



## SITE ASSESSMENTS

Site assessments can be undertaken for several reasons. A general description is that when doing a site assessment, the existing biodiversity is recorded either for future reference or to establish its value for offsets, e.g. when applying for clearing approvals.

Other examples when site assessments are used:

- Sustainable use of a landscape
  - Self-motivated landholder assessment to assess the land condition
  - Site-based monitoring to analyse landscape functions
  - Regional long-term monitoring programs like grazed woodland dynamics monitoring or forest monitoring
- Protection of native vegetation
  - Incentive programs, e.g. Heritage agreements or grant support for works
  - Formal reservation, trying to get an area recognized as reserve, conservation park or national park
- Regulation requires a site assessment
  - Regulatory-motivated landholder assessment, e.g. assessing invasive weeds

- Development applications that include applications to clear native vegetation/offsetting
- Environmental impact assessment, e.g. impact of mining or petroleum activities under the EPA Act 1994

The natural environment fulfils many very important functions and site assessments help us understand how well it is doing those functions.

- Structural aspects
  - Provision of reliable foraging resources for wildlife (e.g. nectar, leaves, seeds)
  - Provision of reliable sheltering resources and/or breeding sites for wildlife
- Functional aspects
  - Nutrient and water cycling
  - Maintenance of soil condition
  - Retention of plant propagules
- Compositional aspects
  - Maintenance of plant species diversity.

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# DEFINING THE OBJECTIVE OF THE ASSESSMENT

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The first step of any assessment is to establish the reason why a survey is done. The objective will determine of how detailed an assessment needs to be.

For example, if the purpose is to get recognised protection as a National Park, a detailed assessment will be necessary to make sure to capture the flora and fauna species. Whereas if it is just about assessing the general functional health of an eco system, then just the number of species need to be recorded, not which species.

- Assessing remnant vegetation for biodiversity across a property
- Assessing the condition of a grazing paddock for biodiversity
- Assessing changes over time for a revegetation project
- Assessing a site before and after a bush fire

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# ESTABLISHING BENCHMARK VALUES

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To be able to compare the data collected, benchmark values need to be established. These values are collected from areas that contain remnant vegetation.

Reference sites should be close to the area that will be assessed and have similar environmental conditions e.g.

- Same regional ecosystem
- Vegetation community
- Similar climate
- Similar landscape conditions
- Similar natural disturbance

The best locations are National or Conservation Parks, but if they are not available, pre-European vegetation compositions are recorded in Nature Maps and local Council's mapping can help find remnant vegetation along road sides.

Some neighbouring landholders may have patches of remnant vegetation that can also be used to create benchmarks.

