



SAVING OUR SPECIES

Greenhood Orchid

2022-2023 annual report card

Overall status*

- Populations at all sites are known to be on track.
- Threat management is known to be on track at all sites, and population status is unknown at one or more sites.
- **Threat management is known to be off track at one or more sites, and population status is unknown at one or more sites.**
- Populations at one or more sites are known to be off track.

* For SoS priority management sites (may not include all locations where the species occurs in NSW)

Summary

Management sites	Gundabooka National Park; Mungah Woodstock Reserve (Little Mount); Mutawintji National Park; Pilliga State Conservation Area; Yathong Nature Reserve
Action implementation	7 (of 10) management actions were fully or partially implemented as planned for the financial year.
Total expenditure	\$8,388 (\$7,338 cash; \$1,050 in-kind)
Partners	Environment and Heritage Group



Scientific name:
Pterostylis cobarensis

NSW status:
Vulnerable

Commonwealth status:
Not listed

Management stream:
Site-managed species

Photo: Lachlan Copeland

Priority management site: Gundabooka National Park

<p>Local government area: Bourke</p> <p>Partners: Environment and Heritage Group</p>	<p>Population outcome</p> <ul style="list-style-type: none"> ● On track ● On track (inferred) ● Not on track (inferred) ● Not on track <p>The species population is inferred to be on track based on threat management being on track. The population trend is unknown at this time.</p>
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Monitoring

Species population monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Baseline monitoring conducted.

Monitoring metric	Species abundance
Monitoring result	Baseline data collection located 79 plants at Mulgowan plot (62 flowering and 17 infertile), 4 plants at Ben Lomond plot (4 flowering), 62 plants at Humes Creek plot (35 flowering, 27 infertile).
Scientific rigour of monitoring method	High
Conducted by	Environment and Heritage Group

Investment

Participant	Cash	In-kind
Environment and Heritage Group	\$0	\$350

Management actions

The following actions are those identified as being required in financial year 2022-2023 to secure the species in the wild.

Threat	Management action	Implemented as planned?
Feral goats, rabbits and pigs (grazing, browsing and erosion). Rabbits have been known to dig up the tubers.	Implement integrated feral herbivore control program.	Yes
Lack of information on species locations and population sizes.	Undertake additional surveys in suitable habitat for new populations of the species.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Feral goats, rabbits and pigs (grazing, browsing and erosion)	Threat presence/absence within monitoring plots	Baseline data collection

Rabbits have been known to dig up the tubers.		
Lack of information on species locations and population sizes.	Baseline data collection for one additional population annually.	Not assessed
Feral goats, rabbits and pigs (grazing, browsing and erosion). Rabbits have been known to dig up the tubers.	Baseline data collection for threat presence/absence	On track
Need to understand the viability of seed and the relationship with symbiotic fungi, particularly from populations at limits of east-west distribution. Need to collect seed from all known populations for storage at Mount Annan Botanical Gardens.	Liaise with Royal Botanic Gardens to undertake seed collection under suitable conditions.	On track

Site summary

Surveys were conducted this financial year at 3 sites in Gundabooka National Park following on from decent seasonal rainfall. A total of 141 plants were found at known populations around the base of Mount Gunderbooka, in suitable habitat, with 97 of these flowering. The timing of the surveys was prior to seed set and no seed was collected for *ex situ* storage or populations. An additional location with 4 plants was located in Mulga woodland, where the species had been previously recorded but not seen for some time. Widespread rain and flooding of western NSW shortly after this survey prevented follow up work and seed collection. While goats, pigs and rabbits remain a constant threat to this species in the landscape, there was no evidence of browsing or disturbance to any of the sites during this survey. An integrated pest control program for the reserve removed over 3,000 goats in this financial year, reducing the threat to this species. Ongoing monitoring at established plots every 1-3 years, along with additional habitat searches dependent on suitable growing conditions, will be undertaken.

