritising based on alignment with successful programs and where existing investment can be leveraged.
Pre-emptive action	Prioritising based on potential to prevent the need for future urgent/costly species level interventions.
Iconic species	Prioritising species that are endemic to Tasmania or Australia or are at the limits of their range.
Importance to community	Prioritising species that are culturally significant to Tasmanian Aboriginal people and that are valued by our community.
A broad cross section	Ensuring prioritising is balanced across different species selected from different parts of Tasmania and broadly representative of all species in the state.

QUESTION 4: *How important are each of the prioritisation principles proposed above? Should they be weighted with some being more important than others? Are there any important principles missing and, if so, what are they?*

Strategic Priorities

Strategic priorities will be included in the new Strategy. These strategic priorities will be populated with actions through the consultation process and targeted scientific and stakeholder workshops to help deliver the Implementation Plan.

It is proposed that the following six strategic priorities form the pillars of the new Strategy and Implementation Plan.

Strategic priority	Action areas
Science and knowledge	<ul style="list-style-type: none"> • Science and knowledge are applied and used to develop practical policy, management, and recovery solutions. • Sustainable industry development and recovery of threatened species are managed through appropriate tools and technologies. • Emergency response (e.g. bushfire) tools for public reserve land support prioritisation to reduce the impact on threatened species.
Planning and management	<ul style="list-style-type: none"> • Practical and effective conservation planning, including landscape level planning, supports management, recovery, and preparedness for new threats. • Climate change adaptation and resilience is built into planning and management.
Legislation, policy, compliance	<ul style="list-style-type: none"> • Strong and effective contemporary regulatory and legislative frameworks underpin the protection and management of threatened species. • The Common Assessment Method for listing of threatened species is implemented which supports a consistent national framework.
Risk-based conservation and protection	<ul style="list-style-type: none"> • Strategic species interventions based on risk management are supported to help avert extinctions and further declines. • The extent, connectivity and condition of habitat is maintained and, where appropriate, improved. • Consider situations where appropriate disturbance regimes may be in the best interest of a species.
Partner and engage	<ul style="list-style-type: none"> • Partnerships and codesign processes help align effort, ensure effective coordination, and deliver on shared objectives, particularly for migratory species moving between jurisdictions. • Innovative public and private funding models deliver investment in threatened species protection, recovery, and threat mitigation. • Community members and other stakeholders champion our threatened species and are aware of their obligations to protect nature.
Monitor and evaluate	<ul style="list-style-type: none"> • Monitoring, evaluation, and reporting inform adaptive management approaches. • Appropriate review periods are incorporated in Strategic Planning.

QUESTION 5: Do you think the proposed Prioritisation Framework and Strategic Priorities are appropriate? What would you add or change?

QUESTION 6: What work are you or your organisation undertaking, or planning to undertake, that aligns with the proposed objectives and strategic priorities, and what opportunities are there for your organisation to partner to deliver priorities over the next 5-10 years?

QUESTION 7: What research and innovation priorities could support Tasmanian threatened species management over the next 5-10 years?

QUESTION 8: What would encourage you to support and invest in threatened species management?

Tools For Managing Threatened Species

A range of planning and management tools are used to achieve biodiversity outcomes and protect and manage our threatened species. Below are some examples of existing approaches which are currently employed in Tasmania, as well as emerging approaches that are being explored in Australia and internationally.

Existing approaches	Examples
Biosecurity	<ul style="list-style-type: none"> Management of pest plant and animal populations focused on the timely eradication or control of new populations and collaborative management at a landscape-scale.
Increase population/species resilience	<ul style="list-style-type: none"> Revegetation around patches of remnant bushland, to increase the size of remnant patches and create a buffer from external influences. Replanting understorey plant species to create habitat. Increasing connectivity between populations (e.g. wildlife corridors^a). Improving landscape permeability by managing the matrix between remnant populations^b (e.g. feral predator control). Insurance populations.
Intensive site management	<ul style="list-style-type: none"> Placing small cages over native orchids to prevent their grazing by pest and native animals. Small-scale ecological burns to stimulate germination. Supplemental feeding.
Population enhancement	<ul style="list-style-type: none"> Translocations between wild populations. Captive breeding programs to provide individuals to enhance wild populations e.g. NRE Tas's <i>Orange-bellied Parrot Program</i>.