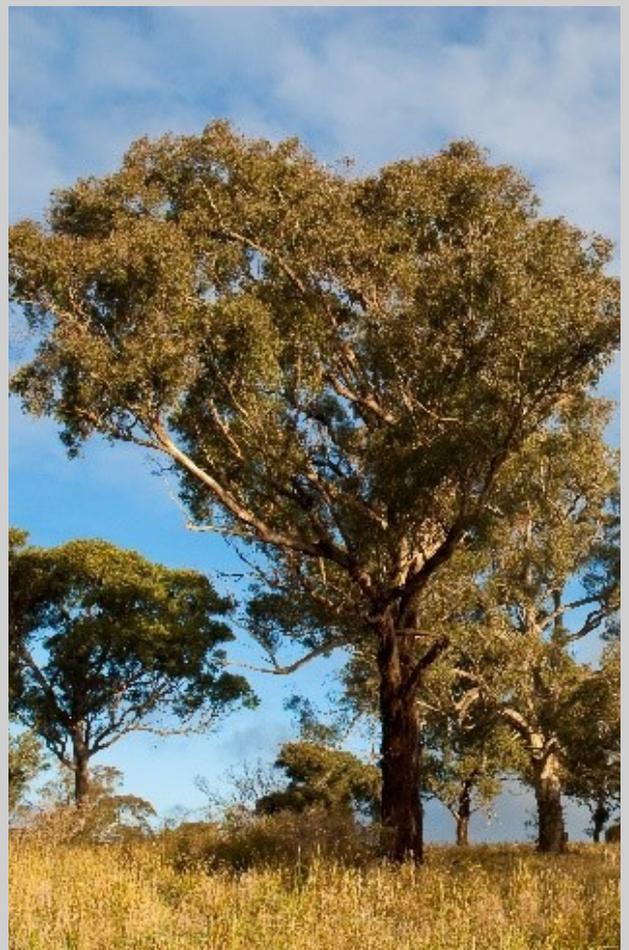
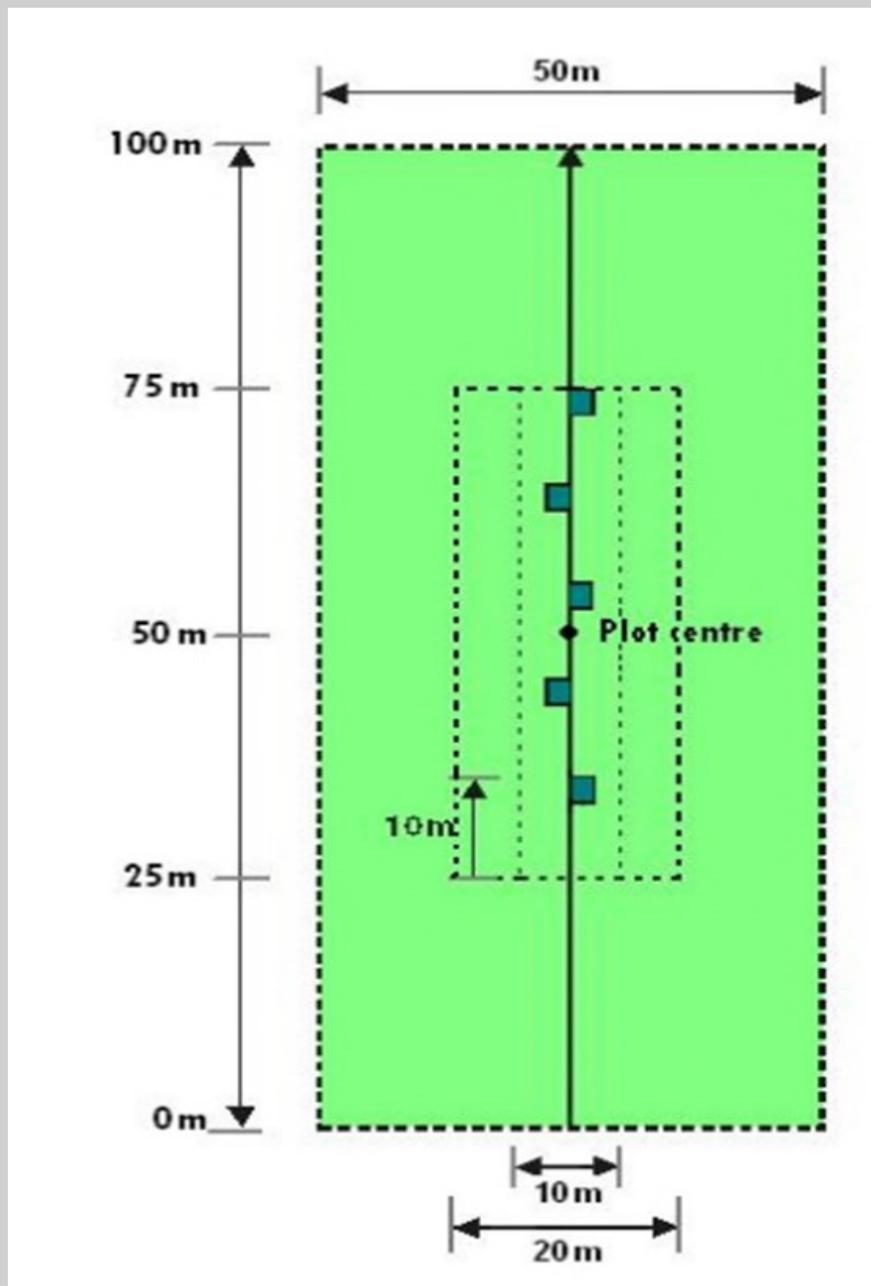


Image: Grassy Woodland

# SETTING UP AN ASSESSMENT SITE

There are a few ground rules that should be followed when choosing a site.

