Step 12

Monitor vegetation composition and abundance

Monitoring can be used to show changes in cover, occurrence and relative abundance of native and introduced species over time.

Changes in vegetation abundance can be measured using permanently marked transects to show whether the abundance of species or groups of species is increasing or decreasing as a result of management or other factors.

This method is used to measure whether there is a change over time in the number of native species, introduced species or vegetation cover in a management unit. It can also be used to show whether management activities are maintaining ground cover.

The method described allows individual species to be identified and recorded separately or as a group of species, according to their origin and growth form.

Aim

- To assess the change in the relative abundance of native and introduced plants in land management units.

Marking transects

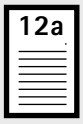
Ensure that transects are easy to find again by marking the beginning and end of each transect permanently. Do this with star pickets, or use trees or fence posts as the points to walk between. It is also useful to bury a piece of metal at the base of the points and use a metal detector to find them if the pickets are removed or destroyed.

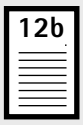
Materials

Sheet 12a and 12b

Map

Overlay 4





Example

Step 12: Vegetation composition monitoring

Object(s) of monitoring: To record any change in vegetation composition

Details of monitoring (*how it is being done and how often*): At two locations, record the tally of the plants or groups of plants identified at each monitoring location each year in spring. Photos are taken from marked star pickets.

Location (*including management units, direction, height, reference points*): See monitoring map (Overlay 4) V1: Unit B; V2: Unit F in Button Wrinklewort patch.

Management: Unit B: rotationally grazed; Unit F not grazed since 1998.

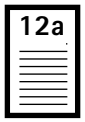
Monitoring date	11/12/97	21/12/98	31/12/99	4/12/00
Photo no	97–15	98–04	99–13	00–11
Moss/lichen % frequency	0	1	2	2
Bare ground % frequency	12	10	5	4
Litter % frequency	5	5	30	35
Native trees % frequency	0	0	0	0
Introduced trees % frequency	0	0	0	0
Native shrubs % frequency	0	0	0	0
Introduced shrubs % frequency	0	0	0	0
Native grasses % frequency	38	26	30	28
Native wildflowers % frequency	17	6	14	12
Annual grass weeds % frequency	20	12	4	9
Perennial grass weeds % frequency	5	5	3	3
Other introduced species % frequency	17	37	13	12
Total native species	9	9	10	9
Total introduced species	7	7	7	8

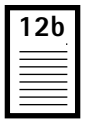
Notes: St Johns Wort in 2000. Assess level of invasion and control as required. Monitoring undertaken later in year in 1999, 2000, most of litter in 1999, 2000 comprises annual introduced species that have died back.

Method

1. **Select management units that will be monitored** for changes in vegetation species.
2. **Mark the location of the monitoring sites** on Overlay 4. Describe the location and methods on Sheet 12b.
3. **Monitor the presence of plant species and their abundance in each management unit.** For each management unit being monitored, use transects and repeat the procedure outlined in Step 3 (see 'Method for assessing the abundance of plant species', pg 13), as follows:
   - **Identify groups of introduced and native species**: record each species as native or introduced, a grass, wildflower, shrub or tree. It is not necessary to identify the name of the species on Sheet 12a; or
   - **Identify all species**: record the species names and write them down as a tally on Sheet 12a. A field guide will help with identification. The reference section lists some of the many native and introduced plant species that occur in grassy ecosystems in south–eastern Australia.

     In each management unit record the number of times each plant species (or native and introduced group) is 'hit' in the 100 step transect. More than one species may be 'hit' at each step. Record the number of 'hits' for rocks, bare ground, litter and lichen
4. **Collate the survey results** on Sheet 12b.
   - Total the number of 'hits' (total score) for each plant species or group in each management unit.
   - Record the growth form of the species as grass, wildflower, shrub or tree.
   - Record the abundance of each species as common, occasional or uncommon according to the total score.
5. **Identify the dominant or co–dominant plant species** in the tree layer and the ground layer in each management unit. Record the dominant species with a 'D'.
6. **Classify the species recorded as introduced or native** using personal knowledge or a field guide.
7. **Estimate the relative species richness of native and introduced species** as well as groups of native and introduced species. Then add the number of native and introduced species for each growth form and record the totals
8. **Repeat this procedure at each monitoring site** at regular intervals and at the same time each year.
9. **Record the changes in the condition of the vegetation.** Make notes about management or other relevant information.
10. **Take a photo** to help assess changes in the vegetation.
11. **Compare the results over time.** Take into account management changes that have taken place but remember that seasonal conditions may also account for some changes.





Luzula densiflora