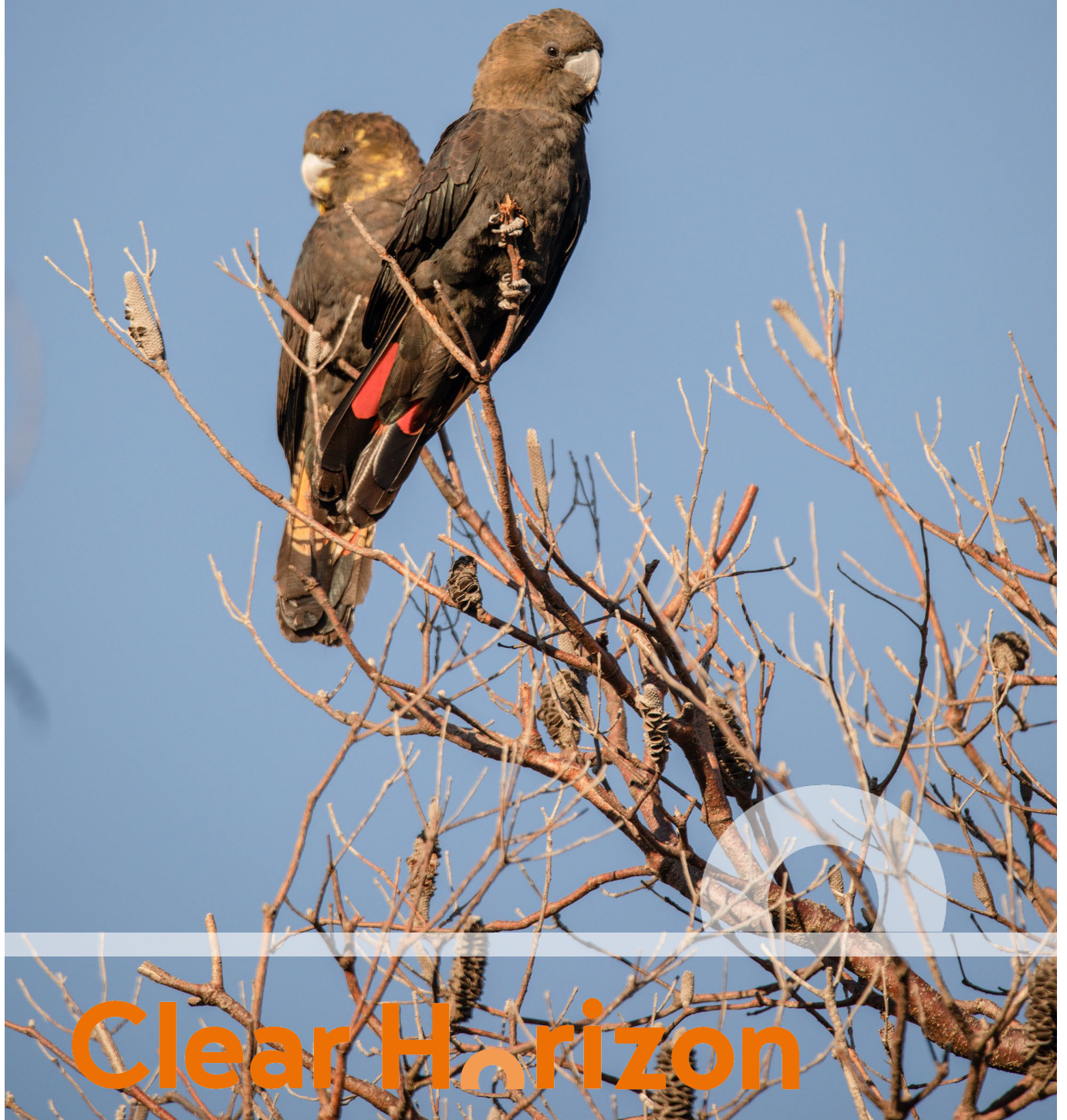


SAVING OUR SPECIES

2016-2021 PROGRAM EVALUATION

**Prepared for the Department of Planning and
Environment**

18th May 2022



Clear Horizon

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Acronyms

Acronym	Description
ACT	Australian Capital Territory

Acronym	Description
ASR	Australian Seabird Rescue
BCD	Biodiversity Conservation Division
BCT	Biodiversity Conservation Trust
COVID	Coronavirus 19
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DPE	Department of Planning and Environment
IAR	Information Asset Register
IPA	Indigenous Protected Area
ISP	Integrated Spatial Prioritisation
IWG	implementation working group
KEQ	Key Evaluation Question
KTP	Key Threatening Process
LLS	Local Land Service
LPI	Living Planet Index
MER	Monitoring, Evaluation and Reporting
NGO	Non-Government Organisation
NPWS	National Parks and Wildlife Service
NSW	New South Wales
SEED	Sharing and Enabling Environmental Data
SoS	Saving our Species
SPC	Species Project Coordinators
STG	Science Technical Group
TEC	Threatened Ecological Community
WWF	World Wildlife Fund

Executive summary

Introduction

Saving our Species (SoS) is a conservation program with the objective of maximising the number of threatened species and ecological communities that are secure in the wild in NSW for 100 years. It delivers on the legislative commitments of the NSW Government under the NSW Biodiversity Conservation Act 2016. The SoS Program (the Program) commenced in July 2016 when the Government committed \$100 million over five years (July 2016 to June 2021).

The purpose of this evaluation was to analyse and report on the SoS Program's overall performance and achievements between 2016-2021 and to support strategic decision-making and continuous improvement of the Program into the future. The evaluation assessed the effectiveness of the Program in contributing to its objectives, including the effectiveness of Program science and research activities, and partnering and engagement activities, in supporting the Program. The evaluation also assessed the Program's foundational processes. The evaluation was guided by a set of key evaluation questions and case study focus areas and included an in-depth desktop review of the existing Program documentation (including past evaluations, audits and scientific reviews) and in-depth stakeholder interviews.

Key findings

Key findings are made for species management and research outcomes, Program partnership and engagement, and Program processes.

Species management and research outcome

The SoS Program has made substantial progress towards securing threatened species in the wild in the next 100 years, through a substantial increase in the numbers of threatened species and ecological communities being serviced (from 95 to 472 combined), and an increase in the number of Key Threatening Processes (KTPs) being researched and/or managed (from 0 to 16). Of the site-specific threatened species managed, 89% (260 of 292 species) are now considered to be 'on-track' to be secure in the wild in the next 100 years. Since the Program commenced in 2016, the number of sites managed for conservation have increased substantially (from 234 to 978 sites). The Program adapted quickly and effectively to the catastrophic 2019/20 Black Summer bushfires to deliver emergency species support to 90% of fire-affected threatened species (371 of 412 threatened species). Scientific reviews and analysis of the Program's achievements to date provided positive insights, including that, for most threatened species reviewed, the management actions being undertaken through the SoS Program are likely to increase the likelihood of species viability, and that the Program may already be reversing the trajectory of decline for some species.

Scientific research activities undertaken across the Program contributed valuable knowledge that both supported Program-level decision making and informed species management actions. However, the evaluation found that the research projects could be better aligned to address information gaps for prioritised species and the needs of on-ground practitioners. The Program invested 5% of its overall budget to scientific research activities, a proportion that is in line with international best practice for conservation programs.

Program partnerships and engagement

Building and maintaining partnerships and connecting potential partners has been critical to the success of the SoS Program. Across the Program, partnerships have been effective for achieving mutual goals that align with SoS objectives and for leveraging additional support. External partnerships brought \$31 million in co-funding and in-kind support, from 67 partners. A range of partnership types were effectively utilised to support threatened species management, including co-investment where extensive landscape management is required, contestable grants programs to support community involvement in on-ground projects, landholder agreements to implement long-term monitoring and management actions, and research partnerships. The SoS approach to partnerships has demonstrated ongoing commitment to improve the management and delivery of Partnerships, including the employment of a Partnership Manager and development of a partnership strategy.

SoS and partner organisations facilitated a considerable number of community engagement and creative communications activities, contributing to greater awareness of threatened species conservation among targeted communities, increasing citizen science and volunteer engagement in species management, and supporting partnership establishment. The Program's communication strategy was found to have supported creative and impactful communications, while its engagement strategy has continued to evolve and improve.

Aboriginal people and communities participated in over 60 threatened species management projects over the 2016-2021 period, and high-level guidance on engaging Aboriginal people was produced. SoS program engagement with Aboriginal communities and development of partnerships was driven from the ground-up through pre-existing relationships and where there was interest and opportunity for Aboriginal participation in the SoS projects. At the program level however, the focus on cost-effective outcomes for individual species, informed by science-based prioritisation, has limited the integration of Aboriginal ways of working and Aboriginal knowledge into the Program design.

Program design

The SoS program is effectively utilising the species prioritisation approach for decision making about program efforts and funding. Recognised as best practice science, species investment prioritisation decisions are based on cost effectiveness reflecting the likelihood of success. Prioritisation occurs at two levels – prioritisation across the nine management streams, and species prioritisation within the streams. The program distributes funding across the management streams based on this prioritisation approach, with 91% of operating funds allocated to on-ground management of high-priority species, and the remaining funds allocated to lower priority species streams for improving information for management or supporting management efforts with a lower likelihood of success. The limitations of the prioritisation approach are known and SoS has demonstrated its commitment to the ongoing review and continuous improvement of the prioritisation process as new data and information becomes available.

The Program implements an established effective project MER framework resulting in an increasing number of threatened species with regular monitoring activities and documentation of monitoring and evaluation approaches. Project MER plans are supporting on-ground species monitoring and project adaptive management. However, the quality of MER across projects is inconsistent - with examples of excellent project MER – described as exemplars of 'global best practice', and other examples where MER was found to be incomplete, not scientifically robust, or not being effectively utilised for continuous improvement. The SoS Technical Group (STG) review process utilises MER information and research to support the continuous improvement of management strategies and actions within SoS.

A range of information management systems are in use across the program to support program delivery, and while some individual systems are satisfying their intended purposes, overall information management has not met the needs of program staff and partners to support program and project level decision-making, reporting and continuous improvement.

Program governance has matured through the program period to become one of the Program's key enablers, ultimately supporting the effective functioning of the Program.

A number of continuous improvement processes have effectively facilitated the identification of program design and delivery improvements. While several improvement opportunities have been implemented, there does not appear to be a process for prioritising identified improvement opportunities to ensure their timely implementation.

The implementation of the Regional Delivery model has enabled program teams to coordinate delivery more effectively within the regions, though enabling regional teams to meaningfully contribute to program level decision-making remains a challenge.

Recommendations

Strategic recommendations

1. Establish a clear and transparent Program-level performance framework that enables an assessment of the Program's contribution to its primary objective – increasing the security of threatened species in the wild for the next 100 years - and an assessment of the program's influence on species rates of decline or improvement. The framework should bring together the prioritisation framework –across the nine management streams and the prioritisation of the species within them – to inform program-level assessment. The program performance framework should consider the use of a rubric, which builds on the success of the traffic light system used in the site-based management stream, to enable the use of both qualitative and quantitative evidence of various strengths and from different sources in program performance assessment. The program should finalise development required to report on species population trajectories effectively.
2. Prioritise research activities to ensure they both target the information needs of on-ground species managers and facilitate collaborative partnerships between on-ground managers and researchers - to ensure research is useful and used.
3. Incorporate Aboriginal aspirations into the program framework, to better demonstrate the program's recognition of the value of Aboriginal knowledge and provide opportunities for participation in effective species conservation. This will require establishing appropriate governance and Aboriginal-identified roles at the program level to lead the incorporation of Aboriginal aspirations into SoS program design and identification of opportunities for mutual outcomes. At the project level continue to work flexibly to enable communities to authentically participate in threatened species conservation.
4. Consolidate program-level continuous improvement processes under one strategic monitoring, evaluation and learning (MEL) framework that reflects the maturity of the Program. The MEL framework should ensure all program level monitoring, evaluation and learning activities, including scientific reviews and program performance frameworks are integrated, strategic and useful.

Operational recommendations

5. Continue to refine the Program prioritisation processes to ensure transparent and strategic investment decisions across management streams. To support assessments of species management cost-effectiveness in a consistent and transparent manner across management streams, consider developing a rubric with a common set of criteria that accommodates the use of non-scientific information sources, such as community values (as used in the iconic species) and Aboriginal aspirations and knowledge. This could also help inform the program performance framework rubric and build on recent work to improve landscape-level spatial complementarity assessments.
6. Continue to refine program level information management systems to meet the needs of program staff (including on-ground staff) and program partners to support program and project implementation and review. This should be supported with engagement and capacity building across the Program to ensure buy-in and effective use of information management systems.
7. Continue to refine the program-level approach to communications, engagement and partnering - to ensure these activities are strategic and targeted, and that the outcomes and achievements across the Program are monitored, reported and used to inform continuous improvement.
8. Establish an appropriate method to demonstrate the significant contribution of private landholders to the achievement of SoS Program outcomes. With approximately 50% of active SoS sites on private land, specific consideration is needed to better understand and demonstrate the contribution of these stakeholders to maximising the security of threatened species and ecological communities in NSW.
9. Continue to deliver MER capacity building activities to ensure Project MER is of consistently high-quality across the Program, and that staff are clear on how Project MER informs program-level decision making and reporting.

1 Introduction

1.1 Program background

Saving our Species (SoS) is a conservation program with the objective of maximising the number of threatened species and ecological communities that are secure in the wild in NSW for 100 years. It delivers on the legislative commitments of the NSW Government under the NSW Biodiversity Conservation Act 2016 through the conservation of threatened species and ecological communities (TECs) and addressing key threatening processes (KTPs) listed under the NSW Biodiversity Conservation Act 2016.

The SoS Program (the Program) is a strategic and innovative NSW-wide approach to addressing the growing number of plants and animals that are faced with extinction. The SoS Program sets a clear management framework to prioritise between species and the necessary actions required to maximise the number of threatened species and TECs that are secure in the wild in NSW for 100 years.

The Program initiated in 2011/12 with a \$7.95 million budget over the 4 years to June 2016. It substantially commenced in July 2016 when the Government committed \$100 million over five years (July 2016 to June 2021¹) to 'maximise the number of threatened species that can survive securely in the wild in NSW for the next 100 years. The Program has now been extended with another \$75 million announced for the coming five years (July 2021 to June 2026²) to continue with this objective.

The Program is managed by the Environment and Heritage Group within the NSW Government Department of Planning, and Environment (DPE) and delivered by stakeholders across DPE and externally, from local government, Local Land Services (LLS) and communities.

To date, the Program has undergone three interim evaluations (2016/17, 2017/18 and 2018/19) conducted by external consultancies, one internal audit, two scientific reviews, and a cost-benefit analysis (as part of the Program's business case development in 2021). In line with the framework, this is the final evaluation to be delivered (through this contract) that reports on the Program's overall performance and achievements from 2016 to 2021.

1.2 About the evaluation

The purpose of this evaluation was to analyse and report on the SoS Program's overall performance and achievements between 2016-2021 and to support strategic decision-making and continuous improvement of the Program into the future. The evaluation was designed to satisfy the requirements of the Biodiversity Conservation Act (2016) for a 5-year review and the NSW Government Program Evaluation Guidelines (2016) and to demonstrate the Program's performance and achievements to key internal government stakeholders including the Environment and Heritage Group Executive, the Environment and Heritage Group Delivery Office, the SoS Board, the DPE Evaluation Board, the NSW Minister for Energy and Environment and the NSW Treasury, to Program partners (including Environmental Trust and CSIRO) and the public.