- Staying away at least 50m from road sides, will help reduce recording the impact of the so called 'edge effect'.
- Remember that a reference site should be as natural as possible. However, if the aim is to record the impact of the edge effect, the reference site would be away from the road, but the assessment site would be close to the road.
- The site should follow the contour along a slope as opposed to up or down a slope.
- The plot centre at 50m along the transect should be permanently marked for future reference, as should be the GPS location and direction of the transect, e.g. north/south.
- Photos should also be taken from the plot centre, in all four directions (N/E/S/W) for future reference.
- Choosing the right time is also important as assessing an ecosystem during the growing season will show more diversity as during a drought or hot summer months.



# SETTING UP AN ASSESSMENT SITE

- 100m x 50m area: assessed for number of large trees, recruitment of canopy species, tree canopy height and native tree species richness.
- 100m transect: assessment of tree canopy cover and native shrub canopy cover.
- 50m x 10m sub-plot, centred from the 25m point to the 75m point along the centre transect, and encompassing 5m either side of the transect: assessed for non-native plant cover and native plant species richness of shrubs, grass and non-grass species.
- 50m x 20m sub-plot, centred from the 25m point to the 75m point along the transect, and encompassing 10m either side of the transect: assessed for coarse woody debris.
- Five 1m x 1m quadrats, starting at the 35m point and located on alternate sides of the centre-line, 10m apart along the 100m transect: assessed for native grass cover and organic litter (an average value is derived over the five quadrats).

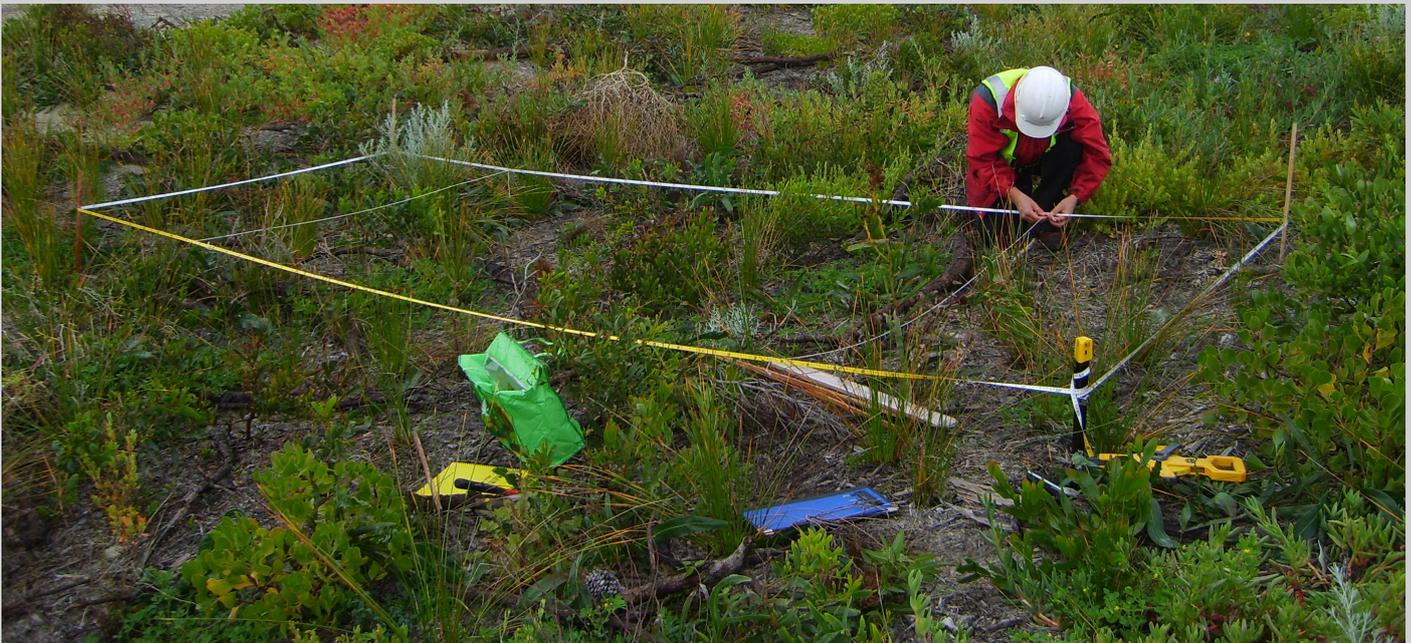
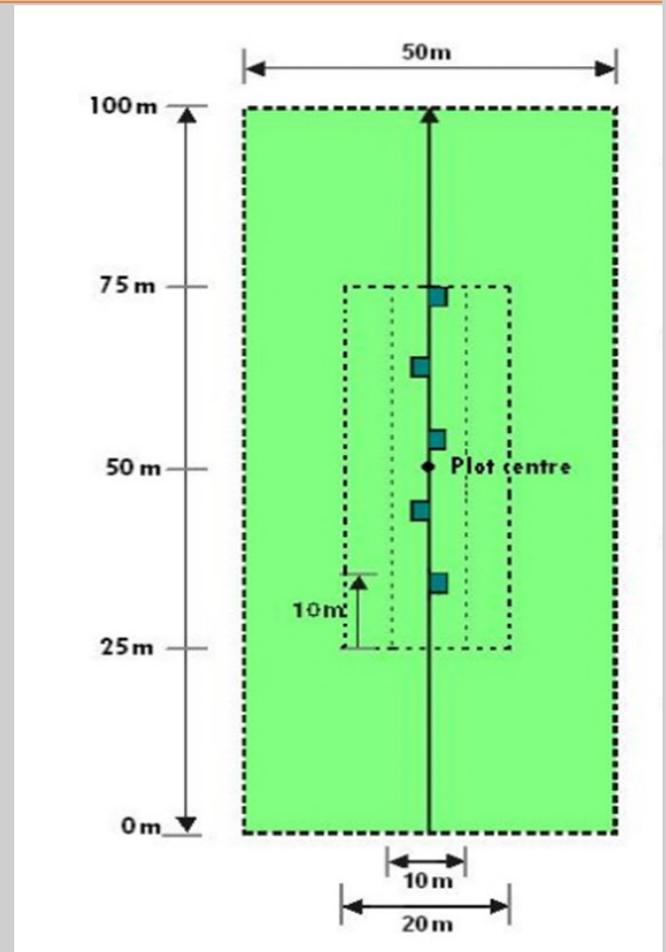


