



SAVING OUR SPECIES

2019-20 SUPPORTING ACTION REPORT CARD

The 2019-20 supporting action report card highlights individual actions that were implemented in addition to the *Saving our Species* projects. Standalone conservation actions for threatened species and ecological communities are sometimes undertaken opportunistically, or when a new funding source arises to undertake specific actions (e.g. aerial pest control under the Australian Government Bushfire Recovery Program), or if stochastic events such as wildfire instigate the need for monitoring. Comprehensive SoS reporting may not be appropriate for management of this nature but for transparency and accountability these supporting actions are provided in this report card including the supporting actions, their cost and funding source, and a site management summary.

Supporting actions were implemented for 18 species and two ecological communities in 2019-20. Most actions were implemented in direct or indirect response to the 2019-20 bushfires. Direct actions include post-fire threat assessments and aerial control, while opportunistic surveys were the predominant indirect management action. The Rural Fire Service and the Australian Government Bushfire Recovery Program contributed a significant amount of investment towards bushfire suppression and post-fire actions. Environment, Energy and Science (EES) contributed mostly in-kind investment towards on-ground surveys and threat assessments.

Summary

Action implementation	Actions implemented for 18 threatened flora species and two threatened ecological communities.
Total expenditure	\$371,873 (\$39,646 cash; \$332,227 in-kind)
Partners	Environment, Energy and Science (EES); NSW Rural Fire Service, Greater Sydney Local Land Services, Australian Government Bushfire Recovery Program, Western Sydney University

Acacia ruppia (Rupp's Wattle)

Site	Partner	Type	Cost
Fortis Creek National Park	EES	In-kind	\$700

Action summary: A tall shrub endemic to the Clarence Sandstones subregion that is locally abundant in Banyabba Nature Reserve and Fortis Creek National Park. Previous estimates of the *Acacia ruppia* population are approximately 5000. Records show *Acacia ruppia* as an obligate seeding species and it has been assessed as a high priority for post-fire assessment. Field observation confirms that *Acacia ruppia* recruits from seed. Populations of adult *Acacia ruppia* were burnt in during the 2019-20 bushfires, on Morgans Camp Trail, and Junction Creek Trail in Fortis Creek National Park. All adult shrubs were killed. In April 2019 and August 2020, profuse seedling recruitment was in Fortis Creek National Park at Rocky Creek and Junction Creek Trail. There are large unburnt (1620 individuals) populations found at Rocky Creek and Junction Creek in Fortis Creek National Park. Further survey is planned. The current population size recorded in survey is 3151 plants.

Angophora robur (Sandstone Rough-barked Apple)

Site	Partner	Type	Cost
Fortis Creek National Park	EES	In-kind	\$700

Action summary: *Angophora robur* is an abundant tree on sandstone soils. It sometimes dominates sandstone shrublands, woodland and forest communities. *A. robur* was recently assessed as being of least concern on the IUCN red list. Large populations of the species are reserved in Sherwood Nature Reserve, Banyabba Nature Reserve, Fortis Creek National Park, Chambigne Nature Reserve, Flaggy Creek Nature Reserve, Chambigne State Recreation Area, and Tallawudjah Nature Reserve. The species conservation is secure. *Angophora robur* coppices from stem sprouts and recruits from seed post fire (Fortis Creek National Park). Some populations were burnt during the 2019-20 bushfires, but many populations also avoided the wildfires (Sherwood Nature Reserve, Fortis Creek National Park).

Ben Halls Gap Nature Reserve Sphagnum Moss Cool Temperate Rainforest

Site	Partner	Type	Cost
Ben Halls Gap Nature Reserve	EES	In-kind	\$3924
	EES	Cash	\$11,250

Ben Halls Gap Nature Reserve site summary: In response to the 2019-20 bushfire season, aerial control (shooting) of introduced herbivores was conducted over Ben Halls Gap Nature Reserve and National Park to reduce the impacts of these feral species, particularly pigs, on the Ben Halls Gap Sphagnum Moss Cool Temperate Rainforest community and biodiversity more broadly as they recover from the effects of fire. During five hours of shoot time over these reserves, 23 deer (fallow and red), 34 goats and seven pigs were shot. The 2019-20 bushfire burnt approximately 10% of the threatened community based on early assessments. In addition, the long-term impact of severe drought on this community needs to be followed after reasonable Autumn and Winter rains helped recovery. Funding will be sought to more intensively manage and monitor this very localised and vulnerable community in upcoming years.