¹ Saving Our Species Strategy 2016-2021: More plants and animals to be saved from extinction, NSW Office of Environment and Heritage, June 2016

² Saving our Species Strategy 2021-2026: Securing Success, NSW Department of Planning, Industry & Environment [DRAFT FOR DISCUSSION – 3 Feb 2021 – NOT GOVT POLICY]

The evaluation was guided by a set of key evaluation questions (KEQs) and agreed case studies focusing on areas not previously evaluated. The KEQs and case study areas were informed by the initial 2016-2021 Program Evaluation Framework drafted in 2017 (DOC198) and discussions with SoS staff during the evaluation’s planning phase in September and October 2021. The KEQs have also been used as the key structuring device for this report. The KEQs are presented below, with Appendix I detailing the associated sub-KEQs and data sources.

1. How effective was the SoS Program in contributing to securing threatened species in the wild in the next 100 years?
2. How effective was the SoS Program’s science and research in improving the management of threatened species and TECs?
3. How effective was the SoS Program’s partnering and engagement for threatened species management?
4. How effectively did the Program’s design enable delivery?

The agreed case study focus areas include partnerships, communications, scientific research, and Aboriginal participation.

The evaluation was informed by an in-depth **desktop review** of the Program documentation provided by the SoS team, including the past evaluations, audits, and scientific reviews (see Table 1), and the collection and analysis of primary data through **in-depth stakeholder interviews** (with the interview guide is provided in Appendix II). A total of 259 documents were reviewed, and 25 interviews conducted with a range of stakeholders (see Table 2), with evidence collected analysed and synthesised against the KEQs and case study areas.

Table 1 Documentation reviewed

Documentation type	Number reviewed	Documentation type	Number reviewed
Data (e.g., data spreadsheets, species report cards)	66	Communications assets and reports (e.g., media briefs, media, social media and digital content reports, media releases)	59
Reports (e.g., annual reports, audience research, audits, evaluation reports, scientific reviews, user feedback)	42	Background information (e.g., case studies, minister briefings, contracts, plans and proposals, presentations, working group papers)	36
Research documentation (e.g., research papers and data)	27	Strategies	11
SoS response to audits, reviews and evaluations	5	Program logic documentation	4
Guidelines	5	Webpages	3
Business Case	1		

Table 2 Interview breakdown

Purpose	Stakeholders interviewed
Overarching Program level evaluation questions	3
Partnership evaluation questions and case studies	9 (2 Internal and 7 external)
Citizen science and volunteering (engagement) questions and case studies	2 (1 internal and 1 external)
Communications evaluation questions and case studies	2
Science and research evaluation questions and case studies	5 (2 internal and 3 external)
Aboriginal participation evaluation questions and case studies	4

1.3 Limitations

While every effort was made to ensure a rigorous evaluation within the budget available, we note the following limitations with the methodology:

- The evaluation drew on the findings of past evaluations and reviews and did not seek to assess the quality of their analyses or replicate their methodologies.
- The evaluation drew on the program information regarding actions taken to address recommendations of previous evaluations and did not seek to validate the status of these actions.
- The evaluation drew on existing summary Program data sourced from a range of information management systems supplied by DPE and the evaluation is therefore reliant on the data management and quality assurance processes of these systems. The process of collating and synthesising existing data surfaced many and seemingly disparate sources of programmatic information with inconsistencies across sources and variable data quality.
- Interviewees were purposefully sampled and while this data collection approaches provide a good indication of a range of views of internal and external SoS stakeholders, it does not represent the views of all stakeholders.

1.4 Report structure

The report also uses coloured boxes, as presented below, to highlight important elements in the report.

FINDING SUMMARY

CASE STUDY

RECOMMENDATION

2 Findings: Species management and research

This chapter presents the findings on the effectiveness of the SoS Program in contributing to securing threatened species in the wild in the next 100 years (KEQ1), and of the effectiveness of science and research in improving the management of threatened species and ecological communities (KEQ2).

2.1 Securing threatened species in the wild

FINDING SUMMARY

The SoS Program has made substantial progress towards securing threatened species in the wild in the next 100 years, through a substantial increase in the numbers of threatened species and ecological communities being serviced (from 95 to 472 combined), and an increase in the number of Key Threatening Processes (KTPs) being researched and/or managed (from 0 to 16). Of the site-specific threatened species managed, 89% (260 of 292 species) are now considered to be 'on-track' to be secure in the wild in the next 100 years. Since the Program commenced in 2016, the number of sites managed for conservation have increased substantially (from 234 to 978 sites). The Program adapted quickly and effectively to the catastrophic 2019/20 Black Summer bushfires to deliver emergency species support to 90% of fire-affected threatened species (371 of 412 threatened species). Scientific reviews and analysis of the Program's achievements to date provided positive insights, including that for most threatened species reviewed, the management actions being undertaken through the SoS Program are likely to increase the likelihood of species viability, and that the Program may already be reversing the trajectory of decline for some species.

36 percent of listed threatened species and TECs are being managed

Over the past 5 years the total number of threatened species and threatened ecological communities (TECs) serviced has increased from 94 (combined) before the Program commenced in 2015/16 to 472 in 2020/21, representing one-third (39% or 472/1217) of all listed species and ecological communities in NSW (DOC228; DOC255; DOC260). At the end of 2020-21, two-thirds (66% or 800/1217) of threatened species and TECs have had conservation management strategies developed and exhibited for public review prior to endorsement. The Program also increased the number of Key Threatening Process (KTPs) researched and/or managed from 0 to 16. The Program has allocated all listed species and KTPs to one of the nine management streams in line with the SoS prioritisation framework (discussed further in Section 4.1). The current status of the number of species and KTPs being serviced through each of the Program's nine management streams is summarised in Table 3.

Majority of site-managed species are 'on-track' to being secured in the wild

The majority of the threatened species and ecological communities managed through on-ground actions are demonstrating strong progress. As of 2020/21, 89% (260/292 species) of the site-specific species managed through on-ground actions (species in site-managed, iconic and population management streams) are 'on-track' to being secured in the wild in the next 100 years, and for widespread species and ecological communities, 98% (242 / 248 sites) of management sites were categorised as being 'on track' (DOC260). The recovery of the Regent Honeyeater under the SoS program provides an example of a site-based species managed through on-ground actions (see Case Study 1).

CASE STUDY 1: REGENT HONEYEATER BREEDING SUCCESS

Regent Honeyeaters were successfully bred and re-introduced onto a private property in the lower Hunter where it is hoped they will reproduce with the local wild population.

The species, which has previously existed across much of eastern Australia from Queensland to Victoria, is now thought to number less than 350 individuals in the wild. Managed under the site managed SoS stream, 20 Regent Honeyeaters were released as part of a national recovery effort. These individuals represented the single largest release of captive bred Regent Honeyeaters in NSW to date.

SoS contributed to a partnership between BirdLife Australia, Taronga Zoo, the NSW Environmental Trust, the Biodiversity and Conservation Trust, and Hunter Local Land Services, to facilitate a number of on-ground management actions to support the Regent Honeyeater. These included:

- The collection of seeds from key food trees to facilitate additional planting
- A workshop series to educate local landholders and community on the impacts of key habitat loss
- A cull of the invasive species, the Noisy Miner, at the release site to remove threat to food and habitat for the native Regent Honeyeater.
- Continued breeding of the Regent Honeyeater at the purpose-built facilities at Taronga Zoo, and at the new site at the Western Plains Zoo.

Monitoring activities are in progress at the current project site, with populations showing positive interactions the local wild populations, and it is hoped that the program will start to see breeding in coming mating season.

(Case study synthesised from Saving our Species Year in Review 2019-2020, and Regent Honeyeater 2019-2020 annual report card)

Different traffic light performance measurements systems are used to assess the status of site-specific and widespread entities. For Site-specific threatened species within the site-managed, iconic and population management streams, species are categorised as either 'On track to being secured in the wild in the next 100 years', 'Not on track' or 'Not determined' based on an assessment of site management and monitoring data including population metrics and threat management progress. A species level assessment cannot be made for wide-spread species and ecological communities, so a traffic light system is used to instead assess the progress of the site-based management actions for populations of a species or ecological community viability as either 'On Track', 'Not on track' or 'Not determined' (Discussed further in Section 4.2 Project MER).

Substantial increases in sites managed for conservation

The SoS Program has significantly increased the number of sites being managed for conservation of threatened entities. As of 2020/21, a total of 978³ sites were being managed for conservation, an increase from the 234 sites in 2015/16 (DOC260). SoS projects have not been required to report on the

³Figure includes sites from all streams except Keep Watch, KTP and DD (DOC260)

number of hectares being managed for conservation due to the differences across management streams in how the area for species monitoring and the area for on-ground management actions is captured. Recognising this as a limitation of the current program reporting structure, the SoS program is committed to developing a method to better capture the area covered by its program for the next phase of the program.

SoS has supported the implementation of on-ground actions to support the management of threatened species and TECs. Over the course of the program (2016–21), cumulatively 8,744 management actions were implemented, with an increase across individual years from 1,220 in 2016/17 to 2,138 in 2020/21 (DOC260).

Table 3 Status of species serviced through the SoS Program’s nine management streams (DOC249, DOC253, DOC255; DOC258; DOC259)

Stream description					Summary status		
Management stream	Stream description	Stream priority	Activity type	Performance measurement approach	Measures	2015/ 16 (pre)	2020/ 21 (current)
					Species listed: Conservation Strat’s exhibited:	1190 534	1217 800
Site-managed species	Species that can be secured by conservation projects at specific sites	High	Site-specific entities managed through site-based on-ground threat reduction and control actions to improve habitat condition and/or availability and improve or stabilise the condition/ abundance of species.	Traffic light assessment of whether the species is on track to being secured in the wild in the next 100 years, based on site management progress and monitoring data including population metrics.	Species managed: Sites: Species ‘On track’:	88 204 74	280 694 251 (90%)
Iconic	Species that are socially, culturally, and/or economically important	High			Species managed: Sites: Species ‘On track’:	6 30 6	11 35 8 (73%)
Populations of species	Groupings of native plants and animals likely to become extinct in NSW	Low			Species managed: Sites: Species ‘On track’:	0 0 0	1 1 1 (100%)
Total threatened species managed ‘on track’ to being secured in the wild in the next 100:						80 / 94 (85%)	260 / 292 (89%)
Partnership species	Threatened species found mainly in other states and territories. We partner with others to conserve them	Low	Widespread landscape species, all partnership species and TECs managed through site-based on-ground threat reduction and control actions across a range of geographical, climatic and species diversity to improve habitat condition and/or availability and increase area of habitat protected or managed for conservation.	Traffic light assessment of whether site management progress is on-track (not species security).	Species managed: Sites: Sites ‘On track’:	0 0 0	17 25 25 (100%)
Landscape-managed species	Species that are highly mobile or dispersed, or affected by landscape-scale threats	High			Species managed: Sites: Sites ‘On track’:	0 0 0	50 110 107 (97%)
Threatened Ecological Communities (TECs)	Ecological communities at risk of extinction because of a significant reduction in their distribution across regions or a decline in ecological function	High			TECs managed: Sites: Sites ‘On track’:	0 0 0	39 113 110 (97%)
Total widespread threatened species and TECs managed						0	106
Total threatened species and TEC management sites ‘On Track’						0/0 (0%)	242 / 248 (98%)

Stream description					Summary status		
Data deficient species	Threatened species we need to know more about before we can secure them in the wild ⁴	Medium	Research or survey to fill knowledge gaps and re-allocate species to other management streams	Number of data deficient species re-allocated to other streams.	Species researched:	0	10 (in 20/21) 74 (15/16-20/21)
					Species reallocated:	8	11
					Species in stream:	167 (0 actively reviewed)	167
Total threatened species & TECs serviced (site-managed and researched)						94/ 1190 (8%)	472 / 1217 (39%)
Keep Watch	Threatened species where no immediate action is needed to protect them.	Low	Periodic review of species to develop knowledge to inform adaptive management, reallocation to another stream, or for de-listing	Number of Keep Watch species re-allocated to other streams or delisted.	Species reviewed:	0	102
					Species reallocated:	0	74
					Species de-listed:	0	2
					Species in stream:	0	59
Key Threatening Processes (KTPs)	The threats which adversely affect listed species or communities, responded to with on-ground management to protect threatened species and threatened ecological communities	Medium	Research to fill knowledge gaps and inform site-based on-ground actions implemented through other management streams. On-ground management actions to contain or eradicate the threatening process in NSW	N/A	KTP projects:	0	16 (in 20/21) 59 (15/16-20/21)
					KTPs in stream:	39	39

⁴Data deficient species includes species listed as extinct and extinct in the wild.

Management actions are appropriate for addressing threats

For most threatened entities, the management actions undertaken are likely to increase the likelihood of species viability. The findings of the Management Action Review (Undertaken as part of the 2020 Scientific Review of the Program, DOC122; DOC123) were overwhelmingly positive, with the panel reporting that actions were appropriate for addressing and reducing threats, and there was a high likelihood the actions would contribute to species or ecological community population viability.

The review utilised an expert panel to assess the management actions implemented for 30 threatened species and two TECs. Almost all (94%) of the expert panel agreed the management actions were both appropriate and effective for addressing key threats. Significantly, no reviewers identified any actions as inappropriate or irrelevant for addressing critical threats to the assessed species. While the reviewers acknowledged the relatively low volume and quality of data about the impact of management actions due to the relatively short time frame they had been in place, and the small sample size assessed, they believed this to be a strong initial result (DOC 122; DOC123).

SoS Program adapted well in the face of environmental disasters

Bushfires, drought and poor climatic conditions impacted the progress of SoS projects, with the 2019/20 Black Summer Wildfires the most significant emergency the Program experienced. Numerous examples were cited across all management streams of the effects of the bushfires on the habitat and populations on species under SoS management (DOC121; DOC122).

The Program adapted well to the catastrophic 2019/20 Black Summer Wildfires and played a key role in the NSW government's response to the fires. During the Bushfires, 90% of the 412 threatened species and TECs being managed were affected. Of these, 336 threatened species and 35 TECs were affected across 6.9 million ha of land. In response, SoS developed 173 fire response plans to guide the immediate response to the fires and to inform updates to conservation strategies, project MER plans and priorities for on-ground conservation actions. From these the program implemented 479 actions to address immediate and ongoing species needs including threat mitigation, surveys and research for the effected threatened species and TECs (DOC255). The supply of emergency food for the threatened brush-tailed rock-wallaby is one example of the emergency response actions delivered (see Case Study 2).

In addition, Commonwealth funding supported bushfire response and recovery projects for 31 species, 2 TECs and 1 KTP. The Program was also able to utilise and share the pre-fire species monitoring data collected to monitor species condition and responses to management post the fires.

The bushfires also surfaced important learnings that will better position the Program for future events.

CASE STUDY 2: EMERGENCY FOOD FOR BRUSH-TAILED ROCK-WALLABIES

Following the 2019/20 Black Summer Bushfires, SoS coordinated a group of program partners to source and deliver emergency food to support endangered Brush-tailed Rock Wallabies.