Image: Assessment site, Source: 360environmental.com.au

How an assessment site is set up doesn't really matter as long as it stays the same over the recording period anticipated and as long as it covers everything that needs to be recorded.

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# ASSESSABLE ATTRIBUTES DEPENDING ON ECOSYSTEMS

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Different ecosystems have different attributes. A woodland or wooded ecosystem contains trees, shrubs, woody debris, grasses and groundcovers, whereas a grassland pretty much only contains grasses and small herbs.

The vegetation community described as open grassland can be found in the references and resources at the end. Detailed information and record sheets can be found in the references and resources at the end.



Image: Native Grassland, Source: [www.acf.org.au](http://www.acf.org.au)



Image: Woodland in Kaiserstuhl Conservation Park, Source: [www.walkingsa.org.au](http://www.walkingsa.org.au)

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# EXAMPLE

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## Peppermint Box Grassy Woodland

The Bushgardens are not only a seed orchard and a place for recreation, but also for education. For this reason a 1 Ha site of critically endangered Peppermint Box Grassy Woodland (PBGW) will be established in early 2022.

What we want to achieve is a dominant tree canopy of *Eucalyptus odorata*, but other tree species can be present.

Trees and tall shrubs are sparse and tussock-forming perennial grasses and Iron-grasses dominate the ground layer.

A range of herbaceous plant species occurs in the inter-tussock spaces.

According to Andrew Fairney from Seeding Natives Inc., recreating the same conditions as on the reference site will not be possible for a range of reasons.

“The one reason to rule them all is that the BBG is on a flood plain and when it floods, copious amounts of every agricultural weed seed known to the Barossa Valley washes onto the site and would be a management nightmare for a native grassland that is as well spaced out as the reference site.”

“Those species can most certainly be included in the site but the density of native grasses needs to be considerably more to give it the resilience required for the long term.”