Darwinia peduncularis

Site	Partner	Type	Cost
Wollemi	EES	In-kind	\$1,500
	Australian Government Bushfire Recovery program	Cash	\$2,000

Wollemi site summary: In response to the 2019-20 bushfires, funds from the Commonwealth Bushfire Recovery Fund were received to commence post fire threat assessment at the Wollemi Saving our Species site. Site assessment was limited in 2020 due to logistical delays and issues with access to sites. Further work planned September/October 2020 and fire severity and baseline recruitment data will be collected at this time.

Euphrasia arguta

Site	Partner	Type	Cost
Big Oaky Creek	EES	In-kind	\$1,600

Big Oaky Creek site summary: The site was severely impacted by the 2019-20 bushfires and surveys for the species were not conducted as a result. Discussions were held with Forestry Corporation ecologists and species experts to consider post-fire management and monitoring options. Follow-up monitoring is planned in the next 12 months.

Murder Dog site summary: The 2019-20 fires impacted adjacent areas and potentially this site. Discussions were held with Forestry Corporation Ecologists and species experts to consider post-fire management and monitoring options. Follow-up monitoring is planned in the next 12 months.

Euphrasia ciliolata (Polblue Eyebright)

Site	Partner	Type	Cost
Barrington Tops	EES	In-kind	\$561
	EES	Cash	\$900
Werrikimbe	EES	In-kind	\$15,415

Barrington Tops site summary: A large area of habitat for the species was burnt in a 2019-20 bushfire. Feral pigs and horses will have an impact on the species post-fire by grazing on regenerating plants. Aerial shooting for feral pigs was undertaken as part of the post-fire recovery program.

Werrikimbe site summary: This site was impacted by the 2019-20 bushfires and surveys were not undertaken for the species as a result. Control of feral pigs was undertaken as part of a landscape wide post-fire aerial shoot program in addition to the annual integrated pig trapping program at the site. Post-fire monitoring will be implemented over the next 12 months to assess population recovery.

Euphrasia bowdeniae (Blue Mountains Cliff Eyebright)

Site	Partner	Type	Cost
Katoomba landslide	EES	In-kind	\$2,100
	Saving our Species Volunteers	In-kind	\$3,500
National Pass	EES	In-kind	\$1,050
	Saving our Species Volunteers	In-kind	\$1,050

Site summary: A total of 66 plants were observed in October 2019 at the same locations where 57 plants were recorded in October 2018. Additional locations within the site were surveyed this year and included the mid-section of the cliff not visible from the bottom or top, that was searched by abseiling down to a pitch on Malatia Wall and viewing across through binoculars. Similarly, a section of landslide not visible from the bottom was able to be observed from the top of the cliff through binoculars. While exact counts were difficult to achieve, it is likely that these searches resulted in anywhere between 20-40 additional individuals observed, suggesting the population is likely to be larger than previously thought.

Grevillea acanthifolia* subsp. *Paludosa (Bog Grevillea)

Site	Partner	Type	Cost
Bega Swamp	EES	In-kind	\$6,750

Bega Swamp site summary: No planned work was done on this species this financial year. The results from the susceptibility trials last year showed that the species is unaffected by *Phytophthora cinnamomi* under glasshouse conditions. The effect of the 2019-20 bushfires has not been assessed. The Bega Swamp population was unlikely to have been burnt whereas the Nalbaugh population was likely to have been burnt. Post-fire aerial shooting for feral animals was conducted by National Parks and Wildlife Service; three hours of shoot time was allocated to this species.

Grevillea rhizomatosa (Gibraltar Grevillea)

Site	Partner	Type	Cost
Moogem	EES	In-kind	\$950
Dandahra	NSW Rural Fire Service	Cash	\$120,999
	EES	In-kind	\$950
Gwydir Highway	NSW Rural Fire Service	Cash	\$120,999
	EES	In-kind	\$950
Murrumbooee	EES	In-kind	\$1,650

Moogem site summary: This site was heavily impacted by the 2019-20 bushfires. At this site, 10.2% had a severe fire intensity, 5.40% had a moderate to high fire severity and 2% was unburnt.

Dandahra site summary: This site was heavily impacted by the 2019-20 bushfires. At this site 4.7% had a severe fire intensity, 13.1% had a moderate to high fire severity and 0.5% was unburnt.

Gwydir Highway site summary: This site was heavily impacted by the 2019-20 bushfires. At this site 7% had a severe fire intensity, 70% had a moderate to high fire severity and 2.2% was unburnt.

Murrumbooee site summary: This site was heavily impacted by the 2019-20 bushfires. At this site 27.7% had a severe fire intensity, 9.9% had a moderate to high fire severity and 4.2% was unburnt.