The 2019/2020 Black Summer Bushfires burnt approximately 5.5 million hectares across NSW, killing over an estimated one-billion animals and affecting the habitat of many of the threatened species and ecological communities managed through SoS. The fires also destroyed food sources for many animals, leaving those who had survived the fires at risk of starvation.

SoS, WWF, Woolworths, FoodBank NSW/ACT and NPWS formed a partnership to source and deliver emergency short-term food stuffs suitable to feed the endangered Brush-tailed Rock Wallabies. Between January and March 2020, the partnership delivered over 14,500kg of carrots and sweet potatoes via existing food distribution networks, four-wheel drives, and helicopters. The food drops continued until the native foliage and food sources began to recover. These food stuffs were chosen to balance meeting the wallabies' dietary requirements and its low potential for unintended negative environmental consequences such as the introduction of invasive weeds.



Figure 1 Brush-tailed Rock Wallaby enjoying its sweet potato snack (Photo: SoS Program 2020)

The initiative successfully provided a short-term food supply for the endangered Brush-tailed Rock Wallabies, with the wallabies and several other threatened species observed eating the carrots and sweet potatoes from the food drops. The project also strengthened partner relationships and provided a much-needed morale boost for those effected by the impacts of the fires. The success of the project also demonstrated the effectiveness of the Partnership model for emergency food provision.

I think we know how to do it now and we know the types of food we need. [... We] really played to their strengths and what they could bring to the project. I think we've got a really good model there that can be deployed next time. (EXT_02)

Improving the trajectory of threatened species security in the wild

Despite the relatively short amount of time, early analysis of the SoS program have demonstrated they have already improved the trajectories for many threatened species over the past 5 years, increased the average abundance of many species and have demonstrated the monetary value of the benefits achieved.

While it is acknowledged that these analyses are limited by the absence of long-term data for many species, and that it is unreasonable to expect substantial quantitative evidence of progress within 5 years, the findings of the analysis are positive.

An analysis (SoS Business Case 2021-2026) of the influence of the Program on the trajectory of decline⁵ for managed species and ecological communities demonstrated that an estimated 16% of species were demonstrating a trajectory of improvement and a further 43% were estimated to be stable. The final 41% showed decline. These results demonstrate that in the program's 5-year period, the Program has had a positive influence on the trajectories of more than half (57%) of the managed species and ecological communities.

⁵ Species are listed as threatened when there is evidence they are on a trajectory of decline or at high risk of extinction in the medium term.

Another analysis (2020 Scientific review; DOC122) reviewed a subset of species with current projects against the Living Planet Index and concluded that the program had achieved “*an increase in the average abundance of the included species since the beginning of the Program*”.

An analysis of the estimated monetary value of the improvements to the security of threatened species achieved through the Program demonstrated a minimum \$178 million in 2021 present value terms (by comparison, the program cost \$100 million to deliver; DOC134). This analysis considered the 50-year trajectory of monitored species and as it estimated the minimum value while accounting for worst case black swan events, including those that did occur (namely the 2019-20 Black Summer bushfires) and those that may occur in the future, it is highly likely that the monetary benefit is considerably higher.

RECOMMENDATION

Establish a clear and transparent Program-level performance framework that enables an assessment of the Program’s contribution to its primary objective – increasing the security of threatened species in the wild for the next 100 years - and an assessment of the program’s influence on species rates of decline or improvement.

The framework should bring together the prioritisation framework – across the nine management streams and the prioritisation of the species within them – to inform program-level assessment. The program performance framework should consider the use of a rubric, which builds on the success of the traffic light system used in the site-based management stream, to enable the use of both qualitative and quantitative evidence of various strengths and from different sources in program performance assessment. The program should finalise development required to report on species population trajectories effectively.

2.2 Research contributes to threatened species management

FINDING SUMMARY

Scientific research activities undertaken across the Program contributed valuable knowledge that both supported Program-level decision making and informed species management actions. However, the evaluation found that the research projects could be better aligned to address information gaps for prioritised species and the needs of on-ground practitioners. The Program invested 5% of its overall budget to scientific research activities, a proportion that is in line with international best practice for conservation programs.

Outcomes from research activities

During the program period, the SoS Program delivered a range of research projects under the SoS Science and Research Strategy, as well research actions delivered within SoS Projects. Many of these research projects have delivered knowledge outcomes for the program, while for others it is too early in the research process.

During the program period, SoS funded a total of 31 discreet research projects targeting 326 threatened species and ecological communities and five KTPs between 2016 and 2021. These research projects also included four research projects targeting nine data deficient species, and seven research projects targeting five KTPs. The remaining 20 research projects targeting multiple species across multiple streams (DOC239; DOC255). In addition, 107 on ground management actions including an element of research were implemented or partially implemented across the various management streams during the SoS program (DOC260). Of these 61 on-ground management actions for site-managed and landscape species included research components informing their delivery (DOC260).

Many research projects have delivered the knowledge outcomes for the Program, while for others it is too early in the process to demonstrate the research outcomes. Research outcomes achieved to date include:

- The re-categorisation of ten species from the **data deficient management** stream into other management streams (DOC255) based on new information from successful population surveys.
- The generation of new knowledge and technologies contributing to work being done under the **KTP management stream** (DOC121). Examples of the new knowledge and tools developed to manage KTPs are detailed in Case Study 3.
- The **Keep Watch review** conducted in 2018 delivered two key research outcomes: the refinement of the role of the Keep Watch stream and the criteria for species to add to the stream; and the review of the 102 species already in the stream against the revised criteria. The review found that 28 species could be retained in the Keep Watch stream with high or moderate confidence. These species could be considered on track for delisting if their trajectories continue to improve. The remaining 74 species were recommended to be reallocated to another management stream, with 9 moving to the data deficient stream and 65 to one of the site-based managed streams such as site-managed, landscape or partnership (DOC259).
- Clarification of species management issues, including (DOC122):

- new knowledge about the Bellinger River snapping turtle, *Myuchelys georgesii*, and the risk of inter-specific competition and the risk of extinction posed by an outbreak of a novel virus leading to increased risk of extinction.
- clarifying the genetics of a species complex or clonal species, resolving questions of low fertility or reproduction, understanding species behaviour, understanding critical symbioses.
- Informing 174 proposals to the SoS Technical Group (STG) to adjust existing conservation strategies or to allocate a newly listed entity to a management stream [Discussed further in Section 4.1 Project MER).
- The sharing of knowledge products, with SoS science and research funding contributed to 113 publications including 79 peer reviewed journal articles, 4 technical reports and 1 book (DOC255). SoS also made data publicly available through BioNet, Sharing and Enabling Environmental Data (SEED) and Information Asset Register (IAR) for stakeholder use and download.

While many research projects have demonstrated program benefits, interviewees also noted that for many projects it was too early for the research to have progressed to translating and disseminating findings and influencing conservation practices (INT_05, INT_10, EXT_10, EXT_11).

There's definitely a lag between a research finding coming out and then it being instituted or applied into some policy or management change [...] Having those answers now isn't always achievable just because of the nature of research and science, and if you want to have good outcomes, you have to go through that methodical process, because otherwise, it's just not something that's going to be informative. (INT_05)

CASE STUDY 3: RESEARCH LEADS KTP MANAGEMENT

SoS has invested in targeted research aimed at addressing KTPs affecting multiple species. Four research projects have demonstrated the generation of new knowledge and tools to assist in mitigating the impact of KTPs on threatened species, including climate impacts on mountain frogs, fungal pathogens infecting vulnerable flora in NSW, state-wide risk mapping for threatened plant species, and the use of drones and AI in monitoring.

New knowledge about the climate impacts on alpine frogs, and methods to measure the impacts of climate related stress on individuals have been produced through SoS funded research conducted at the University of Newcastle.

The research found clear evidence of the physiological reasons why climate change will lead to alpine frogs' decline. Alpine frogs are particularly vulnerable to climate change as they have no way to biologically adapt to external temperature changes, and their habitat range is restricted to the higher altitudes of the Australian Mountain Ranges (DOC145).



Figure 2 The Sphagnum frog (*Phyloria sphagnicola*) photographed in Werrikimbee NP by Mahony& Moses (DOC145).

The research resulted in new ways to measure the impacts of climate-related stress of frogs in the field, as well as informing on-ground practices aimed at mitigating the impacts of increasing temperatures through the creation of refuges to allow them to shelter from the heat. The researchers also discovered that the frog's heart rate was a good surrogate measure for their metabolic rate, opening future avenues for in-field measurement and research.

Hygiene protocols have been validated and refined to prevent the spread of fungal pathogens infecting vulnerable flora in NSW through SoS funded research conducted by Mount Annan Botanic Gardens and the Canberra Botanic Gardens.

Phytophthora cinnamomi is a water-based mould that infects plants via their root system and is an identified KTP in NSW and nationally. It is distributed via soil and water and can be spread short distances via swimming spores, or over larger distances by human activity (DOC172). Research into the *Phytophthora cinnamomi* created new knowledge products that will help shape the ongoing management approaches, as well as restricting the human-related spread of the pathogen.

Among other significant outputs, the study discovered that some of the widely accepted hygiene practices were, in fact, ineffectual in stopping the spread. The project recommended alternative, effective measures based on their research, informing the development of departmental phytosanitary protocols to minimise the spread of the *Phytophthora cinnamomi* pathogen. Next steps are for these to be rolled out across NSW management sites.

A multi-layered state-wide risk mapping tool for understanding of the impacts of fire and climate on threatened flora has been developed through SoS funded research with Macquarie University.

Current practices for managing the impacts of KTPs such as high-frequency fire and climate change on threatened floral species focus on the risk of exposure without considering the sensitivity of species to that threat. SoS funded researchers from Macquarie University to create a spatial database that allows users to understand the interaction of multiple KTPs on threatened species now and into the future, enabling better strategic decisions for conservation.

The researchers developed a “multi-layered state-wide risk mapping tool” focused on the combining the exposure and sensitivity of threatened plant species to climate change and high-frequency fire events. This has been integrated into ArcGIS for DPE to inform their site prioritisation and management plans. Presented at a resolution of 1km x 1km across all of NSW, Species Project Coordinators (SPCs) can access data to inform actions right down to the site level.

At this stage, it is unclear the extent to which the tools have been adopted by staff within the Department or applied to conservation management. However, the project represents a shift to considering the intersection between multiple KTPs and their potential impacts on collections of co-occurring flora species for the first time.

New technologies such as the combined use of drones and AI have been investigated as a cost-effective alternative to traditional monitoring methods.

SoS and Fujitsu successfully piloted a cost effective and time efficient method for monitoring species. A combination of drone capture imagery and Artificial Intelligence (AI) was used to identify the distribution of species to inform better direct management actions in hard-to-reach locations. Monitoring activities conducted during the pilot included searching for two threatened species and one pest species at Mt Dangar and was estimated to have saved \$50,000 compared to the traditional

approach to conduct the same work. Despite the success of the pilot, there are no clear plans for scaling the approach at this stage.

Delivering research activities to inform conservation practices

As outlined above, there is some evidence that research and knowledge produced under SoS is informing conservation practices, however more attention needs to be paid to ensure research directly informs the improvement of conservation practices. In particular, the science and research projects could be better aligned to information gaps for prioritised species and the needs of on-ground practitioners.

The 2018/19 evaluation, the 2020 Scientific Review and the 2021 science and research strategy survey identified concerns about the effectiveness of research and knowledge at improving conservation practices (DOC121, DOC122, DOC168). Staff perception of how well research and knowledge were being incorporated into projects was mixed, with 56% (n=26) of respondents in the 2018/19 evaluation (DOC121) agreeing that SoS was doing well at incorporating new knowledge, and about one third of survey respondents (31%, n=14) who considered that the Program was not incorporating new knowledge effectively. Moreover, the 2020 Scientific Review found that the research relationships had developed in a 'haphazard' manner and were not explicitly aligned with the program investment prioritisation or targeted at critical knowledge gaps (DOC122). Similarly, 47% of the 2021 research strategy survey (DOC202) respondents (n=36) indicated that Science and Research delivery could be improved, including improving the prioritisation of research projects for species most 'in need', and increasing collaboration between researchers and practitioners.

Similarly, three interviewees (INT_04, INT_05, INT_10) pointed to the value in paying attention to the needs of on-ground staff and projects to ensure that research met their information needs.

I think really excellent research was done but I don't think it has really informed on-ground management and better conservation outcomes for the species that we are trying to save. I think there is too much of a disconnect between that higher level science and also it just hasn't been communicated down to the people working on the species. (INT_10)

Delivering the research and developing research partnerships

While the SoS Program is primarily a management program, 5% of the overall program budget is allocated to delivering research activities, a proportion that is in line with international best practice. An independent research paper identified the importance of prioritising the resourcing of management actions as a budgetary approach to conservations programs, showing that species with a lower proportion of their budget allocated to research and monitoring as opposed to management actions have better recovery outcomes. The research paper recognised that the SoS program allocated a smaller percentage of its budget than other jurisdictions to research and monitoring, in favour of resourcing management actions, which was found to be positive. (DOC203).

RECOMMENDATION

Prioritise research activities to ensure they both target the information needs of on-ground species managers and facilitate collaborative partnerships between on-ground managers and researchers - to ensure research is useful and used.

3 Findings: Partnerships and engagement

This chapter presents the findings on the effectiveness of the SoS Program's partnering and engagement for threatened species management (KEQ3) and covers program level partnerships, Aboriginal participation in the program, volunteering and citizen science, and communications campaigns.

3.1 Strategic program partnering supported species management

FINDING SUMMARY

Building and maintaining partnerships and connecting potential partners has been critical to the success of the SoS Program. Across the Program, partnerships have been effective for achieving mutual goals that align with SoS objectives and for leveraging additional support. External partnerships brought \$31 million in co-funding and in-kind support, from 67 partners. A range of partnership types were effectively utilised to support threatened species management, including co-investment where extensive landscape management is required, contestable grants programs to support community involvement in on-ground projects, landholder access agreements to implement long-term monitoring and management actions, and research partnerships. The SoS approach to partnerships has demonstrated ongoing commitment to improve the management and delivery of Partnerships, including the employment of a Partnership Manager and development of a partnership strategy.

Strategic program partnerships facilitated

At the program level, SoS facilitated a range of strategic external partnerships to support the delivery of threatened species and ecological community conservation projects. Through the alignment of 67 external program level partners with the SoS objectives the Program leveraged \$31 million from external partners, amplifying the achievement of program outcomes.

A range of different types of strategic program partnerships were established with external organisations across each of the management streams to support Program delivery including co-investment partnerships for projects involving extensive landscape management (co-investment partnerships, contestable grants and private landholder agreements), corporate & innovation partnerships trialling new and creative approaches to managing threatened species and ecological communities in NSW and research partnerships to support scientific research for threatened species conservation. The different types of external partnerships leveraged by the program are described in Table 4, along with their 202/21 status and the management streams they align with.