To record the change from weed cover to native plant cover and to record the amount of native plant species surviving on the site over the next years, annual site assessments will be undertaken.

During the first site assessment, GPS data, photo points and plant cover was recorded. Not surprisingly, only introduced plant species were found and no trees or shrubs are on the site at the moment.

The next site assessment will hopefully show a dramatic reduction in introduced plants and the first native grasses germinating. By then, volunteers and the community should have finished planting most of the tubestock trees and shrubs that are being propagated in the BBG nursery at the moment.



Image: *Eucalyptus odorata* (Peppermint Box), Source: Ivan Holliday, flickr.com

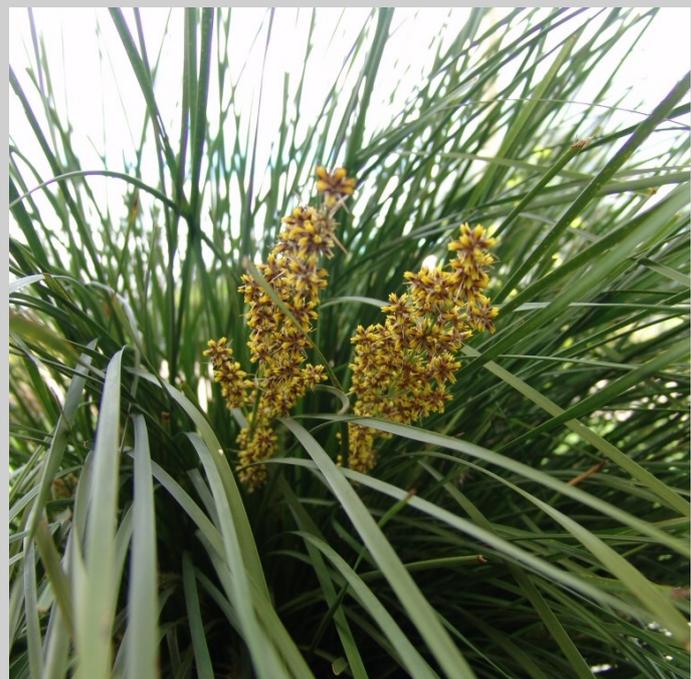


Image: *Lomandra longifolia*, Source: gardeningwith-angus.com.au

References and Resources:

[BioCondition: A condition assessment framework for terrestrial biodiversity in Queensland \(www.qld.gov.au\)](http://www.qld.gov.au)

[https://www.qld.gov.au/\\_\\_data/assets/pdf\\_file/0029/68726/biocondition-assessment-manual.pdf](https://www.qld.gov.au/__data/assets/pdf_file/0029/68726/biocondition-assessment-manual.pdf)

[BioCondition Datasheet v2.4 \(www.qld.gov.au\)](http://www.qld.gov.au)

[https://www.qld.gov.au/\\_\\_data/assets/pdf\\_file/0023/68234/biocondition-datasheet.pdf](https://www.qld.gov.au/__data/assets/pdf_file/0023/68234/biocondition-datasheet.pdf)

[Methodology for the Establishment and Survey of Reference Sites for BioCondition \(www.qld.gov.au\)](http://www.qld.gov.au)

[https://www.qld.gov.au/\\_\\_data/assets/pdf\\_file/0027/68571/reference-sites-biocondition.pdf](https://www.qld.gov.au/__data/assets/pdf_file/0027/68571/reference-sites-biocondition.pdf)

[BioCondition Reference Datasheet \(www.qld.gov.au\)](http://www.qld.gov.au)

[https://www.qld.gov.au/\\_\\_data/assets/pdf\\_file/0020/68420/biocondition-ref-datasheet.pdf](https://www.qld.gov.au/__data/assets/pdf_file/0020/68420/biocondition-ref-datasheet.pdf)

Note: Even though these resources are from Queensland, they can still be used to assess sites in SA.

Cover Image: [Site Assessment and Feasibility | N Consulting Engineers \(nconsulteng.com\)](http://nconsulteng.com)

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Opening hours:

Monday and Friday by appointment

Tuesday & Thursday

9 am - 4 pm

Wednesday

9 am - 12.30 pm

Saturday and Sunday closed



*The Barossa Council*

