



METHOD FOR RANGELAND CONDITION MONITORING: GRASSLAND

The Pastoral Lands Board (PLB) is adopting a system of Rangeland Condition Monitoring (RCM) based upon permanent photographic monitoring sites. RCM is replacing the current system of periodic Range Condition Assessments conducted by the Department of Agriculture and Food WA (DAFWA).

Rangeland Type

In the **northern rangelands**, livestock productivity and ecological health are driven mainly by the cover and composition of the perennial grass component of pastures. This means that RCM in the northern rangelands will employ the '**grassland**' monitoring method. (The southern rangelands will use the 'shrubland' monitoring method.)

A number of pastoral leases are situated in the transition between shrub based and grass based rangeland. On these leases the composition of the rangeland at each site will determine which monitoring method to use. It is likely some leases in this transition zone will require both shrub and grass monitoring sites.

Frequency and Timing of Assessment

Following initial installation, assessment of monitoring sites will take place on a **rolling three year** interval. This means that every year a lessee should assess **one third** of the sites on a lease.

Assessment of monitoring sites should take place at the end of the normal growing season. In the majority of the northern rangelands this will be during the early dry season (May to June).

Numbers of Monitoring Sites per Lease

The number of monitoring sites on each lease is calculated according to a formula that has compensated for:

- lease area, and
- rangeland productivity.

Therefore, larger pastoral leases and/or those comprised of higher productivity rangeland require more monitoring sites. The minimum number for a lease is 9.

The final number of sites per lease is divisible by of 3 (i.e. 15, 24, 30, etc) so that the same number of sites are re-assessed every year.

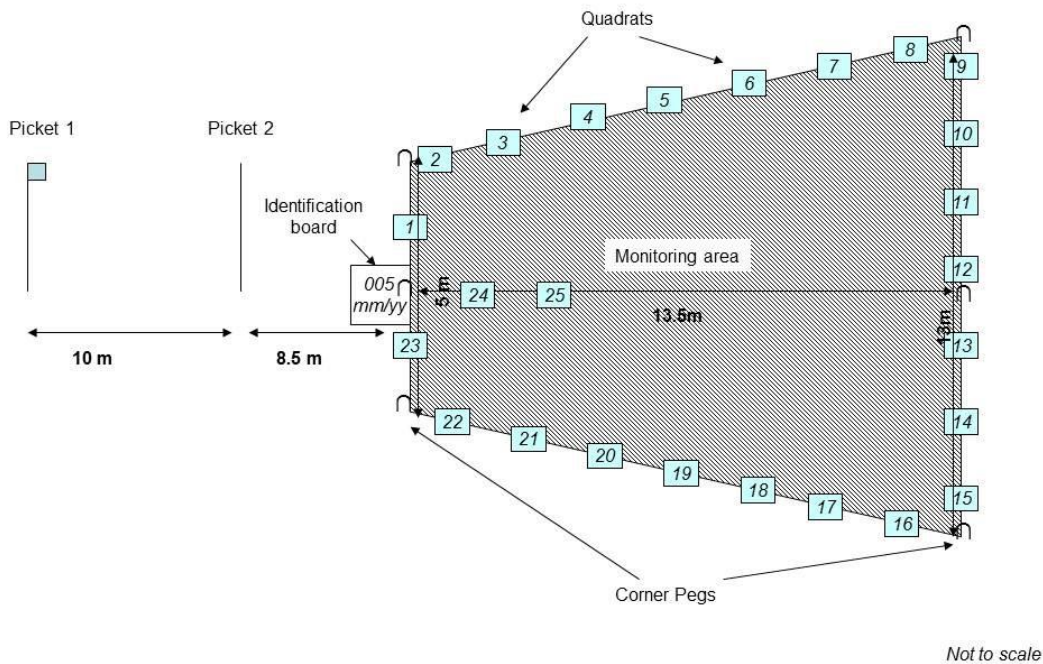
The majority of pastoral leases require between 15 – 30 monitoring sites.



The Grassland Monitoring Method

Monitoring grass based rangeland for RCM requires the installation of permanent monitoring sites according to the layout in figure 1.

Figure 1: Grassland Monitoring Site Layout



As illustrated in figure 1, the grassland monitoring site layout is based upon the existing Photographic Monitoring Sites (PMS) already installed on many leases. PMS sites may be used as RCM sites.

The location chosen for a grassland monitoring site should be:

- within the grazing radius from water (1.5 - 3.5km),
- preferred by livestock, and
- in 'fair' condition (has the capacity to improve or decline).

Ideally, the site should contain 4 perennial grass species important to the pasture type, of which 2 are 'desirable' species and 2 are 'undesirable' species, however it is recognised that this combination of species may not always be present. There may be situations where only one desirable plant species can be identified in your site or situations where the monitoring of 'intermediate' perennial grass species may be the only appropriate option. You are responsible for choosing sites that best represent the range condition over your lease. If more plant species develop at a later stage you will be able to add them to your list for that site.



To assess the monitoring site the **frequency rating** method should be used. This involves the following steps:

1. Starting from the identification board, place a **measuring tape** clockwise around the perimeter and then up the centre of the site;
2. Place a **quadrat** (as supplied at the RCM workshops) at the 1 metre mark and record the presence of each of the four indicator grass species in the quadrat;
3. Move the quadrat 2 metres further along the measuring tape (to the 3 metre mark) and record the presence of each of the four indicator grass species in the quadrat;
4. Move the quadrat a further 2 metres along the measuring tape (to the 5 metre mark) and record the presence of each of the four indicator grass species in the quadrat;
5. Repeat at 2 metre intervals for all 25 points in the monitoring site (as in figure 1).
6. Note the occurrence of woody species (trees and shrubs more than 1m in height)
7. Make an assessment of the soil condition as defined on the assessment sheet.
8. Take a photograph of the site making sure the site (from the identification board to the rear) fully fills the frame. It is recommended that these photos are taken with a digital camera as the photo-files can easily be saved onto the provided USB drive for submission to the PLB. Photos need to be taken from the 2nd star picket, 8.5 m from the front of the monitoring area. Adjust the camera zoom so that the site perimeter is just inside the photograph and, if possible, keep a small amount of sky in the top of the image. Please refer to Figure 2. It is important that when reassessing sites in future, photographs are always taken from this same position to ensure clear comparisons in rangeland conditions can be made.

At each re-assessment of a site (i.e. every three years) the same process should be used to record the occurrence of the same 4 species. The site should be re-photographed and an assessment made of soil stability and the occurrence of woody weeds. Based on this data an assessment of the **range condition trend** should be made by the lessee (i.e. assess whether the site has **improved, remained stable, or declined** since the last assessment). You will use **all three** factors to make a judgement on the condition trend. All this information should be forwarded to the PLB.



Figure 2: Photograph of a RCM site taken from second star picket and clearly showing the whole site.

Queries about the installation of RCM sites can be directed to Land Management Remote, at the Department of Planning, Lands and Heritage via email at pastoralapprovals@dplh.wa.gov.au.