I think we should be very proud of the area of partnerships for SoS. We're highly respected by all [the] partners I deal [with]. And the ability to work together provides us with more opportunities to identify solutions, minimise costs, minimise duplication and have a longer-term impact on threatened species conservation in New South Wales.
(INT_01)

Table 4 Program external partnership types and associated management streams (not including on-ground project delivery partnerships) (DOC255; DOC16)

External Partnership Type	Description	Status (2016-2021)	Total investment leveraged	Management Streams
Co-Investment	Agreements with NGOs to leverage in-kind cash contributions, and their existing networks with landholders, volunteers and local community to manage threatened species and TECs across the landscapes	9 partnerships (3-year agreements)	\$2.3 million	17 Landscape management species 5 TECs
Contestable Grants	Agreements with community, NGOs, and/or businesses to foster partnerships to deliver on ground actions and maximise the number of threatened species and TECs being managed in the wild. Administered by the Environmental Trust	27 grant agreements with a lead organisation, who may be supported by additional individuals or organisations	\$1.56 million	17 Landscape management species 29 TECs
Partnership Grants	Agreements with community, research institutions, and/or industry organisations to foster long-term (10 year) partnerships to implement monitoring and management actions. Administered by the Environmental Trust	11 (10 year) grants agreements with community and industry	\$7.3 million	22 Site managed species 2 Partnership species 14 Landscape managed species 21 Data Deficient species
Corporate & Innovation	Agreements with NGO and private organisations to explore sponsorship, engagement or innovation opportunities. These are state-wide and cross cutting opportunities.	26 agreements with private and NGO organisations	\$0.84 million	Program - level
Research	Agreements with research institutes, individuals or research consortia to conduct high-level research into cross cutting areas such as threats affecting multiple species	31 agreements with 16 universities, 2 government research organisations (CSIRO and Australian National botanic gardens), 3 NGOs and 4 other government departments	\$2.51 million	All management streams, generally focusing on projects with strategic importance to more than one entity

External Partnership Type	Description	Status (2016-2021)	Total investment leveraged	Management Streams
Private landholders	<p>Agreements with private landholders to provide SoS staff access to their land to undertake on-ground species management actions or monitoring activities.</p> <p>In-perpetuity conservation agreements (facilitated through the Biodiversity Conservation Trust) with active SoS project sites.</p>	<p>While a significant proportion of active SoS sites are on private land and rely on the input of landholder time and resources (estimated at around 50%), there is insufficient data to accurately report on the number of private landholders with SoS management sites on their land, the number of private landholder access agreements that are in place, and the amount of time landholders contribute to threatened species management.</p> <p>An increasing number of in-perpetuity agreements that have active SoS project sites each year, from 313 in 2016 to 872 in 2021.</p>	Not available	All

Leveraging partner investment

The SoS program successfully leveraged partner resources for threatened species conservation. From 2016 to 2021, SoS leveraged \$31 million in cash and in-kind support from external partners in addition to a further \$60 million from State government outside of the program. Together these almost doubled the \$100 million investment in the SoS Program by contributing a further \$92 million over the 5 years (see Figure 3). The success of the Program in leveraging investment was also discussed in the 2018-19 evaluation (DOC121) and raised by interviewees for this evaluation.

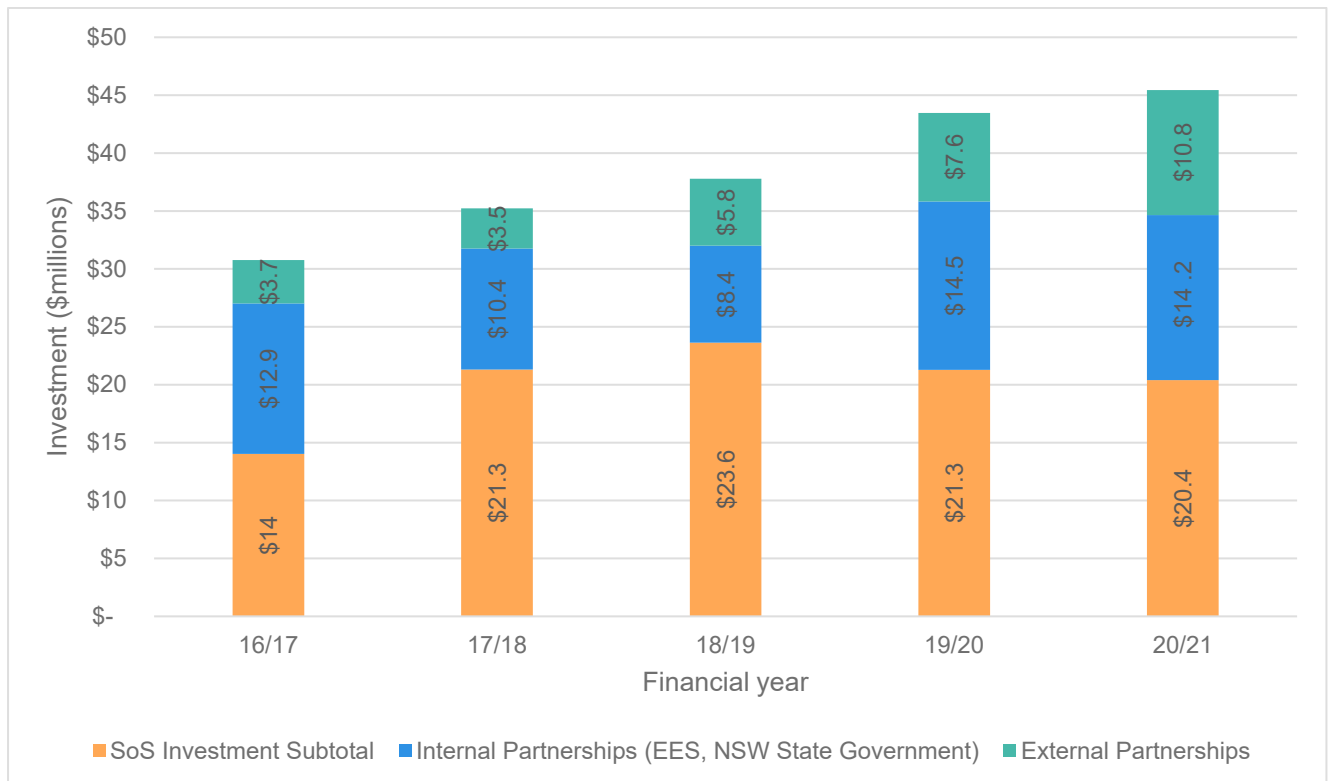


Figure 3 Investment leveraged from internal and external partners by SoS (2016-2021) (DOC255)

Partners align with SoS objectives and contribute to species outcomes

External program partners have demonstrated they value the SoS Program and are aligning their efforts with the Program's objectives, amplifying the work being done for threatened species conservation and contributing to program outcomes.

Two external interviewees and five internal interviewees described how partners were aligning with the SoS priorities (INT_01 INT_02, INT_03, INT_04, INT_05, EXT_02, EXT_06). The 2018-19 SoS evaluation (DOC121) also found SoS partners and stakeholders were doing well at **aligning their efforts toward threatened species conservation**.

[SoS] obviously have a very clear plan on what species of wildlife are their priorities, what locations, so that structure is important. And I've certainly had discussions where we were interested in a particular species, and it wasn't a priority and vice versa. So, you get a good idea of what are the types of species that they're interested in working with and through that then you can identify where those overlaps are. (EXT_02)

The Program was able to effectively leverage the resources and networks of external partners to increase the area of land being managed and monitored for threaten species conservation outcomes,

and the number of landholders and other organisations involved in threatened species management. Partnerships with NGOs were successfully utilised as a mechanism for positioning their established site-based conservation programs in line with the SoS program objectives to increase the scale of the area being managed for landscape species and TECs and leveraging their resources and partner networks (INT_02, INT_03, INT_05, INT_10, EXT_02). Demonstrated in Case Study 4, SoS' co-investment partnerships have been successfully leveraged to not only ensure that additional land is reserved for conservation but is in some cases rehabilitated to provide vital habitat for threatened species.

We have a lot of problems with private land. [...] They have that relationship on ground. Landholders are more likely to work with [NGO and other partner organisations] than with us. [...] Then they have the relationships, and they can work with those landholders, and help them. (INT_02)

CASE STUDY 4: CO-INVESTMENT PARTNERSHIPS LEADING TO MORE HABITAT

Co-investment partnerships were integral to the success of SoS in leveraging contributions to expand threatened species management, with the partnerships with Big Scrub Landcare, Bush Heritage and the Nature Conservation Council key exemplars.

SoS has established nine co-investment agreements, leveraging a total estimated \$2.3 million in cash and in-kind contributions from the partners leading to the expansion of habitat being protected and rehabilitated across the landscape. Additionally, co-investment partners bring their established local networks which allows access to private land that SoS would otherwise be unable to work with. By bringing complementary assets, SoS and the co-investment partnerships are able to achieve more together than they are individually. Here we present deep dives into three of the co-investment partnerships.

The SoS partnership with **Big Scrub Landcare is expanding is helping facilitate and expand management and monitoring activity** in the Big Scrub region. Historically, the Big Scrub was the largest continuous area of subtropical lowland rainforest in eastern Australia. However, following European settlement, 99% of the area was cleared for agriculture creating approximately 100 fragments of the Big Scrub rainforest remain, covering a total area of almost 1,000 ha near Lismore. Over the last 25 years, Big Scrub Landcare have rehabilitated and provided ongoing care for 25 remnants and currently rehabilitating a further 25 remnants.

Starting in 2018, SoS and Big Scrub Landcare co-investment partnership has enhanced the recovery and conservation of two endangered rainforest TECs, the Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions, and the Lowland Rainforest on floodplain in the NSW North Coast Bioregion. The co-investment partnership helped Big Scrub Landcare expand the extent and the coverage of its weed management and species monitoring activities in the Big Scrub region. As a result, the two TECs that had been designated “not on track” due to lack of monitoring, they are now “on track” to safeguarding. In addition, it is allowing Big Scrub Landcare to broaden its work supporting the TECs, including future exploration of methods to address the lack of genetic diversity in the area via the creation of a seed bank. These will be used in restoration plantings and help further facilitate the survival of the forest.

The SoS partnership **with Bush Heritage partnership has helped multiply monitoring and management efforts** for two TECs at Naree Station and Tarcutta Hills. Importantly the partnership

helped extend the area managed at Tarcutta Hills by 66%, with Bush Heritage able to purchase and permanently reserve an adjacent 288 ha containing a rare, significant, and healthy example of a critically endangered ecological community “White Box-Yellow Box-Blakely’s Red Gum Grassy Woodlands and Grasslands”.

Through funding and ecological support, the partnership helped Bush Heritage continue its essential conservation work and extend management and monitoring across the accumulative 15,000 hectares at Naree Station and Tarcutta Hills. Bush Heritage has built a better understanding of the TECs and implemented management actions at a greater intensity than would have otherwise been possible. While the status of the Coolibah-Black Box Woodland in Naree was unknown in 2018-19, it has been designated as “on track” as of 2019-20. Overall, the sites are on a better long-term trajectory.

The SoS partnership **Nature Conservation Council networks are helping safeguard the vulnerable Barking Owl**. SoS entered a co-investment partnership with the Nature Conservation Council to help safeguard the vulnerable Barking Owl and associated prey species in the Richmond-Clarence Lowlands.

Beginning in 2018, the Nature Conservation Council’s existing relationships with landowners helped grow awareness and engagement with on-ground species management across the habitat region for the Barking Owl. It was also an opportunity to revisit their property fire management plans to enhance wildlife habitat. The Nature Conservation Council’s networks also allowed the strategic placement of Wildlife Acoustics Song Meter Recorders to be installed on priority properties to record audio data assisting with population assessments. Some landowners discussed seeking conservation agreements for their properties with the Nature Conservation Council, a positive unintended consequence of the project.

Unfortunately, soon after in 2019, the Black Summer bushfires severely impacted the region. The situation was critical as the owls may have been left with nothing to feed on and would likely cease to inhabit the area if prey populations were to vanish. Fortunately, the acoustic data that had been recorded pre-bushfires indicated presence and location of the owls and the prey glider species, allowing for the targeted placement of approximately 300 crowdfunded nesting boxes, providing crucial replacement habitat.

Without the program, there would be no knowledge of the pre-bushfire populations in the targeted region, making bushfire recovery actions much more challenging. The partnership multiplied monitoring and on-ground management efforts at a critical time for the owl species and facilitated further awareness and engagement with landowners.

The Program has operated as a connector, bringing together different partners to work together to contribute to program objectives. Nine interviewees (INT_01, INT_05, INT_09, EXT_01, EXT_02, EXT_07, EXT_09) described how SoS had successfully connected partners, effectively amplifying the work being done for threatened species conservation. A good example of this was the environmental business incubator Wild Idea, set up in partnership with Odonata discussed in Case Study 5.

CASE STUDY 5: BUSINESS INCUBATOR LEADS TO SUCCESSFUL BUSHFIRE RESPONSE

The Wild Idea Incubator, delivered through a partnership between SoS and Odonata, built the skills of environmentally minded entrepreneurs, leading to the launch of several business including WildBNB, who provided emergency nesting boxes to endangered gliders following the Black Summer bushfires.

In 2019, SoS partnered with Odonata to establish the first environmentally focused business incubator in NSW – Wild Idea. Wild Idea runs annually and aims to build the capacity of environmental leaders and entrepreneurs to address challenges faced by threatened species in NSW and to inspire others to do the same and try their own ideas. After initial seed funding was provided by NAB and SoS in 2019, Odonata has continued to deliver the incubator with SoS having moved into a role of ‘mentor and connector’, allowing them access to their extensive network of practitioners and investors across NSW.

Over the three years (2019-2021), around 40 people participated in the full Wild Idea incubator program and an additional 300 people have participated in an online iteration. The program has succeeded in incubating and assisting in the launch of several businesses, such as the [Lonely Conservationist](#), the [Grow Love Project](#), and WildBnB (see below), as well as forming a broad community of alumni, contributing to conservation outcomes across NSW.

[Wild Idea] recognises the business opportunities in biodiversity. [As a participant], I was impressed with the program. It changed my life and business. It was an exceptional opportunity. (EXT_01)

Following the 2019/2020 Summer Bushfires, WildBNB built on the business idea they formed as part of the Wild Idea incubator and reached out to SoS to suggest the use of nesting boxes to provide artificial hollow-homes for the threatened gliders in the Northern Rivers region of NSW. SoS then brokered a multi-organisation partnership between WildBnB, Southern Cross University, Minyumai Land Holding Aboriginal Corporation (Minyumai IPA), Jali Local Aboriginal Land Council (Ngunya Jargoona IPA), National Parks & Wildlife Service (NPWS), and WWF to install nesting boxes of varying sizes across four substantially burnt areas of the Northern Rivers, including two Indigenous Protected Areas. The boxes were installed in Minyumai IPA, Bundjalung National Park, Tabbimoble Swamp Nature Reserve, and the Ngunya Jargoona IPA, all of which had had 80 to 100% of their habitat burned.

The nesting boxes and the partnership have proven to be successful, with evidence the boxes have provided substitute nesting habitat for both the target species, as well as other threatened species since their installation.



Figure 4 Wild BnB team and Aboriginal rangers preparing to install a nesting box; Nesting box occupants (Source: SoS Program 2020)

Appropriate partner engagement

The SoS program has appropriately engaged with external partners to ensure the success of the partnerships at both the Program level and individual project level. Twelve internal and external interviewees for this evaluation described how partnerships had been engaged in an appropriate and meaningful way (INT_01, INT_04, INT_05, EXT_01, EXT_02, EXT_04, EXT_05, EXT_06, EXT_07, EXT_09, EXT_11). The 2018-19 SoS evaluation also found partnerships to be working well in practice and demonstrating enablers of good partnerships including collaborative relationships, open communication, and transparent governance and decision-making (DOC121).

