

Step 1

Assess and map the physical site features and identify management units

Landform and soils have a strong influence on vegetation and land use.

Vegetation is strongly influenced by the physical characteristics of an area. To understand what is happening to grassy vegetation it is necessary to map the physical features of the site that it occurs on.

Landform and its underlying geology strongly influence soil fertility, vegetation structure and composition. Forest, woodland and grassland are associated with different landforms and soils. There are further differences within these vegetation types due to local variations in aspect, moisture, drainage and temperature.

Dynamics of the vegetation can also differ. For example, weeds more readily replace native vegetation in drainage lines than on dry slopes. Shallow soils on steep slopes are more likely to erode if the perennial vegetation is removed.

Landform and soil fertility are two of the most important factors affecting the choice of land for agriculture. Low lying, deeper, fertile soils suit more intensive pastoral and agricultural land use because they are more easily cultivated and converted to introduced perennial pasture or annual crops. High vegetation cover and pasture growth on such land also allows more intensive stocking rates. Cropping and grazing in these areas of high fertility have resulted in the decline of native vegetation. Relatively intact native vegetation on fertile arable soils is of very high conservation significance because so little remains.

Steeper, less fertile slopes are less likely to be used for cultivation, and the native vegetation on them tends to persist. As a result native vegetation and fauna habitat on such sites is likely to be better represented and more easily retained. It becomes more important to deliberately conserve such steep, non-arable slopes if little other native vegetation remains in a region or on a property.

Aims

- Map the natural and physical features that are present on the site being assessed.
- Identify and map obvious boundaries between different types of vegetation, for example, woodland, forest, grassland and cultivated pasture.
- Identify and map the main landforms in the site.
- Identify management units based on the characteristics that have been mapped.
- Record the main characteristics of each management unit.
- Identify issues needing attention.

Materials

Sheet 1

Map

Overlays 1, 2 and 3

Coloured markers

Pencil



Table A: Checklist of physical features for mapping

Natural features include:	Management features include:
Creeks, rivers	Fences
Drainage lines	Tracks and roads
Rocky outcrops	Gates
Areas of native trees	Dams and other watering points
Areas of planted trees	Buildings, yards
Areas of native grasses	Dense weed infestations
Areas of scrub	Scattered but abundant weeds
Areas of regeneration	Erosion gullies
Areas of introduced pastures	Ploughed areas
Significant vegetation or wildlife habitat	Areas burnt previously

Method

1. **Acquire an aerial photo or topographic map** of the site to be assessed (sources are listed in the reference section).
2. **Map major physical features of the site** on Overlay 1. Mark north on the map and on each overlay. This will help to keep a bearing, identify property boundaries, slope and aspect and will readily relate the map to the overlays. Use Table A as a checklist.
 - Show fencing, roads, tracks, buildings and dams, rocky outcrops and creek lines.
 - Draw the obvious boundaries of native vegetation, and clumps of trees. Include areas of natural significance if these are known.
3. **Map the landforms and corresponding land classes** on Overlay 2. Use Table B to identify these. Number each landform area with its corresponding land class number, 1 to 5.
4. **Compare land classes and existing land use areas** on the Map, Overlay 1 and Overlay 2. This will show where land classes overlap existing land use areas.
5. **Draw management unit boundaries** on Overlay 3 based on:
 - existing land use areas;
 - physical features;
 - land classes; and
 - complexity and size.

Label each unit using a name; for example 'Smiths Paddock', 'upper Smiths Paddock', 'lower Smiths Paddock' or a letter code of A to Z.
6. **List the land management units and record features** using Sheet 1. Record the corresponding land classes, landform and site features shown on the sheet. The area of the land management unit can be grouped as: less than (<)1; 1–5; 6–10; 10–50; greater than (>) 50 ha. Refer to example 1.
7. **Review the mapping.** Check the accuracy of information in the field and revise it if necessary.



Table B: Landforms and corresponding land classes

Land Form	Land Class
Flats or low slope, areas with alluvial soil	1 – 2
Undulating low to middle slopes	3
Middle to upper slopes	4
Steep upper slopes	5

Example

Step 1: Summary of site characteristics

Land management unit	A
Land class	1
Area (in hectares)	10–50
Surface water drainage	Run-on
Soil drainage	Poor
Aspect	0–E
Landform	Flat to lower slope
Soil depth	Moderate–deep
Fire history	Two years (part)
Current management	Graze
Current land use	Reserve

A management unit is an area that is internally similar in terms of vegetation, land class and past management. A unit represents an area in which management of a particular kind will be uniformly applied. A unit may comprise, for example, a paddock, a clump of vegetation within a paddock or several paddocks. If a site is small the whole site may be managed as one unit.