^a Keeley A.T.H., Basson G., Cameron D.R., Heller N.E., Huber P.R., Schloss C.A., Thorne J.H., Merenlender A.M. (2018) Making habitat connectivity a reality. *Conservation Biology* 32:1221-1232.

^b Ramírez-Delgado J.P., Di Marco M., Watson J.E.M., Johnson C.J., Rondinini C., Llano X.C., Arias M., Venter O. (2022) Matrix condition mediates the effects of habitat fragmentation on species extinction risk. *Nature Communications* 13:595.

Emerging approaches	Examples
Assisted evolution	<ul style="list-style-type: none"> • Selective breeding. • Translocations to enhance gene flow. • Genetic modification.
Assisted migration	<ul style="list-style-type: none"> • Assisted migration to facilitate the movement of plants and animals into areas of suitable habitat.
Biobanking	<ul style="list-style-type: none"> • Collection and cryogenic storage of biological material from threatened species.
Biodiversity certification schemes	<ul style="list-style-type: none"> • Industry supported voluntary biodiversity certification schemes provide landholders with the opportunity to capitalise on sympathetic land management practices through the application of specific branding that identifies their sustainability credentials – e.g. the Australian Farm Biodiversity Certification Scheme.
Carbon – biodiversity co-benefit schemes	<ul style="list-style-type: none"> • Maximising carbon capture through the growth of trees and large shrubs, as well as promoting the potential benefits of additional layers of vegetation structure – groundcover and sub-shrubs – which create habitat for both wildlife and other plant species. • Although in their infancy, several co-benefit schemes are operating in Australia, e.g.; Clean Energy Regulator (Emissions Reduction Fund), Queensland Government (Land Restoration Fund), Government of Western Australia (Carbon Farming and Land Restoration Program).
Climate-adjusted provenancing	<ul style="list-style-type: none"> • Collection of plant seed from a species' population in a dry locality and sowing them within a population of the same species at a wetter location, to assist and accelerate the second population's adaptation to a drying climate^c.
Conservation of foundation species	<ul style="list-style-type: none"> • Appropriate management of foundation species to ensure sufficient quantity and quality of habitat is available to maintain threatened species populations.
De-extinction	<ul style="list-style-type: none"> • The application of genetic techniques such as cloning and genome editing using genetic material to create a species that resembles, or is, an extinct species.
Fenced refuges	<ul style="list-style-type: none"> • Development of systems of fenced refuges to provide short-term protection for native species. • While the majority of these refuges are small, some are now encompassing whole landscapes; e.g. Australian Wildlife Conservancy (Karakamia Wildlife Sanctuary), <i>Marna Bangarra</i>.
Landholder stewardship programs	<ul style="list-style-type: none"> • Voluntary programs for landholders to set aside portions of their land for the purposes of biodiversity conservation. • Such schemes operate widely across Australia, with some of the larger scale examples in Tasmania being the conservation covenant scheme (NRE Tas Private Land Conservation Program) and the Midlands Conservation Partnership (Tasmanian Land Conservancy and Bush Heritage Australia).

^cHarrison P.A (2021) Climate change and the suitability of local and non-local species for ecosystem restoration. *Ecological Management and Restoration* 22:Special edition No 2

Emerging approaches	Examples
Rewilding	<ul style="list-style-type: none"> Enhancement of species populations and/or the reintroduction of highly interactive species that have a broad and significant influence over the health of a system. Rewilding programs can also encompass the reinstatement of abiotic processes, such as fire regimes (e.g. pyrodiversity^d; Firesticks cultural burning^e), soil processes (e.g. soil biota^{f,g}) and hydrological regimes (e.g. restoring flows and flood regimes^h).
Species offset funds	<ul style="list-style-type: none"> Programs to offset biodiversity losses.