A lot of the feedback that we've had from our partners is that we're really approachable. The Chief Conservation Officer of WWF [said that they] wished every state government had an SoS Program because they love the way that we work with them, which is from the ground level up. We ask for their feedback. We're not, you know, 'this is how it's supposed to be done', which has very much been the way beforehand. It was just a new way of working with the outside world. (INT_01)

Partnership resourcing challenges

While partnerships are being maintained and improved overall, concerns were raised about the level of resourcing available for partnership development, limiting the engagement needed to maintain existing partnerships and identify and establish new partnerships. Seven interviewees (INT_01 INT_02, INT_03, INT_04, INT_08, EXT_10, EXT_11) expressed frustrations at what they perceived to be insufficient resourcing put towards maintaining partnerships.

If there was more capacity or time, I think we probably could've engaged with maybe some more program partners. I know that I was trying to set up one particular project with a couple of partners who were really interested, and we just never were able to get that off the ground due to funding and capacity issues. I think there was some more opportunity to engage with more people, but it didn't quite happen. (INT_03)

Continuous improvement of partnership approach

Overall, the program partnership approach is an area that has seen substantial improvement over the life of the Program. Improvements to aspects of the partnership approach were raised in two previous evaluations, with recommendations pointing to changes needed to improve partnerships with external strategic partners and with the broader community. To address the recommendations, SoS appointed a Partnerships Manager, and is in the process of developing the first formal Partnerships Strategy for the next phase of the Program (DOC132).

Improvements to the program partnership approach were identified by five interviewees including both internal and external interviewees (EXT_02; EXT_03; INT_01; INT_04; INT_05). These five interviewees referenced specific ways they had seen the partnership approach, design and implementation evolved over the course of the Program. Improvements they identified included the increased flexibility in the ways of partnering moving to embrace new ideas from partners that align with the SoS priorities, rather than requiring partners to select a predetermined project from an existing prospectus.

The partnership work has evolved during the five years and has grown because [] there was an understanding that it was important, but the vision hadn't been really articulated initially. (INT_04)

when SoS first started, it was really hard to access it [...] I always found it really narrowly focused. That on this particular species this is the type of project [...] But I have seen over time they've become a lot more flexible and open to looking at new ideas and different ways of working. And I think that's quite important [...] You do need to adapt and change over time as you become more familiar with rolling out a program. (EXT_02)

RECOMMENDATION

Establish an appropriate method to demonstrate the significant contribution of private landholders to the achievement of SoS Program outcomes. With approximately 50% of active SoS sites on private land, specific consideration is needed to better understand and demonstrate the contribution of these stakeholders to maximising the security of threatened species and ecological communities in NSW.

3.2 Communications and engagement raised awareness and participation

FINDING SUMMARY

SoS and partner organisations facilitated a considerable number of community engagement and creative communications activities, contributing to greater awareness of threatened species conservation among targeted communities, increasing citizen science and volunteer engagement in species management, and supporting partnership establishment. The Program’s communication strategy was found to have supported creative and impactful communications, while its engagement strategy has continued to evolve and improve.

Communications and engagement increasing awareness and volunteer support

SoS and partner organisations delivered a considerable number of community engagement and communications activities between 2016 and 2021, contributing to greater awareness of threatened species conservation and increases in volunteers supporting project delivery. Communications and engagement activities were also utilised to strengthen stakeholder alignment with the SoS Program objectives and in turn, establish partnerships (as discussed above).

Independent surveys conducted in 2019 and again in 2021 showed that community awareness of the number of species under threat, and of NSW Government initiatives around protecting threatened species was reported to have grown (DOC54, DOC55).

More than 1,164 **community engagement events** were delivered across the Program in the last five years, engaging more than 57,242 participants (Figure 5). However, as engagement data is not consistently recorded across regional hubs and over time, the accuracy of this data cannot be guaranteed and is likely to be underestimated. Although events continued during 2020 and 2021, the number of events and participants were affected the Black Summer bushfires and the COVID pandemic, with a considerable reduction in participants recorded in the 2020/21 year.

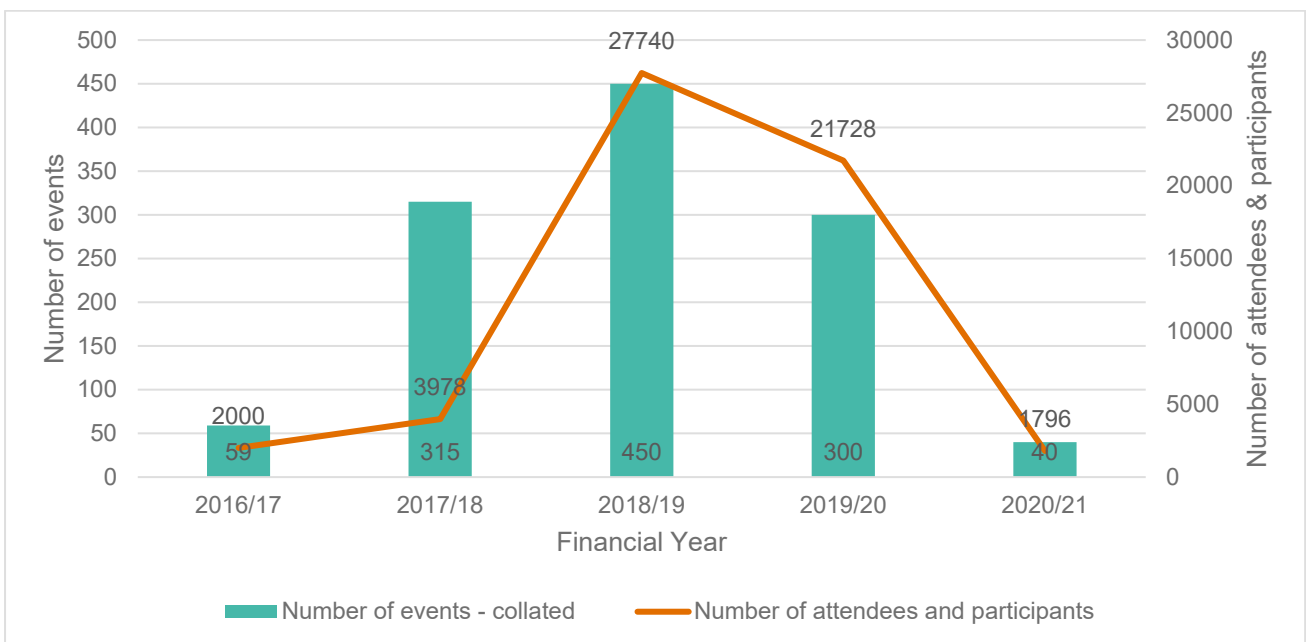


Figure 5 Number of events and participants recorded between 2016 and 2021 (DOC255, DOC205, DOC136, DOC206)

A range of **communications materials and educational resources** were developed within the regional hub and state-wide teams for use in awareness raising activities. This included fact sheets for National Threatened Species Day and Science Week events, educational resources published on the SoS website for school students, and videos showcasing communities engaged in threatened species management activities. Communications and media coverage (print, TV, radio, and online stories) remained relatively steady over the five-year period, with a peak in 2019/20 likely attributed to the Black Summer Bushfires, totalling more than 1,788 media stories (DOC136, DOC205, DOC206, DOC90, DOC86, DOC96, DOC95, DOC94, DOC87, DOC98, DOC101, DOC97, DOC102, DOC100). Newsletter subscribers grew year-on-year, from 1,400 in 2017/18 to more than 4,300 in 2020/21, indicating a growing public interest in SoS (DOC136, DOC205, DOC206, DOC105). Coverage also included social media, with 488 social content pieces published in financial year 2020-21 (DOC103, DOC104, DOC105, DOC106). Case Study 6 describes three of the creative social media campaigns delivered during the program period to raise awareness of threatened species.

CASE STUDY 6: RAISING AWARENESS OF THREATENED SPECIES

SoS ran three creative social media campaigns to raise awareness of threatened species and inspire targeted community members to engage in conservation.

The Shorebirds Campaign used targeted paid social media advertising to raise awareness among NSW beachgoers of threatened beach-nesting birds, to encourage them to adopt behaviours to help protect them.

Several species of shorebirds and seabirds that nest on NSW beaches are under threat of extinction, partly due to the behaviours of unaware beachgoers. The creative social media campaign used bespoke messaging and digital content, including four videos and a webpage, to educate the community about the behaviours that pose the most risk to beach-nesting birds. The campaign was delivered around October 2020 and used paid Facebook advertising to target users based on geographic locations and beach-related hobbies and interests including 'surfing, fishing, water sports and 4WDing'. The content was also shared across the NSW DPE and NSW National Parks Facebook pages. The campaign reached about 150,000 users and generated nearly 8,000 clicks. While the ad campaign has ended, the website remains active and continues to make information available to NSW beachgoers.

The biggest thing [we] are trying to drive or change is awareness, growing awareness of both threatened species in New South Wales and also the SoS Program. Because our research showed us awareness is quite low, and so if we can grow awareness the more people care, the more are aware, the more people might do something to help. (INT_06)

The Name your Species campaign aimed to inspire the community to care for and safeguard threatened species by informing people about eight "unnamed" species and inviting them to suggest names for them. The 2-week campaign was delivered in August 2020 and targeted 18- to 45-year-olds, an audience that SoS research demonstrated care the most about conservation and are the most likely to be change-makers. The campaign was promoted on Departmental social media and partner communication channels. 406 people completed the *Name your Species* survey and of these, 220 people subscribed to the SoS newsletter. The average time spent completing the survey

was 13m:53s, indicating participants may have spent time reading about the threatened species before voting. The campaign received media coverage, including three radio interviews.

The *Vote for your Favourite Threatened Species* campaign asked the public to vote for their favourite threatened species while educating them about the plants and animals at risk of extinction and the work of SoS. The 2-month campaign was delivered in April-May 2021 and also targeted 18- to 45-year-old change-makers. The species that received the most votes was then crowned the “2021 threatened species of the Year”. The *Vote for your Favourite Threatened Species* campaign received more than 2,000 votes, around 1,265 unique pageviews for the round 1 voting webpage, 6,500 unique page views for the round 2 voting webpage, and 636 unique pageviews to the prize draw winner’s announcement webpage. The campaign increased traffic to the “Help save our threatened species” webpage by 30% for the campaign duration and recruited 1,162 newsletter subscribers.

The campaigns contributed to raising awareness about threatened species and the SoS Program with new audiences. People spent considerable time on campaign web pages, indicating that the campaigns may also have provided learning opportunities for audiences. New newsletter subscribers will continue to receive communications about SoS and threatened species, which is likely to deepen their awareness and engagement with SoS and threatened species in the future.

The three campaigns were new creative approaches for SoS and were found to be more successful in garnering the attention of audiences than previous SoS communication activities that had focused more heavily on media releases and unpaid social media activity and targeted an older demographic.

[The] social media was really successful. We exceeded the reach and engagement and the cost per click and everything that we’d sought out to measure. (INT_06)

Citizen science and volunteering were utilised effectively to engage the community in conservation

Citizen science and volunteering were utilised effectively to engage the community in conservation management actions, to serve the dual purposes of increasing their awareness of threatened species and the Program and contributing to the generation of information for species monitoring and research activities.

Volunteers engaged across projects contributed a total 2,672 days to delivering management actions from 2016 to 2020, with a considerable jump in the number of volunteer days recorded in the 2019/20 year (see Figure 6)., likely to be in response to the Black Summer bushfires and high participation rates in the online volunteering initiative DigiVol. Two citizen science projects that engaged the community in threatened species monitoring actions - DigiVol and TurtleWatch are discussed further in Case Study 7.

Three interviewees (INT_03, INT_04, EXT_08) described how citizen science activities had successfully led to the engagement of more community members in threatened species management, and enabled projects to collect data that they wouldn’t have otherwise been unable to.

I think some of the migratory shorebirds are a good example of where we’re reliant on volunteers providing data, and up and down the coast. They have a role in both providing species data but also just in community engagement, so that a lot of them actually have an active role in educating users around the sensitive nature of coastal habitats and boats and dogs. (INT_04)

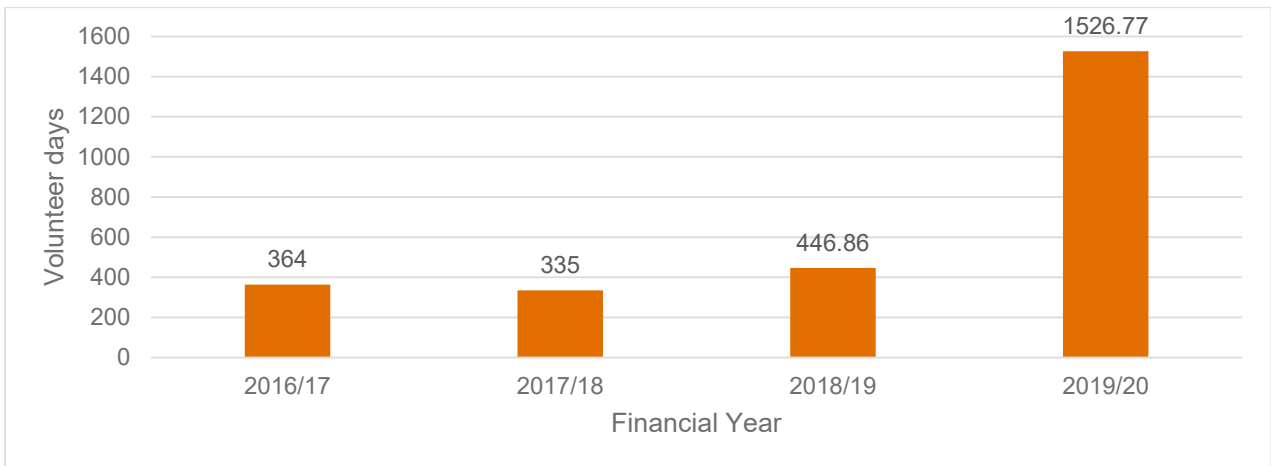


Figure 6 Volunteer days recorded between 2016 and 2020 (DOC190)

CASE STUDY 7: ENGAGING THE COMMUNITY IN CITIZEN SCIENCE

SoS invested in a range of citizen science projects, contributing to species monitoring and research efforts and raising community awareness of threatened species. Two of these projects included DigiVol and TurtleWatch.

From 2018, SoS partnered with ***DigiVol*** to recruit volunteers to process camera trap imagery of four threatened species. Camera traps were installed in the wild and captured thousands of images. *DigiVol* volunteers went through the photos online, identifying what they saw and leaving helpful notes for SoS staff.

From 2019, SoS also partnered with ***TurtleWatch***, a program run by the Australian Seabird Rescue (ASR). Citizen scientists were engaged in monitoring and threat management for the vulnerable green sea turtle and endangered loggerhead turtle. *TurtleWatch* also worked to improve public awareness and change behaviours threatening the turtles through traditional and social media, e-newsletters, giveaways, community training, workshops, and beach clean-ups.

Both *DigiVol* and *TurtleWatch* allowed SoS to **monitor particular species more effectively**, saving time and resources. *DigiVol* volunteer hours equated to a monetary value of over \$250,000 in the 2019-2020 financial year (DOC186). As for *TurtleWatch*, 204 volunteers were enlisted from 2019 to 2021 to monitor beaches for the presence or absence of nesting sea turtles and threats.

