

# Reconnaissance land unit mapping for planning and decision making

The following survey method was developed to collect physical and biological data at the land unit level, to inform potential habitat restoration prescriptions and design. The land unit mapping baseline descriptions involves the mapping and description of areas of largely homogeneous vegetation composition and cover, regardless of whether this is native or introduced.

## Data Collection

For each land unit, the following information is recorded in the field as per the Data Sheet (Appendix A). Terminology and attribute parameters are those used in (Heard and Channon, 1997 Guide to a Native Vegetation Survey (Agricultural Region) Using the Biological Survey of SA Methodology, Department of Housing and Urban Development):

### General Information

- Land unit number
- Observer and date
- Current land use
- Photo location and direction facing

### Physical Description

- Typical landforms within the unit<sup>1</sup>
- Typical soils (presumed depth, surface soil texture)
- Ranges of slope and aspect
- Cover estimates of bare ground, exposed rock, leaf litter, thatch, biological soil crusts
- Any land degradation issues or other relevant observations

### Vegetation Description

- Vegetation structural formation
- Species present (native and introduced)
- Their relative frequency within the unit
- Their manner of distribution within the unit
- Their typical cover abundance within the unit (Braun Blanquet)
- Their life form (Muir code)
- Observations of recruitment or senescence

### Any restoration suggestions or implications or other relevant observations

### Opportunistic fauna observations

**Other key ecological attributes and/or distinguishing features**, such as physical or biological habitat features

**Any other issues of note, such as threatening processes that may impede restoration**

## Data Delivery

### Spatial format

The land units are mapped in ArcGIS and include the following feature classes (either shapefiles or geodatabases):

- Land units are mapped as polygons and include land unit code and area (ha)
- Locations of photopoints are mapped as points and include direction of photo
- Locations of significant weeds are mapped as points
- Fenceline locations are mapped as line feature classes and include description and condition of fencing

### Biological Database of South Australia

Species and physical attribute data is entered into an Excel table in a format compatible with automatic upload into the Biological Database of South Australia. To date, fauna, flora and physical data has been recorded and entered into the Biological Database of South Australia at the scale of the land unit. Survey 844 was registered to record this data for the AMLR BioFund project aimed at property restoration planning and revegetating.

For other projects where the above method is used and/or adapted separate project registration to obtain a specific survey number is recommended (refer biological project registration factsheet:

[http://www.environment.sa.gov.au/Science/Information\\_data/Biological\\_databases\\_of\\_South\\_Australia/Information\\_sharing](http://www.environment.sa.gov.au/Science/Information_data/Biological_databases_of_South_Australia/Information_sharing)).

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# Appendix A: Data Sheet

Location:..... Date:.....  
 Observer/s:.....

LAND UNIT.....

Photo #:		WP # for photo:		Degrees photo taken:					
Current land use:									
Typical landforms:									
Typical Soil – Colour:			Texture:		Depth (cm):		pH:		
Surface Rock Type:									
Slope (clinometer degrees):				Aspect (1 – 360°):					
Cover estimates:									
Bare ground (%)	Rock outcrop	Surface strew		Leaf litter (%)	Thatch (%)	Soil crust (%)	Native biomass* (%)	Weed biomass* (%)	Moss (%)
	<b>9</b> (nil) <b>1</b> (<10%) <b>2</b> (10-50%) <b>3</b> (>50%)	<b>9</b> (nil) <b>1</b> (<10%) <b>2</b> (10-30%) <b>3</b> (30-70%) <b>4</b> (>70%)							
*Biomass of foliage touching ground to a height of 1 m									
Threatening processes ( significant weed outbreaks, land degradation issues):									
Restoration suggestions or other observations:									
Key ecological attributes (physical / biological)									
Vegetation Association and Structural Formation									





## Relative Frequency Definitions

Relative Frequency	% of land unit "quadrats" occupied by species
Rare	1 – 4
Occasional	5 – 19
Frequent	20 - 49
Common	50 – 74
Abundant	≥ 75%

## Manner of Distribution Definitions

Localised	Main distribution is confined to 1 – 5 areas within each land unit, and total distribution < 25% of land unit
Skewed	Majority of distribution is within one area, with lesser frequencies and/or cover in remainder of land unit.
Clumped	Plant species occurs in clumps: for trees and shrubs > 10 individuals within each clump (individuals within each clump separated by < 3 crown separation ratios on average). Distance between clumps is greater than 10 crown separation ratios. For herbs, grasses and sedges, > 100 plants within each clump with each plant < 2 m from another. Distance between clumps is > width of clump
Random	Generally occurs as < 10 individuals (trees and shrubs) or < 100 individuals (grasses, herbs and sedges) with distances between individuals/small clumps being highly variable.
Regular	Distance between individuals and/or clumps is relatively uniform and occurs throughout
Widespread	Occurs over >75% of land unit

The terms are not mutually exclusive eg widespread and random OR widespread and clumped OR widespread and regular.