Priority management site: Mundoobie Travelling Stock Reserve (Little Mount)

<p>Local government area: Warren</p> <p>Partners: Environment and Heritage Group</p>	<p>Population outcome</p> <ul style="list-style-type: none"> ● On track ● On track (inferred) ● Not on track (inferred) ● Not on track <p>The species population is inferred to be off track based on threat management being off track. The population trend is unknown at this time.</p>
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Monitoring

Species population monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Monitoring metric	Species abundance
Annual target	Count and GPS locate all individual orchids above ground within the established 2 ha quadrat.
Long term target	To have established a stable and secure population by 2039 (within 20 years). Stable is defined as a large enough population to be considered viable by an expert group. Secure is defined as the presence of a conservation management agreement on the travelling stock reserve.
Monitoring result	Not determined, survey was not able to be conducted due to flooding.
Scientific rigour of monitoring method	Not applicable
Conducted by	Environment and Heritage Group

Investment

Participant	Cash	In-kind
Environment and Heritage Group	\$240	\$0

Management actions

The following actions are those identified as being required in financial year 2022-2023 to secure the species in the wild.

Threat	Management action	Implemented as planned?
Disturbance associated with overgrazing. Grazing/trampling by stock during flowering period is detrimental, and ground compaction above tubers in the dormant period may be a problem in high stock travel/rest areas.	Construct 5 small grazing animal exclosures that encompass >1 orchid across the Mundoobie travelling stock route (TSR) site. This provides replicates for monitoring threat outside exclosures and responses inside. Exclosures cannot be constructed until after orchid	No - logistical delays

	flowering season to identify species locations.	
Weed infestation and competition which degrade the vegetation community.	Conduct weed spraying, if necessary, on any weed species determined to be high priority for control.	No - logistical delays
Lack of information on species locations and population sizes.	Contractor to extensively survey Mount Harris (100 ha) for <i>Pterostylis cobarensis</i> during spring flowering period. Species locations to be mapped and population size and area of occupancy established if present.	No - logistical delays

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Disturbance associated with overgrazing. Grazing/trampling by stock during flowering period is detrimental, and ground compaction above tubers in the dormant period may be a problem in high stock travel/rest areas.	No evidence of overgrazing recorded at time of species monitoring.	Not assessed
Disturbance by feral pigs.	No evidence of feral pig or other large feral animals recorded during species monitoring.	Not assessed
Weed infestation and competition which degrade the vegetation community.	No record of weed presence at an abundance high enough to warrant control action at time of species monitoring.	Not assessed
Lack of information on species locations and population sizes.	Maintain or reduce level of threat.	On track

Site summary

Rainfall and flooding meant that the site was inaccessible during flowering season. The SoS Project Coordinator did not survey in 2022-23 and was therefore unable to assess amount of weeds or to install fencing to protect population. The need for fencing should be re-examined as the land manager is very open to negotiating stock exclusion at certain times of year. Further surveys targeting surrounding hills is planned for 2023-24.

Priority management site: Mutawintji National Park

<p>Local government area: Central Darling; Unincorporated - Far West Area</p> <p>Partners: Environment and Heritage Group</p>	<p>Population outcome</p> <ul style="list-style-type: none"> ● On track ● On track (inferred) ● Not on track (inferred) ● Not on track <p>The species population is inferred to be off track based on threat management being off track. The population trend is unknown at this time.</p>
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Monitoring

Species population monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Monitoring metric	Species abundance
Annual target	Relocate plants and establish baseline population and calculate area of occupancy.
Long term target	Population remains above 60 plants consistently.
Monitoring result	No plants found.
Scientific rigour of monitoring method	Low
Conducted by	Environment and Heritage Group

Management actions

The following actions are those identified as being required in financial year 2022-2023 to secure the species in the wild.

Threat	Management action	Implemented as planned?
Lack of information on species locations and population sizes.	Undertake additional surveys for new populations of the species.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Lack of information on species locations and population sizes.	Locate at least 60 plants and calculate area of occupancy.	Not on track

Site summary

Although no plants were found this year, the species' response to rainfall may be unpredictable. However, follow-up monitoring is recommended.

Priority management site: Pilliga State Conservation Area

<p>Local government area: Narrabri</p> <p>Partners: Environment and Heritage Group</p>	<p>Population outcome</p> <ul style="list-style-type: none"> ● On track ● On track (inferred) ● Not on track (inferred) ● Not on track <p>The species population is inferred to be on track based on threat management being on track. The population trend is unknown at this time.</p>
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Monitoring

Species population monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Monitoring metric	Species abundance
Annual target	Baseline data collection to establish population numbers at each plot.
Long term target	To establish a stable and secure population by 2039 (within 20 years). Stable is defined as a large enough population to be considered viable by an expert group. Secure is defined as the presence of a conservation management agreement on the travelling stock reserve.
Monitoring result	No additional sites located in Warrumbungle National Park. Unable to verify old records for this species.
Scientific rigour of monitoring method	Not applicable
Conducted by	Environment and Heritage Group

Investment

Participant	Cash	In-kind
Environment and Heritage Group	\$0	\$700

Management actions

The following actions are those identified as being required in financial year 2022-2023 to secure the species in the wild.