It takes a lot of time and effort to actually monitor the nests and get an outcome from them [...] [TurtleWatch] is assisting National Parks by making sure that we get a complete data set for every single nest that's identified and enlisting the help of volunteers and citizen scientists to help out. (EXT_08)

Both projects **contributed to species knowledge** and could eventually inform revisions to how the threatened species are managed. For *DigiVol*, this included information such as:

- identifying species over-grazing on the *bossiaea fragrans* to inform threat management

- assessing the presence and behaviour of malleefowls around nesting mounds and identifying animals threatening them, to help clarify the effects of different predators on breeding
- determining whether koalas and mountain pygmy-possums use food and/or water drinkers, to understand what could help these species survive harsh weather.

The *TurtleWatch* app recorded threats including coastal erosion (218 instances), marine debris (235 instances), domestic animals (81 instances), vehicle impacts (30 instances), vegetation, light sources (256 instances) and buildings (23 instances) (financial year 2020-21). 19 turtle nesting activities were reported in financial year 2020-21, compared to 9 in 2019-20 and 3 in 2018-19.

Both partnerships also contributed to **raising awareness and learning among volunteers**. *DigiVol* engaged about 2,500 volunteers (INT_03), potentially raising awareness among a broad community:

I think DigiVol [...] allowed us to get these projects out to a much bigger audience than we could have traditionally. (INT_03)

As for *TurtleWatch*, a 2021 survey (n=90, random sample across three locations along the northern NSW coast) showed an increase in public knowledge of turtles since 2019, with 78% of respondents who were aware that sea turtles nested in NSW compared to 44% in 2019, and 68% of respondents who could name more than 5 threats to sea turtles compared to 55% in 2019 (DOC182).

By facilitating efficiencies in monitoring and learning, and growing awareness of threatened species, both programs are contributing to species safeguarding.

I think DigiVol [...] shows that [monitoring] could be really efficient and that you can get the public involved and have that community investment for the conservation of the species. (INT_03)

Programmatic approach to communications is effective, and engagement is improving

The Program's communication strategy was found to have supported creative and impactful communications, while the Program-level strategy for engagement has continued to evolve and improve.

The SoS Communications Strategy was found to be effective. One interviewee (INT_06) described the positive achievements that the communications team have made, and their commitment to being creative within a limited budget to get good content and stories shared. The 2017-18 SoS evaluation also found the Communications Strategy to be strategically sound (DOC120). The positive communications work is evident in new approaches to campaigns from the SoS Communications team, including running new innovative online campaigns (see Case Study 6).

After the findings of the 2017-18 evaluation found significant gaps in the community engagement strategy and its execution, with engagement not being implemented in a coordinated, consistent, or strategic way (DOC120), the regional hubs developed a strategic regional communication and engagement workplan for 2019-2021 program (DOC132).

One interviewee described how limited resourcing prevented effective regional community engagement across hubs, but that over time this role grew into being a highly effective communications role.

The Program did have an engagement role sitting in the [southeast hub], but because of the way hubs are set up across both South East and South West Branch, those engagement roles struggled a little bit to do good engagement work. And in fact, they've been far more important as a comms role. And in the later part of the program, those comms initially that were coming out of that role were fantastic and we were able to support the Program from more of an engagement perspective. (INT_08)

RECOMMENDATION

Continue to refine the program-level approach to communications, engagement and partnering - to ensure these activities are strategic and targeted, and that their outcomes and achievements are monitored, reported and used to inform continuous improvement.

3.3 Aboriginal groups participated in threatened species management

FINDING SUMMARY

Aboriginal people and communities participated in over 60 threatened species management projects over the 2016-2021 period, and high-level guidance on engaging Aboriginal people was produced. SoS program engagement with Aboriginal communities and development of partnerships was driven from the ground-up through pre-existing relationships and where there was interest and opportunity for Aboriginal participation in the SoS projects. At the program level however, the focus on cost-effective outcomes for individual species, informed by science-based prioritisation, has limited the integration of Aboriginal ways of working and Aboriginal knowledge into the Program design.

The participation of Aboriginal people and communities in the SoS program over the 2016-2021 period occurred within projects where local staff were able to leverage pre-existing local relationships with Aboriginal groups. At the Program level, there has been limited engagement with, and utilisation of Aboriginal partnerships and Aboriginal knowledge in species prioritisation and Program management processes.

Aboriginal groups have participated in the delivery of 62 SoS projects across the Site managed, Landscape and Population management streams, driven by a grass-roots approach where local staff have been able to leverage pre-existing engagement experience and local relationships with Aboriginal groups. Prominent examples of Aboriginal participation in the Program the work done with the Gumbaynggirr, Yugambeh/ Bundjalung, and Yaegl people to incorporate their cultural knowledge into the management of coastal emus (see Case Study 8), and the Glossies in the Mist and Poetry in First Languages partnership raising awareness and interest for the vulnerable glossy black cockatoo among young Aboriginal people and provided opportunities to practice culture on Country (see Case Study 9).

Wherever there has been Aboriginal participation pathways created in SoS, I think you might find that it comes down to those individuals who have made time for it, who have had some experience in the past and so they've got the confidence to approach it.

(INT_08)

CASE STUDY 8: CULTURAL KNOWLEDGE INFORMS COASTAL EMU MANAGEMENT

The Gumbaynggirr, Yugambeh/ Bundjalung, and Yaegl people came together with SoS to share cultural knowledge and stories to support the conservation of the threatened coastal emu. The partnership provided mutual outcomes, with the knowledge informing management actions, and the cultural events an opportunity to honour the traditional kinship relations with the Elders, and to reinvigorate kinship between the coastal emu and the younger Goori people.

Aboriginal people on New South Wales' north coast share an ancient cultural relationship with the coastal emus, once abundant across Bundjalung, Gumbaynggirr and Yaegl Country. Coastal emus are genetically unique from the western emu and eat and disperse fruits and seeds across the coastal landscape, which include highly biodiverse coastal forests. Many plants depend on the emu

for germination and distribution of their seeds over up to 50-kilometre ranges. Unfortunately, fewer than 50 coastal emus remain in the wild today.

The Northeast SoS Regional Hub recognised the unique knowledge and kinship local Aboriginal communities have of, and with, coastal emus, and connected with the local Aboriginal communities to facilitate the incorporation of cultural knowledge into the management of the threatened species and help raise awareness with the broader community.

In 2019, SoS participated in a local Aboriginal intercommunity gathering in South Grafton, bringing together Elders, knowledge holders and storytellers to honour traditional kinship relations to the coastal emu and discuss population threats and management actions. The event was attended by local Aboriginal people and non-Aboriginal guests, where Gumbaynggirr Elder Aunty Nita Taylor spoke of the traditional reciprocal relationship and responsibilities between the People and the coastal emu. Two stories were shared: the Gumbaynggirr Creation story of the Emu and the Platypus, illustrating the importance of the emu in the teaching of Gumbaynggirr philosophy, principles, and social norms; and the 'Fairy Emu' story, communicating how emu nesting sites are associated with paperbark rich areas. The gathering also passed on knowledge to Yaegl participants to be culturally empowered in their custodianship role. Dancers from all three language groups interpreted the knowledge shared into a cultural dance to help continue the cultural story of the coastal emu and its significance to the people and the land. An SoS Project Officer also briefed participants on the threatened status of the coastal emu and the SoS management strategy.

Following the gathering, the Gumbaynggirr Aboriginal community shared their version of the emu story by creating a short film: 'The Emu and the Platypus' in 2020. The film created strong community engagement with a local screening launch and more than 60,000 views on social media.

After the gathering, the Northeast SoS Regional Hub worked with the Aboriginal communities to integrate Aboriginal cultural and local knowledge with the SoS coastal emu management project.

The event was important for both SoS and the participating Aboriginal communities in creating an enabling environment in which traditional knowledge and science can together inform species management, as well as offering an opportunity for Elders to reinvigorate kinship between the coastal emu and the younger Goori people. The collaboration also helped raise awareness of the importance of the coastal emu and the need to preserve its habitat, reminding the broader community that we all have a responsibility to look after the species.

CASE STUDY 9: GLOSSIES IN THE MIST ENABLING ABORIGINAL PARTICIPATION

The partnership between Glossies in the Mist and Poetry in First Languages helped raise awareness and interest for the vulnerable glossy black cockatoo among young Aboriginal people and provided opportunities to practice culture on Country. The collaboration resulted in stronger relationships between SoS Program staff and Aboriginal stakeholders, which may support the incorporation of cultural management practices into the management of the glossy black cockatoo in years to come.

Glossy black cockatoos rely on corridors of native vegetation with appropriate nesting and feeding habitat to survive in the wild. Through "Glossies in the Mist", SoS has, for many years, engaged the

Great Western Wildlife Corridor community in reporting glossy black cockatoo sightings, mapping stands of essential food sources, and assessing feeding and hollow-bearing trees.

The local Aboriginal people hold unique knowledge and kinship with local wildlife and can play an essential role in conserving species of significance. The Glossies in the Mist team were interested in encouraging young people's connection to Country and culture and sought to explore opportunities to incorporate cultural knowledge into management practices and reinforce species custodianship with the Gundungurra people.

In 2019, Glossies in the Mist partnered with Wingecarribee Shire Council, Red Room Poetry, and the Gundungurra Aboriginal Heritage Association to run a Poetry in First Languages program on Gundungurra country with local Aboriginal high school students. The program supported the students to write poetry in language while learning about the environment and heritage of the area through the lens of Glossies in the Mist. The Glossies in the Mist team also spoke about the glossy black cockatoo and its habitat requirements. Together they also planted habitat trees for the cockatoos.

Three Gundungarra language poems were then chosen and displayed on Southern Highlands buses, aiming to raise awareness of the species among the broader community.

Following the 2019-20 bushfires, Aboriginal woman Kirli Saunders wrote *Bindi*, a novel partly inspired by the collaboration between Glossies in the Mist and Poetry in First Languages. The novel follows a young heroine engaging with her elders, language and country and connecting with glossy black cockatoos, helping increase awareness for glossy black cockatoo conservation.

Because of the Glossies in the Mist partnership with Aboriginal people, landholders are also starting to become more interested in cultural burning practices for their properties. Cultural burning has tremendous potential for helping manage glossy black cockatoo habitat due to their targeted application of fire, and lower intensity burns.

Aboriginal participation and the integration of aboriginal knowledge was not strategically considered in the Program's initial design, which has resulted in the absence of the necessary programmatic processes to support and resource appropriate and strategic Aboriginal participation. While aboriginal people have participated in project delivery where local opportunities existed, the Program's focus on cost-effective outcomes for individual species, informed by science-based prioritisation, has limited the integration of Aboriginal ways of working and Aboriginal knowledge into the Program design.

Engagement with Aboriginal communities [has] not been a focus of a lot of scientific programs such as Saving our Species, and I'm not saying that it hasn't happened, but it hasn't been strategic... It's a different way of working that needs to be integrated into the Program and recognised as being important. The way that the program has been set up in terms of looking at priorities and where there's bang for buck, [...] it's meant that they haven't been able to work collaboratively with communities generally, but also specifically to engage with Aboriginal landholders and for them to participate in the program. It's systemic [...] threatened species officers don't have the time [it's] not that they don't want to (INT_07)

Interviewees specifically described how the Program's focus on cost-effectiveness limited the ability to appropriately resource Aboriginal participation, as there were insufficient resources to invest in relationships and build trust with Aboriginal communities, (INT_07, INT_08, INT_09).

Relationships really are the most important thing that can be invested in because once you've got those, you can learn what communities are interested in, where they have existing knowledge or capacity, and that gives you an opportunity then to identify opportunities to support those aspirations. (INT_08)

Furthermore, interviewees outlined how a greater appreciation of Aboriginal custodianship, culture and knowledge would benefit both the threatened species being managed, and the Aboriginal communities involved (INT_07, INT_08, INT_09). One interviewee (INT_08) suggested the inclusion of a mechanism to incorporate aboriginal custodianship into species management decision making alongside western science. This interviewee also described the opportunities for connecting private landholders with cultural burning practitioners for mutual outcomes.

It's very much a two-way learning, so we really [should] promote and prioritise walking side-by-side and making sure that science is informed by culture and culture is supported by science. (INT_09)

"Cultural burning has great potential in the Southern Highlands and particularly for Glossy Black Cockatoo habitat... [for example] the sheoak trees that the species rely on solely for their food is really sensitive to fire and even a hazard reduction burn undertaken by national parks professionals can kill those trees. A cultural burn is famously cool and gentle..." (INT_08)

The SoS Scientific Review (2020) (DOC122) also found that opportunities to engage with Aboriginal people, communities and knowledge to improve outcomes for threatened species and Aboriginal people were 'significantly underdeveloped'. High-level guidance on engaging Aboriginal people was produced during the Program (DOC1), however it appears that a lack of buy-in has meant that its influence on the Program was negligible (INT_07).

RECOMMENDATION

Incorporate Aboriginal aspirations into the program framework, to better demonstrate the program's recognition of the value of Aboriginal knowledge and provide opportunities for participation in effective species conservation. This will require establishing appropriate governance and Aboriginal-identified roles at the program level to lead the incorporation of Aboriginal aspirations into SoS program design and identification of opportunities for mutual outcomes. At the project level continue to work flexibly to enable communities to authentically participate in threatened species conservation.

4 Findings: Program design and processes

This chapter presents the findings on the effectiveness of the SoS Program's design for enabling delivery (KEQ4) and covers the prioritisation approach, project MER, information management systems, program governance, the regional delivery model and program evaluation and continuous improvement processes.

4.1 The SoS prioritisation contributes to cost-effective threatened species management

KEY FINDING

The SoS program is effectively utilising the species prioritisation approach for decision making about program efforts and funding. Recognised as best practice science, species investment prioritisation decisions are based on cost effectiveness reflecting the likelihood of success. Prioritisation occurs at two levels – prioritisation across the nine management streams, and species prioritisation within the streams. The program distributes funding across the management streams based on this prioritisation approach, with 91% of operating funds allocated to on-ground management of high-priority species management streams, and the remaining funds allocated to lower priority species management streams for improving information for management or supporting management efforts with a lower likelihood of success. The limitations of the prioritisation approach are known and SoS has demonstrated its commitment to the ongoing review and continuous improvement of the prioritisation process as new data and information becomes available.

Prioritisation approach

Prioritisation occurs at two levels: across the nine management streams and within the streams across the threatened species and TEC. At the highest-level, investment is prioritised between the nine management streams to reflect the likelihood of successful on-ground action and jurisdictional importance.

- The **highest priority** management streams are for species that are most at risk of decline or even extinction, and that the on-ground actions required to secure them are relatively well understood, have a high likelihood of success and represent a cost-effective investment. They include site-managed species, TECs and landscape-managed species, as well as Iconic species which are included in this category due to the high level of community interest in, and concern for these threatened species.
- The **medium priority** streams are for species that are not well understood and require further research (data-deficient species), and for the key threatening processes (KTP) that negatively impact vulnerable species.
- **Low priority** streams include partnership and keep watch species, as these species are either a) not threatened in other jurisdictions or b) are unlikely to benefit as much from active management.

