



SAVING OUR SPECIES

Senecio linearifolius var. dangarensis

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	Mount Dangar; Woodlands Trig
Action implementation	1 (of 1) management action was fully or partially implemented as planned for the financial year.
Total expenditure	\$19,745 (\$15,907 cash; \$3,838 in-kind)
Partners	Environment and Heritage Group



Scientific name:
Senecio linearifolius var. dangarensis

NSW status:
Endangered

Commonwealth status:
Not listed

Management stream:
Site-managed species





Photo: M. Fagg, ANBG

Priority management site: Mount Dangar

Local government area:
Muswellbrook; Upper Hunter

Partners:
Environment and Heritage Group

Population outcome

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

Monitoring

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

Monitoring metric	Reproductive success/recruitment
Annual target	In the absence of fire, less than 10% annual reduction in number of plants within monitoring plots.
Long term target	Population stable or evidence of recruitment observed.
Monitoring result	Germination events recorded from October 2019 boosted numbers of individual plants to just over 50% of baseline data in May 2021, declining to 45% by April 2022 and persisting at this level until April 2023.
Scientific rigour of monitoring method	Moderate
Conducted by	Environment and Heritage Group

Investment

Participant	Cash	In-kind
Environment and Heritage Group	\$7,419	\$1,323

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 animals degrading habitat.	Aerial control of pest herbivores.	Yes

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Feral animals degrading habitat.	Nil evidence of feral animal browsing or related habitat degradation within monitoring plots.	On track
High frequency fire suppresses recruitment.	Record species response post fire within all monitoring plots.	On track
Competition from weeds may reduce seedling recruitment.	Less than 12 <i>Opuntia</i> clumps recorded per plot.	On track
Insufficient understanding of ecological/ biophysical processes influencing restricted distribution.	Review action and reconsider relevance of threat for this site.	On track

Site summary

Two monitoring plots were established in stands of *Senecio linearifolius* var. *dangarensis* at Mount Dangar. Monitoring of these plots occurred during 9 visits between October 2016 and April 2023. Increased monitoring occurred over the last 3 years following breaking of the drought and observations of seedlings within monitoring plots.

During monitoring, marked variations in the number of live adult plants were observed. All adult plants died in monitoring plots prior to September 2018 but have recovered to 45% of baseline data. Recent data from all plots suggest that several germination events have occurred since the first seedlings were observed in June 2019, and that flowering first occurs in some individuals as early as 7 months after germination.

Previous analyses have shown a significant relationship between new recruitment and above average rainfall during the 12 months prior to survey, and that seedling germination and persistence occurred following sustained rainfall of more than 70% of the average annual rainfall.

Cochineal (introduced to Mt Dangar as part of this project) continue to effectively suppress the expansion of prickly pear which is no longer observed to be significantly impacting *Senecio* at Mt Dangar. Aerial control of pest herbivores was also undertaken as a threat abatement measure.





A study of the physicochemical properties of soils within the species extent was conducted in early 2023 to provide baseline data so comparisons can be made to soils beyond the population boundaries, including other basalt peaks and at *ex situ* sites at a later time. This may help with understanding why this species is so highly restricted.

Priority management site: Woodlands Trig

Local government area:
Muswellbrook; Singleton

Partners:
Environment and Heritage Group

Population outcome

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

Monitoring

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

Monitoring metric	Reproductive success/recruitment
Annual target	In the absence of fire, less than 10% annual reduction in number of plants within monitoring plots.
Long term target	Population stable or evidence of recruitment observed.
Monitoring result	<i>Senecio</i> has recovered well post drought at the Woodlands site. Due to multiple germination events, the number of plants within monitoring plots is greater than 150% of baseline counts.
Scientific rigour of monitoring method	Moderate
Conducted by	Environment and Heritage Group

Investment

Participant	Cash	In-kind
Environment and Heritage Group	\$8,488	\$2,515

Management actions

No management actions were planned at this site for the financial year.

Threat outcome

Assessment on the status of critical threats at this site.

Threat	Annual target	Threat status
Competition from weeds may reduce seedling recruitment.	Less than 12 <i>Opuntia</i> clumps recorded per plot.	On track

Site summary

The *Senecio* population has persisted at Woodlands through the germination of seedlings across multiple events. Unlike the Mt Dangar site, the population persisted at Woodlands throughout the 2017 to 2019 drought demonstrating the influence of different microclimates. Counts of individuals within monitoring plots were more than 150% of original baseline data in May 2021 and have remained stable as of April 2023. This data suggests the population has recovered well post drought. Growth within monitoring plots is becoming so dense that distinguishing individuals is proving difficult.

A revised search was undertaken at Woodlands in April 2023 to map the boundary of the population. Counts were also undertaken along a series of transects to approximate population size. The revised population estimate is 21,855 individuals, which is an increase on the 14,000 individuals initially estimated in 2017. No immediate threats were found to be impacting this site.

Saving our Species 2022-2023 annual report card for *Senecio linearifolius* var. *dangarensis*. For more information refer to the specific strategy in the Saving our Species program.