QUESTION 9: *Do you have examples of cost-effective management and protection tools that you believe would be worth exploring in Tasmania? Are any of the proposed emerging approaches more or less suitable to Tasmania?*

^d Bowman D.M. J. S., Legge S. (2016) Pyrodiversity—why managing fire in food webs is relevant to restoration ecology. *Restoration Ecology* 24:848-853.

^e Mariani M., Connor S.E., Theuerkauf M., Herbert A., Kuneš P., Bowman D., Fletcher M.-S., Head L., Kershaw P., Haberle S.G., Stevenson J., Adeleye M., Cadd H., Hopf F., Briles C. (2022) Disruption of cultural burning promotes shrub encroachment and unprecedented wildfires. *Frontiers in Ecology and the Environment* 20:292–300.

^f Contos P., Wood J.L., Murphy N.P. Gibb H. (2021) Rewilding with invertebrates and microbes to restore ecosystems: Present trends and future directions. *Ecology and Evolution* 11:7187-7200.

^g Contos P., Murphy N.P., Gibb H. (2023) Whole-of-community invertebrate rewilding: Leaf litter transplants rapidly increase beetle diversity during restoration. *Ecological Applications* 33:e2779.

^h Rideout N.K., Wegscheider B., Kattilakoski M., McGee K.M., Monk W.A., Baird D.J. (2021) Rewilding watersheds: using nature's algorithms to fix our broken rivers. *Marine and Freshwater Research* 72: 1118-1124.

Have Your Say

How to Provide Feedback

Your feedback will help inform the development of a revised Threatened Species Strategy for Tasmania. All written submissions must be received by 5 PM (AEDST) **Friday 22 Dec 2023**.

Feedback may be submitted three ways:

- Online Form: <http://haveyoursay.tas.gov.au/threatened-species-strategy-discussion>
- Email Response to Questions below: ThreatenedSpeciesStrategy@nre.tas.gov.au
- Post Response to Questions below:

ATTN: Threatened Species Strategy Discussion Paper
Environment Strategic Business Unit
NRE Tas
GPO Box 44
Hobart 7001

Questions

To guide your submission the questions that have appeared throughout the document are provided below.

QUESTION 1: *What key elements in the 2000 Threatened Species Strategy should be considered when developing the new Strategy?*

QUESTION 2: *Are there any key threats to Tasmania's native species that may be missing, and why are they important?*

QUESTION 3: *Do the proposed Vision, Objectives and Guiding Principles provide a sound foundation for the Strategy and Implementation Plan? If not, why not? Are there any important elements missing and, if so, what are they?*

QUESTION 4: *How important are each of the prioritisation principles proposed above? Should they be weighted with some being more important than others? Are there any important principles missing and, if so, what are they?*

QUESTION 5: *Do you think the proposed Prioritisation Framework and Strategic Priorities are appropriate? What would you add or change?*

QUESTION 6: *What work are you or your organisation undertaking, or planning to undertake, that aligns with the proposed objectives and strategic priorities, and what opportunities are there for your organisation to partner to deliver priorities over the next 5-10 years?*

QUESTION 7: *What research and innovation priorities could support Tasmanian threatened species management over the next 5-10 years?*

QUESTION 8: *What would encourage you to support and invest in threatened species management?*

QUESTION 9: *Do you have examples of cost-effective management and protection tools that you believe would be worth exploring in Tasmania? Are any of the proposed emerging approaches more or less suitable to Tasmania?*

Confidentiality

Your feedback will be treated as a public document unless you indicate that all or any part of your feedback is confidential. Your feedback may be published in full or included in a published summary report of submissions.

Personal information will be managed in accordance with the *Personal Information Protection Act 2004*.

Information provided to the Government may be provided to an applicant under the provisions of the *Right to Information Act 2009*. Such requests, including determining whether information is exempt from release, will be handled in accordance with provisions of the Act.

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