Within streams, funding is then prioritised using different approaches that reflect the availability of information and likelihood of success. Specifically, the site-managed stream applies the Project Prioritisation Protocol (PPP) developed by University of Queensland (DOC256) while the Iconic species, landscape species and TECs use a community-led approach. One interviewee describes the value of the PPP for cost-effectively managing a prioritised threatened species at a specific site compared to at a landscape level:

The Mountain Pygmy-Possum is threatened by climate change but predation by cats in particular. Cat management on a landscape scale is actually ineffective. [...] where they've been able to do intensive cat trapping and cat removal, at targeted sites, in a really targeted way, it has made a difference [...] demonstrated through data. But to just do landscape scale cat control wouldn't do enough (INT_04)

Prioritisation approach is scientifically robust

The SoS prioritisation approach is the scientific foundation of the Program and has been recognised as scientifically best-practice with a high likelihood of achieving program objectives. An expert scientific panel (DOC122) assess the SoS prioritisation as comprehensive, coordinated, and cost-effective, with the focus on cost-effectiveness being especially useful in informing evidence-based prioritisation decisions in the absence of sufficient management and monitoring data. The prioritisation also allows the Program to be transparent about investment within a fixed budget.

SoS employs globally state-of-the-art project prioritisation approaches to ensure cost-effectiveness of investments in threatened species management, indicating a high likelihood of achieving program objectives... The cost-effectiveness prioritisation in place is best practice in the absence of sufficient management and monitoring data to undertake more evidence-based prioritisation (DOC122).

The 2018-19 Evaluation (DOC121) also found the SoS' prioritisation process to provide "a more transparent, cost-effective, systematic and targeted approach to determining where funding is allocated than any previous conservation investment in NSW" and found broad acceptance by SoS staff of the importance of prioritisation in managing the large number of threatened species in NSW.

Funding reflects prioritising across management streams

The distribution of program funding across management streams aligns with the prioritisation framework (Table 5), with the higher priority management streams receiving 91% of funds over the program period (2016-2021).

Table 5 Summary of prioritisation approach and allocation of funding against priority streams 2016-2021 (DOC255)

Management Stream	Priority level across streams	Prioritisation approach within streams	Total Funding allocation (2016-21) (\$M)	Proportion of total funding (%)
Site- managed species	High	PPP (UQ)	\$ 27.8	48%
Iconic	High	A bottom-up community led approach	\$ 10.1	20%
Threatened Ecological Communities	High		\$ 7.5	19%
Key Threatening Processes	Medium		\$ 3.2	6%

Management Stream	Priority level across streams	Prioritisation approach within streams	Total Funding allocation (2016-21) (\$M)	Proportion of total funding (%)
Landscape-managed species	High		\$ 6.1	4%
Partnership species	Low		\$ 0.5	1%
Populations of species	Low		\$ 0.07	0%
Data deficient species	Medium	N/A	\$ 0.8	2%
Keep Watch	Low		\$ - *	0%

**Note the Keep Watch stream was allocated some funding for a review into the species listed under it*

As the Program progressed through the delivery period, the funding was diversified with an increasing proportion of funds directed to lower priority streams including the Data Deficient stream. As shown in Figure 7, in 2016/17 98% of funding was allocated to high priority species which then decreased to 64% by 2020/21. This reflects the staggered priorities and readiness of the management streams for delivery.

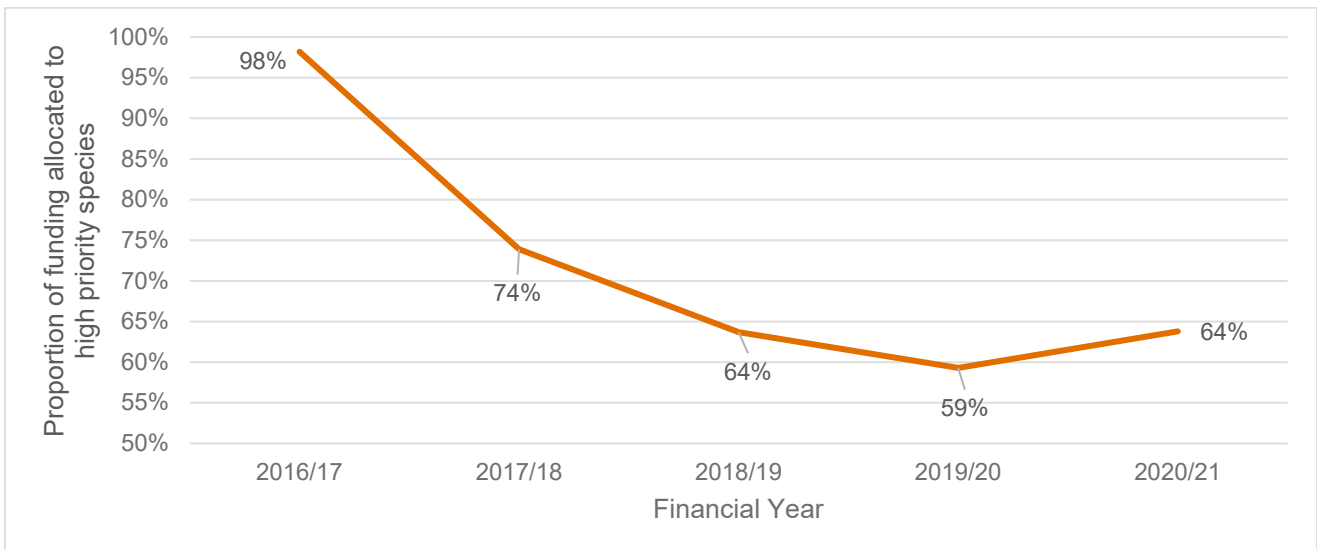


Figure 7 Percentage of species and funding allocated to high priority streams (DOC255)

Commitment to improving prioritisation

Past evaluations and reviews have demonstrated different levels of confidence and highlighted limitations with the different prioritisation approaches used in each of the management streams. However, the SoS program have demonstrated a commitment to regular and continuous improvement of the prioritisation approaches to address issues identified.

The prioritisation with the highest levels of confidence is the PPP algorithm used in the site-based management stream, which is reflected in why this stream has received the highest proportion of funding. The remaining eight management streams had lower levels of confidence as they did not incorporate robust scientific protocols but instead focused on consultative community-led processes. Some of the limitations raised for the prioritisation approaches include:

- The preference for action over learning prejudices investment toward species for which knowledge of threats and conservation needs is well established and more easily addressed

while limiting opportunities to conserve or recover species where less knowledge is available (DOC122).

- The complexities involved with geographically defining a priority population for landscape-managed species or TECs impacting the prioritisation of projects (DOC121).
- Drawing on the findings from the 2018/2019 evaluation, while SoS staff were generally positive about the transparency of the Project Prioritisation Protocol (PPP) approach for site managed species, they raised concerns that less strategic, more 'human' factors (legacy issues; personal preferences; gaming the system) were undermining the way prioritisation operated in practice across SoS and particular in the landscape managed stream (DOC121).
- Currently the species prioritisation approach did not align with or incorporate any consideration of Aboriginal cultural-ecological knowledge systems and was not focussed on providing resources for Aboriginal participation in threatened species and TEC conservation (INT_07).
- The data informing the prioritisation approach did not appropriately consider threats associated with future changes in climate or regional distribution of threats, or species ability to adapt to these changes and how this would affect the sites selected (EXT_11).

SoS has worked to continuously to improve the prioritisation process during the program period and has demonstrated plans to address many of its limitations into the future (DOC132). Examples of how prioritisation has evolved to meet the needs of the program include:

- Establishing nine management streams where there were originally four (Site Managed, Iconic, Landscape and Data Deficient streams) to better identify species that will benefit most from management actions.
- Progressing the development of the Integrated Spatial Prioritisation (ISP) tool, which will consider spatial complementarity in species conservation needs to improve the cost-effectiveness of species management, "where you have the different threatened species that require the same management actions at the same sites (INT_04)" to be ready for use in the 2021-2026 Program, (DOC132).
- Ongoing investment in species research, project MER and the SoS database to improve the quality of data used in the prioritisation process.

RECOMMENDATION

Continue to refine the Program prioritisation processes to ensure transparent and strategic investment decisions across management streams. To support assessments of species management cost-effectiveness in a consistent and transparent manner across management streams, consider developing a rubric with a common set of criteria that accommodates the use of non-scientific information sources, such as community values (as used in the iconic species) and Aboriginal aspirations and knowledge. This could also help inform the program performance framework rubric and build on recent work to improve landscape-level spatial complementarity assessments.

4.2 Project MER informs species monitoring and adaptive project management

KEY FINDING

The Program implements an established effective project MER framework resulting in an increasing number of threatened species with regular monitoring activities and documentation of monitoring and evaluation approaches. Project MER plans are supporting on-ground species monitoring and project adaptive management. However, the quality of MER across projects is inconsistent - with examples of excellent project MER – described as exemplars of ‘global best practice’, and other examples where MER was found to be incomplete, not scientifically robust, or not being effectively utilised for continuous improvement. The SoS Technical Group (STG) review process utilises MER information and research to support the continuous improvement of management strategies and actions within SoS.

Project MER plans being developed and functioning well

The Program has established an effective project MER framework, increasing the number of threatened species with regular monitoring activities and documentation of monitoring and evaluation approaches. Prior to SoS approximately 21 per cent of threatened plants were actively monitored for their status in the wild; with the implementation of the Program this has increased to 52 per cent (DOC134).

The development of Project MER plans is central to the SoS Program approach, with the Project MER Framework (DOC257) informing the development of project MER plans. All 465 actively managed projects incorporate monitoring targets and actions in their implementation plans which are used to inform project implementation and improvement, annual public report cards and Program decision making processes (DOC134).

Project MER processes were found to have functioned well. Program staff were generally positive about how the project level MER information helped to inform project management and achieve outcomes (DOC121). One external interviewee for this evaluation highlighted that the Project MER approach ensured that management interventions were informed by evidence:

I think SoS is a marvellous program because [...] its primary goal is around the MER-based approach for conservation management - prove that it had the desired outcome and then you've made a change [...] scientists need to be kept into account (EXT_09)

The program has produced high quality guidance and delivered capacity building activities to support effective project MER. However, the Scientific review (DOC122) found the quality and effectiveness of project MER across the program is inconsistent. The review identified many examples of excellent project MER, described as ‘global best practice’, as well as many examples where MER was found to be not scientifically robust, incomplete or not being effectively leveraged for continuous improvement (DOC122). The review described “a potential gap between the high level aims of the central program and actual implementation at the regional level” and suggested the individual projects demonstrating a high standard of MER be used as exemplars for the other projects to emulate.

Participants in the 2018/19 evaluation pointed to onerous project reporting requirements, with concern that some metrics required were irrelevant for the reporting and the lack of clarity about how the data from MER was to be used to influence decision-making (DOC121). This may reflect the gap between the

high level aims of the program and a lack of understanding at the regional level about how the data would be used.

The program has however maintained a focus on continuous improvement, with iterative improvements to the MER Framework during the program period, including incorporating conceptual models, target setting and management triggers.

There have also been many examples of Project MER being improved as the projects progressed, such as through incorporating the use of drones.

A range of MER capacity building activities were also delivered over the period, including training for target setting and conceptual models.

Project MER information utilised in the STG Review process

The SoS Technical Group (STG) and review process is considered to be working well and to be continually improving its processes to make them more efficient. The STG review process effectively utilised MER information and research for project continuous improvement, assessing 140 proposals for major changes to existing strategies and allocating 24 newly listed entities to an SoS management stream. In response to new knowledge the STG recommended 903 adjustments to strategies over the course of the five years of the Program, and 7 changes in response to the events of the Black Summer bushfires (DOC255).

RECOMMENDATION

Continue to deliver MER capacity building activities to ensure Project MER is of consistently high-quality across the Program, and that staff are clear on how Project MER informs program-level decision making and reporting.

4.3 Information management systems do not meet the needs of staff

KEY FINDING

A range of information management systems are in use across the program to support program delivery, and while some individual systems are satisfying their intended purposes, overall information management has not met the needs of program staff and partners to support program and project level decision-making, reporting, and continuous improvement.

The SoS Database is the primary program level information management system, designed as a register for the conservation strategies as required under the Biodiversity Conservation Act 2016. The database has been demonstrated to be effective at the Program level to facilitate reporting and decision making (DOC120). While a range of issues that limit the database's efficiency and useability have been identified over the program period, the SoS database team have been active in tracking and addressing issues, delivered ongoing technical updates and providing support to users (DOC132). The SoS Program has invested a total of \$1.6 million over the last five years in continually improving the Database.

The SoS Database is one of many sources of information for project management at the project level. However, project level staff have expressed concerns that that database does not contain the data they needed. As a result, neither the program team nor project level staff value the SoS database as a comprehensive resource of information for project management (DOC120). One interviewee described the tension between the database's intended purpose and the needs of staff, stating “[The database] doesn't capture all the MER, it doesn't capture the results – doesn't capture the data itself, it captures some of the outcomes” (INT_04).

Two external program partners also described the challenges they had experienced trying to report into the SoS information management systems

What didn't work well for us is having a set of agreed outcomes and them not translating as well into the database... it's a lot more complicated. (EXT_06).

The delivery of this evaluation was also impacted by the many and seemingly disparate sources of programmatic information (refer to Table 1 for a list of the documents reviewed). The challenging process of collating and synthesising existing program data highlighted the absence of cohesive programmatic information management process across each of the areas investigated.

RECOMMENDATION

Continue to refine program level information management systems to meet the needs of program staff (including on-ground staff) and program partners to support program and project implementation and review. This should be supported with engagement and capacity building across the Program to ensure buy-in and effective use of information management systems.

4.4 Program governance is a key enabler

KEY FINDING

Program governance has matured through the program period to become one of the Program's key enablers, ultimately supporting the effective functioning of the Program.

Overall, SoS' governance processes are well-designed, and have continued to mature in response to evaluation findings to ensure the effective oversight of program delivery.

During the 5-year period, the SoS program's governance was functional and effective, and matured as the program continued, leading to marked improvements in how SoS functioned by 2020/21. The SoS' strong, overarching governance is one of the Program's key enablers (DOC121), and effectively supports decision-making and the Program's sustainability (DOC119). Of the 11 opportunities for improvement identified in the 2016-17 evaluation (DOC119) and 2018 audit (DOC118), 10 have been actioned. These include ensuring the SoS board provided strategic oversight, implementing a change management strategy to address SoS' transition to business-as-usual as well as staffing and delivery issues, reviewing the structure of working groups, and implementing a master schedule, dependency, and risk management processes (DOC132). These improvements provide strong evidence of the program's commitment to the ongoing improvement of the governance and its current maturity.

Improvements to the Program's governance have occurred throughout the review period. For example, findings from the 2018/19 evaluation indicated that participants viewed the governance structures more favourably than previous years. During the current evaluation one interviewee (INT_04) pointed to significant changes made to the program governance that were working better and would be carried into the new program.

While the SoS Program was able to be somewhat responsive to the Black Summer Bushfires, the experience highlighted the significant governance and coordination challenges associated with responding to multi-species disaster of this scale. This led to the Program identifying the opportunity to update program contingency planning standards and responses for catastrophic events. (DOC131). The SoS Program governance includes several committees and working groups to engage key stakeholders in implementation. The key groups being the Implementation Working Group (IWG) which had broad representation from groups involved in implementing the Program, the STG (Discussed in Section 4.2 Project MER) and the SoS Board which were consistent across the 5-years. Other WGs were created often as subgroups of the IWG to deliver tasks and were effectively ceased through regular reviews of these committee's Terms of Reference (DOC132).