Threat	Management action	Implemented as planned?
Feral goats, rabbits and pigs (grazing, browsing and erosion). Rabbits have been known to dig up the tubers.	Assess requirement for fencing at each monitoring site and where applicable. Install fencing if required.	Yes
Lack of information on species locations and population sizes.	Undertake baseline and additional surveys for populations of the species at and around known sites.	Conducted, but not as planned - Extensive rainfall and flooding throughout the Pilliga reserves in 2022-23 prevented access to

monitoring sites. A small-scale survey was conducted in Warrumbungle National Park to verify old records.

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Lack of information on species locations and population sizes.	Baseline data collection for species occurrence, abundance and threats in suitable habitat and growing conditions.	Not assessed
Feral goats, rabbits and pigs (grazing, browsing and erosion). Rabbits have been known to dig up the tubers.	Baseline data collection for threat presence/absence as a percent impact within monitoring plots.	Not assessed
Need to understand the viability of seed and the relationship with symbiotic fungi, particularly from populations at limits of east-west distribution. Need to collect seed from all known populations for storage at Mount Annan Botanical Gardens.	Baseline threat assessment of seed viability and collection of genetic material.	Not assessed

Site summary

Monitoring site establishment and searches for new populations was planned to be conducted by ecological contractors in 2021-22, but were not conducted due to COVID-19 travel restrictions and widespread rainfall and flooding impacting access to the sites during the critical flowering period. Surveys that were planned for October 2022 by ecological contractors across the Pilliga reserves and by Australian Wildlife Conservancy staff in Pilliga National Park were not conducted this financial year due to widespread rain and flooding impacting access to all sites within the Pilliga. A survey was undertaken in similar habitat within Warrumbungle National Park to verify old records for this species in similar habitat to the Pilliga. Approximately 6 ha (6,000 x 10 m transect) was surveyed around the old record during the flowering period, but no plants were located.

Fencing was not installed to protect populations of this species following a review of the action by species experts and National Parks and Wildlife Service staff. The species is known to be widespread in NSW and abundant where it is found. Cost for exclusion fencing of an adequate number of sites was determined to be too costly financially and in terms of staff time to erect and dismantle around each flowering period. Additional issues of animal entrapment and environmental cultural impacts were also determined to make this proposed action unfeasible.





Monitoring is planned to be undertaken in 2023-24 in the flowering period with monitoring plots established. A review of the species status in NSW is planned to be undertaken.

Priority management site: Yathong Nature Reserve

Local government area:
Carrathool; Cobar

Partners:
Environment and Heritage Group

Population outcome

-  On track
-  **On track (inferred)**
-  Not on track (inferred)
-  Not on track

The species population is inferred to be on track based on threat management being on track. The population trend is unknown at this time.

Monitoring

Species population monitoring by one or more methods indicates response to management over time and provides an outcome measure.

Monitoring metric	Species abundance
Annual target	Discover the location of the population.
Long term target	Calculate the area of occupancy (AOO) for this site.
Monitoring result	Zero plants
Scientific rigour of monitoring method	Low
Conducted by	Environment and Heritage Group

Investment

Participant	Cash	In-kind
Environment and Heritage Group	\$7,098	\$0

Management actions

The following actions are those identified as being required in financial year 2022-2023 to secure the species in the wild.

Threat	Management action	Implemented as planned?
Lack of information on species locations and population sizes.	Assess site where known habitat for the species is present and assess threats at each location found.	Yes
Lack of information on species locations and population sizes.	Systematic surveying for orchids to establish location of population.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Feral goats, rabbits and pigs (grazing, browsing and erosion). Rabbits have been known to dig up the tubers.	No sign of disturbance by feral pests.	Not assessed
Lack of information on species locations and population sizes.	Discovery of location of subpopulation.	Baseline data collection

Site summary

Targeted surveys were limited in the 2022-23 financial year. Surveys will again be conducted in 2023-24.