Granite Picnic Area site summary: This site was heavily impacted by the 2019-20 bushfires. At this site 3.9% had a severe fire intensity, 1.5% had a moderate to high fire severity and 1% was unburnt.

Across the five site managed sites, 57% had a severe fire intensity, 32% had a moderate to high fire severity and 11% was unburnt. Post-fire assessment identified that the population was starting to recover including re-sprouting from lignotubers. Follow-up assessment of fire recovery is planned to occur within the next 6 months for this population.

Kurnell Dune Forest in the Sutherland Shire and City of Rockdale

Site	Partner	Type	Cost
Kurnell – Towra Point Nature Reserve	Greater Sydney Local Land Services	Cash	\$18,994
	EES	In-kind	\$18,441

Kurnell – Towra Point Nature Reserve site summary: In 2019-20 two weed contractors focused on the control of priority weeds including bitou bush, lantana, ground asparagus and juncus acutus in various areas across Towra Point with a focus on known locations of *Syzygium paniculatum*. Contractors will continue to work through 2020-21 with an additional grant being sought for 2020-22 to continue implementing weed control actions across Towra Point Nature Reserve.

Leionema lachnaeoides

Site	Partner	Type	Cost
Narrow Neck	EES	In-kind	\$4,650

Narrow Neck site summary: Known plants at this site all occurred on a small rocky peninsula over an area of less than 100 square metres. The site was completely burnt at high intensity during the 2019-20 bushfire, killing all but one of the 15 known plants. No stems remained post-fire. During monitoring six months post-fire, three possible recruits were identified. Recreational visitation at the site is very low.

***Melichrus* sp. Newfoundland State Forest**

Site	Partner	Type	Cost
Chambigne Nature Reserve	EES	In-kind	\$1,050

Chambigne Nature Reserve site summary: A shrub that is endemic to the Clarence sandstones subregion. Adult plants were observed to be killed by fire in Yuraygir State Conservation Area, and Tallawudjah Nature Reserve following the November 2019 bushfire. No seedling recruitment has been seen in these populations. The largest population in Flaggy Creek Nature Reserve (1600 plants) was not burnt. A hazard reduction burn is proposed in Flaggy Creek Nature Reserve presenting an opportunity to study the post fire response of the *Melichrus*.

***Micromyrtus grandis* (Severn River Heath-myrtle)**

Site	Partner	Type	Cost
Severn River Nature Reserve	EES	In-kind	\$800

Severn River Nature Reserve site summary: Surveys and seed collection were not undertaken due to the impact of 2019-20 bushfires on staff resources.

Myriophyllum implicatum

Site	Partner	Type	Cost
Pilliga National Park	EES	In-kind	\$3,950

Pilliga National Park site summary: Due to increased rainfall, a mass germination event occurred within suitable habitat for this species. Samples of a suspected *Myriophyllum* species were provided to the NSW Herbarium for identification. They were determined to not be *Myriophyllum implicatum*, but it was not clear to which *Myriophyllum* species they should be assigned.

***Persoonia bargoensis* (Bargo Geebung)**

Site	Partner	Type	Cost
Bargo	Australian Government Bushfire Recovery Program	Cash	\$1,500
	EES	In-kind	\$2,000

Bargo site summary: In response to the 2019-20 bushfire, funds from the Commonwealth Bushfire Recovery Fund were received to commence post-fire threat assessment at the Bargo Saving our Species site. Three

locations with the site have been assessed for fire severity and recruitment with further work planned September/October 2020 and May 2021.

Persoonia hirsuta (Hairy Geebung)

Site	Partner	Type	Cost
Bargo	EES	In-kind	\$800
	Australian Government Bushfire Recovery Program	Cash	\$2,000
Parr	EES	In-kind	\$400
	Australian Government Bushfire Recovery Program	Cash	\$1,500
	Western Sydney University	In-kind	\$350
Yengo	Australian Government Bushfire Recovery Program	Cash	\$1,500
	EES	In-kind	\$400
	Western Sydney University	In-kind	\$350

Bargo site summary: In response to the 2019-20 bushfires, funds from the Commonwealth Bushfire Recovery Fund were received to commence post-fire threat assessment at the Bargo Saving our Species site. Site assessment was completed at three areas (Yanderra 1, Yanderra 2 and Bargo River) across the burnt areas with fire severity varying across all three areas. Four post-fire recruitment plots have been established at Yanderra 1 while at the other two areas around historic records (Bargo River and Yanderra 2) no recruitment was noted. Further monitoring of these areas is planned over the next 6-12 months.