One interviewee described how the function of the IWG changed over the course of the program, but through the standard review process will continue to be adapted for the next phase of SoS (2021-2026).

...the implementation working group, which was the main kind of program level governance group within the Program, [...] it got really big [and] I think some of the initial intent changed over time... It was [designed] to have all the implementation people there to resolve issues...[but] it became a bit of a pseudo communication forum...which made it hard to function as a working group. [...] in this next phase [2021-2026], we've identified [...] we can just do that through communication and consultation. It doesn't necessarily need to have a working group. (INT_04)

4.5 Delivery model enabled regional coordination with some challenges

FINDING SUMMARY

The implementation of the Regional Delivery model has enabled program teams to coordinate delivery more effectively within the regions, though enabling regional teams to contribute to program level decision-making remains a challenge.

The Program's delivery model was found to be functioning well - with the Program managed centrally and the three regional hubs coordinating project delivery through Species Project Coordinators (SPCs) and maintaining relationships between the BCD, NPWS and Science in delivery areas.

The three regional hubs and SPCs worked well in their role to coordinate delivery across the BCD, NPWS and Science divisions and support on-ground Threatened Species Managers to deliver projects. The hubs operated well as the link between the on-ground managers and the state-wide program managers (INT_10). The SPC role was effective in managing threatened species as it was a centralised person that could be the 'go to' for information on the species' progress, as well as a person to liaise with for any upcoming management activities (INT_04).

However, there is evidence that a perceived lack of consultation between central office and regional hubs in decision-making exists in the regions (INT_04, EXT_10).

There was a lot of frustration in the regions about decisions that were made without a lot of consultation with the people who were going to be doing the work. If I had one criticism, that'd be the main one, that there still just needs to be a little bit more cohesion within the organisation [...] between the regions and the central organisation. (EXT_10)

Similarly, one interviewee (INT_03) indicated that the current dispersed structure of SoS (i.e., the management lines and having staff dispersed throughout Departmental teams) created unnecessary inefficiencies and barriers to the everyday functioning.

The internal relationships across the delivery areas have continued to improve during the program period. After the 2016-17 SoS evaluation found the effectiveness of internal relationships was mixed (DOC119), the 2017-18 SoS evaluation found that relationships between SoS and related programs were effective and perceived with a high degree of respect and trust, leveraging of expertise between parties, and fostering collaborations beyond the immediate relationship (DOC120).

4.7 Program evaluation and continuous improvement processes improve design and delivery

FINDING SUMMARY

A number of continuous improvement processes have effectively facilitated the identification of program design and delivery improvements. While several improvement opportunities have been implemented, there does not appear to be a process for prioritising identified improvement opportunities to ensure their timely implementation.

Over the 5-year period, the Program has utilised maturing continuous improvement processes to improve the effectiveness of the program's design and delivery.

Early on, the 2016-2017 evaluation found that while substantial improvement activity occurred across SoS, there was an opportunity for a more structured approach to continuous improvement (DOC119). In response, SoS developed the Program Evaluation Framework to guide the annual evaluation of the Program, as well as developing a formalised approach to project MER and formalising a funded role to ensure recommendations are monitored and program evaluations were completed (DOC132). Following this, the 2018-19 evaluation found that there were clear structures in place for program-level continuous improvement for SoS including treatment plans to track the findings and status of recommendations from annual evaluations, and internal audits (DOC121).

Since 2016, SoS has been evaluated and improved regularly. Between 2016 and 2021 there have been three annual evaluations, an audit, and two scientific reviews, with a total of 42 recommendations for improvement. At the time of this evaluation, 25 program-level recommendations had been recorded as either completed or substantial progress made. Progress had started for a further 12 recommendations, and the final 5 recommendations had not recorded any progress. The areas that recorded the most progress against recommendations were governance structures and processes followed by continuous improvement processes and data management and systems. Other key areas where improvements had been noted include improvements to partnership and engagement approaches, and engagement with researchers and knowledge products.

While several improvements have been made, there does not appear to be any clear targeting and prioritising of improvements to ensure they remain relevant and are successfully implemented. This was reflected in the 2018-19 evaluation, where staff reported mixed views on SoS' performance at incorporating new learnings. Some contended that the processes for making changes to SoS projects were overly rigid or expressed concern that the short cycle of annual evaluations meant there was often limited time in which to implement the recommendations or to share findings and some were unclear about the results of previous SoS Program evaluations and the way they were influencing decision-making. (DOC121).

RECOMMENDATION

Consolidate program-level continuous improvement processes under one strategic monitoring, evaluation and learning (MEL) framework that reflects the maturity of the Program. The MEL framework should ensure all program level monitoring, evaluation and learning activities, including scientific reviews and program performance frameworks are integrated, strategic and useful.

5 Appendix I: Key evaluation questions

The following key evaluation questions (Table 6) build on the scope and objectives of the evaluation and were used to guide the case studies and data collection.

Table 6 Key evaluation questions and data sources

KEQ	Sub-KEQ	Case study	Data sources
1. How effective was the SoS Program in contributing to securing threatened species in the wild in the next 100 years?	A. To what extent have threatened species and TECs responded positively to SoS management?	Case Study 1: Regent honeyeater breeding success Case Study 2: Emergency food for Brush-tailed Rock-wallabies	Interviews Quantitative data provided by SoS Scientific reviews Previous evaluations
	B. To what extent are species 'on-track' to recovery?		SoS response to previous evaluations
2. How effective was the SoS Program's science and research in improving the management of threatened species and TECs?	A. To what extent did the SoS prioritisation approach contribute to effective threatened species and TEC management?		Interviews Quantitative data provided by SoS Scientific reviews Previous evaluations
	B. To what extent did research and knowledge inform conservation practices?	Case Study 3: Research leads KTP management • Fire & Climate research • Mountain Frogs research • Phytophthora research • Digital Owl piloted new monitoring approach	Research papers Science and Research survey
3. How effective was the SoS Program's partnering and engagement for threatened species management?	A. To what extent did program partnerships support the effective threatened species and TEC management?	Case Study 4: Co-investment partnerships leading to more habitat • Big Scrub Landcare • Bush Heritage • Nature Conservation Council Case Study 5: Business incubator leads to successful bushfire response	Interviews Previous evaluations Quantitative data provided by SoS Scientific reviews Data spreadsheets for volunteering and regional hub engagement
	B. To what extent did community engagement support the effective threatened species and TEC management?	Case Study 6: Raising awareness of threatened species • Naming Species & Favourites • Shorebirds Campaign	Interviews Media, social media and newsletter reports YouGov surveys

KEQ	Sub-KEQ	Case study	Data sources
	C. To what extent did citizen science contribute to threatened species and TEC management?	Case Study 7: Engaging the community in citizen science • DigiVol • Turtle Watch (Community Engagement)	Citizen science volunteer data
	D. To what extent did Aboriginal people participate in threatened species and TEC management?	Case Study 8: Cultural knowledge informs coastal emu management Case Study 9: Glossies in the Mist enabling Aboriginal participation	
4. How effectively did the Program's design enable delivery?	A. To what extent did program governance processes support effective program delivery?		Interviews Previous evaluations Scientific reviews SoS audit SoS response to previous evaluations Interviews SoS 2021-26 business case cost-benefit analysis
	B. To what extent did the regional delivery model support effective program delivery?		
	C. How effective were program-level continuous improvement processes?		
	D. To what extent did the Program represent value for money?		
	E. To what extent did Project MER inform continuous improvement of conservation practices?		
	F. To what extent did the Database support data management?		

6 Appendix II: Data collection instruments

6.1 Interview Guide: Program Staff

Preamble

Hello, my name is [NAME], and I'm a consultant with Clear Horizon consulting. We've been contracted by the NSW Department of Planning, Industry and Environment to conduct an evaluation of the Saving our Species program (2016-2021).

More specifically, this evaluation is evaluating the **outcomes** of the program in relation to the goals of ensuring that priority threatened species and ecological communities in NSW are on track to being secured in the wild, the appropriateness of the **design** of the program itself, and how appropriate and efficient the implementation **process** was.

The SoS program team suggested that you are well positioned to provide insights that will help to evaluate these aspects of the program.

This interview comprises two sets of questions. The first set seeks to understand your work / project in some depth and to comprehend how it has contributed to the outcomes sought by the SoS program. The second set of questions is geared towards understanding the design and implementation of the program.

Importantly, this interview is completely confidential, and your participation is voluntary; you can stop the interview at any time or choose not to answer any question. The information you provide will be safely stored by Clear Horizon and we will de-identify any information that you share with us. I will also provide you with my contact details if, after the conclusion of the interview, you wish to amend or withdraw any of your comments.

The interview is expected to take between 45 and 60 minutes and will be recorded to facilitate Clear Horizon's analysis. Do you have any questions? Are you happy to proceed? (Yes/No).

Introduction

Context / Setting

1. Could you tell me briefly about your role and your involvement with the Saving our Species program?
2. Are you involved in any of the following program areas?
 - a. Corporate partnerships
 - b. Co-investment partnerships
 - c. Citizen science
 - d. Community engagement
 - e. Volunteering
 - f. Communications
 - g. Science & Research
3. Now I'd like your help to map out the most significant events or milestones for your SoS program area, from 2016 until this year.

Program area

Situation / problem

Note to the researcher: these questions are general about the relevant program area, or the SoS Program as a whole.

4. What issue/s is the program area/ SoS program seeking to address? What does it hope to achieve? (avoid talking about the 'how' yet)
 - a. (If relevant) Why do you feel these issues persist?
5. In your view, what needs to be done to address the issue/s you identified? (Note: beyond just their project/work)
6. To what extent do you feel the [model / mode of delivery for this program area] is appropriate to address this issue?

Outcomes including MSC – program area

7. What progress has been made towards the objectives of the SoS Program / your program area?
8. To what extent do the outcomes achieved by the project/program area contribute to securing threatened species in the wild in the next 100 years? (please provide specific examples)

Engagement – program area

Prioritisation

9. [For Program Staff] To what extent do you feel that the SoS program prioritisation model has contributed to the conservation of threatened species and ecological communities in NSW?

Partnership model

10. In your experience, do you feel that SoS has fostered the right partnerships for conservation?
 - a. If so, what kind of partnerships?
 - b. If no, why not?
11. To what extent do you feel the partnerships [within this program area] have contributed to the SoS program?
 - a. If yes, how has it contributed? (Probe: Resources, knowledge exchange, capacity building, etc).
12. To what extent do you feel that SoS has engaged the partners wanted to and needed to be engaged?
 - a. What was good about it?
 - b. What could be improved?

Case study specific questions (ask for the relevant case studies the respondent is involved with)

The Case study project - repeat for individual case studies

We are examining several case studies from the various SoS program areas to better understand the program mechanism and achievements. I understand that under your program area you have been involved in the following cases studies X. I have some questions to better understand the case study.

13. What issue/s was this project specifically seeking to address? What does it hope to achieve?
14. How does this work/project seek to address this issue/s?
15. What progress has been made towards the objectives of this project?
 - a. To what extent do you feel this project is contributing to the program area and SoS overarching objectives?

Most Significant Change

16. What do you think has been the most significant change that the work you've been doing / your program area / the SoS Program has made to the conservation of threatened species and ecological communities?
 - a. What was the situation like before?
 - b. What do you think the legacy of this change will be in the future? (if you feel that this change is likely to endure)
 - c. Why was this the most significant change for you?
17. To what extent do you feel this partnership/project was successful?

Learning – program

18. Over the time you've been involved with SoS, have you found that the program has tried to learn from experience and made improvements to its design and implementation? (KEQ 3c)
 - a. Please provide examples.

Closing

19. Any final comments?

6.2 Interview Guide: Project partners and Staff involved in Case studies

Preamble

Hello, my name is [NAME], and I'm a consultant with Clear Horizon consulting. We've been contracted by the NSW Department of Planning, Industry and Environment to conduct an evaluation of the Saving our Species program (2016-2021).

More specifically, this evaluation is evaluating the **outcomes** of the program in relation to the goals of ensuring that priority threatened species and ecological communities in NSW are on track to be secured

in the wild, the appropriateness of the **design** of the program itself, and how appropriate and efficient the implementation **process** was.

The SoS program team suggested that you are well-positioned to provide insights that will help to evaluate these aspects of the program.

This interview comprises two sets of questions. The first set seeks to understand your work/project in some depth and to comprehend how it has contributed to the outcomes sought by the SoS program. The second set of questions is geared towards understanding the design and implementation of the program.

Importantly, this interview is completely confidential, and your participation is voluntary; you can stop the interview at any time or choose not to answer any question. The information you provide will be safely stored by Clear Horizon and we will de-identify any information that you share with us. I will also provide you with my contact details if, after the conclusion of the interview, you wish to amend or withdraw any of your comments.

The interview is expected to take between 45 and 60 minutes and will be recorded to facilitate Clear Horizon's analysis. Do you have any questions? Are you happy to proceed? (Yes/No)

Introduction

Context / Setting

1. Could you tell me briefly about your role and your involvement with the Saving our Species program?
2. History Trip: Now I'd like your help to map out the most significant events or milestones for the work that you do for the SoS program, from 2016 until this year.

Case study

Situation / problem

3. What issue/s is your work/project seeking to address? What does it hope to achieve? (avoid talking about the 'how' yet)
 - b. (If relevant) Why do you feel these issues persist?
4. In your view, what needs to be done to address the issue/s you identified? (Note: beyond just their project/work)
5. To what extent do you feel that addressing this issue will contribute to securing threatened species in the wild in 100 years?

About the project

6. Can you now please describe the work that you do/project you work on as part of SoS / specific case study in more detail?
 - a. Location / geographic spread
 - c. Size of project/intervention
 - d. How long has it been running?
 - e. Who is involved?
 - f. What are its objectives?

7. And how does this work/project seek to address the issue/s you identified? (prompt with issues identified in response to situation/context questions)
8. Do you feel partnerships are important to address these issues? (Note this question can be tailored to the type of partnership relevant to the case study)
 - a. If so, what kind of partnerships?
 - g. If no, why not?

Outcomes including Most Significant Change

9. What progress has been made towards the objectives of your project?
10. To what extent do the outcomes achieved by your project contribute to securing threatened species in the wild in the next 100 years? (please provide specific examples)
11. What do you think has been the most significant change that the work you've been doing / your project has made to the conservation of threatened species and ecological communities?
 - a. What was the situation like before?
 - b. What do you think the legacy of this change will be in the future? (if you feel that this change is likely to endure)
 - c. Why was this the most significant change for you?

Engagement – Partnership

In your experience, do you feel that SoS has fostered the right partnerships for conservation?

12. To what extent do you feel your partnership has contributed to the SoS program?
 - a. If yes, how has it contributed? (Probe: Resources, knowledge exchange, capacity building, etc).
13. To what extent do you feel that SoS has engaged you in the way that you wanted to and needed to be engaged?
 - a. What was good about it?
 - h. What could be improved?

Learning

14. Over the time you've been involved with SoS, have you found that the program has tried to learn from experience and made improvements to its design and implementation? (KEQ 3c)
 - a. If so, please provide examples.

Close

15. Any final comments?