Parr site summary: In response to the 2019-20 bushfires, funds from the Commonwealth Bushfire Recovery Fund were received to commence post fire threat assessment at the Parr Saving our Species site. Site assessment was completed at extant records across the burnt area with fire severity recorded as low to moderate. Twelve post fire recruitment monitoring plots have been established, with six each in burnt and unburnt areas. Fifty-three seedlings were tagged across these plots. Further monitoring of these plots is planned over the next 6-12 months.

Yengo site summary: In response to the 2019-20 bushfires, funds from the Commonwealth Bushfire Recovery Fund were received to commence post fire threat assessment at the Yengo Saving our Species site. Initial site visit undertaken in June 2020 however fire severity assessment and post-fire plots are yet to be established. Further work is planned in September/October to complete the severity assessment and establish monitoring plots.

Pimelea venosa (Bolivia Hill Rice-flower)

Site	Partner	Type	Cost
Research	EES	In-kind	\$7,000

Research site summary: During the reporting year, no known population of *Pimelea venosa* existed in the wild, and only the soil seedbank at the last known patch was likely to resurrect the species naturally. Trials were conducted both ex situ and at the last known patch using (1) abundant and consistent watering, (2) water percolated through eucalyptus ash spread over the soil seedbank to simulate smoke treatment, (3) removal of competing understorey, (4) soil disturbance, (5) scarification of seeds and (6) correlation of sprouting with ambient temperature. Interactions of these stimulants were also trialled where adequate sampling was feasible. Fire was not trialled at the known patch (i.e. in small plots) due to drought conditions. Results from ex-situ trials continue to emphasise that abundant water is adequate in itself to stimulate a small percentage of the seeds to germinate. In 2019 a wildfire of low intensity burnt the known patch and close monitoring of the result was initiated. Within the reporting year no seedlings were observed but the consistent rainfall during Autumn and early Winter lent optimism that the first ever observed wild recruitment might occur.

Bolivia Hill Nature Reserve site summary: The severe drought prevented any testing of translocation to the Bolivia Hill Nature Reserve or other non-garden sites. Techniques to establish plants under natural condition without excessive maintenance effort will be refined with multiple trials before being applied to areas with more challenging access and monitoring.

Ranunculus anemoneus (Anemone Buttercup)

Site	Partner	Type	Cost
Kosciuszko National Park	EES	In-kind	\$3,537

Kosciuszko National Park site summary: This year, 20 permanent monitoring plots were established across four key population sites representative of the known range extent of the species across Kosciuszko National Park. Initial surveys were undertaken to collect baseline data for species population, browsing pressure, weed extent and general condition of habitat. This information is essential in determining trends impacting on species health which will inform management actions to mitigate threats as they emerge or escalate. Long-term plot surveys will also provide a measure of persistence of the species, contributing to the known ecology of the plant and

potentially sculpting survey methodologies. Surveys for additional populations have also commenced, covering 17 hectares to date, which will provide a greater concept of the habitat requirements and overall population estimates of the anemone. In the coming summer season, remote cameras will be deployed to quantify browsing species and pressure across impacted populations.

Symplocos baeuerlenii (Small-leaved Hazelwood)

Site	Partner	Type	Cost
Nightcap National Park	EES	In-kind	\$1,050
Mt Jerusalem National Park	EES	In-kind	\$1,050

Nightcap and Mt Jerusalem National Parks site summaries: Post 2019-20 bushfire funding was not provided in the 2019-20 financial year. Desktop assessment estimated 15% of the species point locations were burnt in the 2019 fire (Google Earth Engine Burnt Area Map assessment). A fire response plan for the species was developed following the fires. Funding has been provided for the 2020-21 financial year to assess impacts to this species and provide information and data for use in fire planning. In-kind surveys were undertaken along accessible vehicle trails within the species habitat in eastern Nightcap and Western Mt Jerusalem. A small number of fire-affected individuals that were assessed as part of other survey work, all were listed as mortalities. Occasional individuals on roadside edges and along rainforest edges that had very light fire impacts were recorded as resprouting after fire. Anecdotal evidence (based on limited samples) shows *Symplocos baeuerlenii* is a weak resprouter and is fire sensitive. It is likely that large numbers were lost in the areas affected by fire.

Zieria adenodonta (Wollumbin Zieria)

Site	Partner	Type	Cost
Mount Warning	EES	In-kind	\$1,050

Site summary: No survey or threat actions were planned for 2019-20. Collection and storage of 956 seeds were undertaken from eight plants adjacent to the chained section of the walking track in 2020. The seeds were sent to the Australian Plantbank at Mt Annan.