



Biodiversity
Conservation
Trust



Biodiversity Conservation Trust Management tools



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What is healthy condition vegetation?

Native vegetation provides essential habitat for plant and animal species, and is a key component of healthy, functioning ecosystems. The condition of native vegetation is an indicator of broader ecosystem health and diversity. *Healthy condition* refers to native vegetation that is close to its natural state – that is – relatively undisturbed.

The condition of native vegetation can be modified by the effects of land management practices (including grazing pressure) and unplanned threats such as weed invasion, drought and fire. These threats impact the structure and ecological function of native vegetation, lower the rates of regeneration and can increase vulnerability to disease, pests and weed invasion.

The condition of the native vegetation in your conservation area is a measurement of **two key factors**: ground cover (measured as a percentage) and average bulk sward height of dominant native grass species.

The BCT's *Grazing Guidelines* (available on the BCT website), list the *healthy condition thresholds*, or limits, for both these factors (see figures on the following card). Thresholds are based on regional average annual rainfall, the dominant species present and factor in the climatic conditions at the time.

Use the BCT's *Assessing healthy condition* instructions, *Ground cover quadrat* and *Sward height ruler* in line with the *healthy condition thresholds*, to determine the condition of the native vegetation in your conservation area.

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IBRA Region	Agro-climatic Description	Rainfall (mm) ³	Healthy Condition Threshold (% ground cover)
Australian Alps	Cold winters, summers short	1025	80
Brigalow Belt South	Winters mild, even growth throughout year	644	80
Broken Hill Complex	Semi-arid, moisture highest in winter	206	50-60
Channel Country	Desert, water limited	175	50-60
Cobar Penepplain	Semi-arid, moisture highest in winter	379	50-70
Darling Riverine Plains	Semi-arid, moisture highest in winter	379	50-60
Mulga Lands	Semi-arid, moisture highest in winter	297	50-60
Murray Darling Depression	Semi-arid, moisture highest in winter	254	50-60
Nandewar	Summer moisture limiting, winters cool	721	80
New England Tablelands	Max moisture availability winter-spring	824	80
NSW North Coast	Warm and wet	1104	80
NSW South Western Slopes	Summer moisture limiting, winters cool	595	80
Riverina	Dry cool winters	327	70-80
Simpson Strzelecki Dunefields	Desert, water limited	149	50-60
South East Corner	Temperate wet	807	80
South Eastern Highlands	Max moisture availability winter-spring	682	80
South Eastern Queensland	Warm and wet	1297	80
Sydney Basin	Temperate wet	881	80

% Ground cover - includes living vegetation, dry litter, coarse woody debris (logs), mosses and lichens, excluding exposed bare ground surface rock

*where a range is specified, use rainfall gradient to determine appropriate threshold



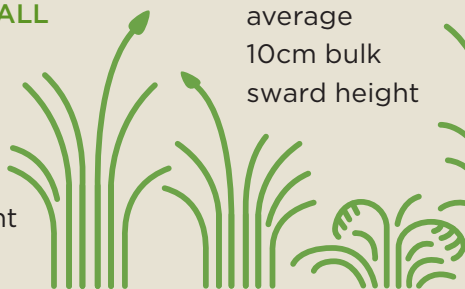
Native grass sward height thresholds

Select up to three dominant grass species, determine whether they are short, medium or tall tussock grass and maintain the height of the corresponding threshold.

Note: one paddock may have more than one threshold.

SHORT/SMALL GRASSES

Maintain
average
5cm bulk
sward height



SHORT GRASSES

average height <0.6m
(e.g. *Microleana stipoides*
Poa meionectes,
Rytidosperma carphoides)

MEDIUM GRASSES

Maintain
average
10cm bulk
sward height



MEDIUM TUSsocks

average height >0.6m & <1.2m
(e.g. *Themeda triandra*,
Austrostipa scabra, *Poa*
sieberiana, *Rytidosperma*
longifolium)



TALL/LARGE GRASSES

Maintain
average
20cm bulk
sward height

TALL TUSsocks

average height >1.2m
(e.g. *Themeda avenacea*,
Austrostipa aristiglumis,
Poa labillardierei, *Sorghum*
leiocladum)



Measuring healthy condition

The condition of native grassy vegetation in your conservation area is determined by measuring the percentage of ground cover and average sward height of dominant native grass species.

The steps for how to measure ground cover are explained on the back of this card. For instructions on how to measure average sward height, see the BCT's *Sward height ruler*.

Ground cover is the amount of plant material (dead or alive) that covers the soil surface. It is expressed as a percentage, and includes living plants (native and exotic), dry litter, coarse woody debris (logs), mosses and lichens. It does not include bare ground surface and rock.

The best way to measure ground cover is by using a quadrat - a frame (in this case 1m x 1m square) that is laid down to mark out a specific area or 'patch' of land to be sampled.

Whatever plant material that falls within the quadrat frame is counted towards the measure of cover.

When placing your quadrat, it is important that you choose a section that is representative of the Management Zone (as part of the conservation area identified in your agreement), as levels of ground cover can change quite dramatically across an area.



Steps for measuring ground cover

- 1.** Place a 1m x 1m quadrat at a random location in the Management Zone.
- 2.** Look vertically at the area within the quadrat and estimate the percentage of the area that is covered by plants and other materials. A good way to do this is to imagine the quadrat is divided into quarters, then judge whether or not all the material would occupy one-quarter, one-half, or three-quarters of the quadrat, or somewhere in between.
- 3.** Repeat step 2 at least 5 times across the Management Zone and calculate the average result to provide an overall ground cover percentage for that Zone.

Use the images provided to help you assess ground cover percentages within your conservation area.



20% ground cover



50% ground cover



70% ground cover



90% ground cover



Who's grazing the paddock?

The grazing pressure of all grazing animals (domestic, native and feral) on vegetation, soil and water resources is managed to maintain ground cover in *healthy condition*.

The grazing pressure of non-domestic animals such as kangaroos, rabbits and feral goats can sometimes overtake that of livestock. See the BCT's *Managing Overabundant Kangaroo guidelines* (available on the BCT website) to help identify 'problematic' levels of non-domestic grazing.

One way to monitor the grazing pressure of these species is to observe the dung they leave behind. Though this concept may seem simple, by identifying the type and amount of dung, the relative grazing pressure of animals in your conservation area may be estimated. For those with less experience, recognising the differences between types of dung is relatively easy with a bit of practice.

Use the images on the back of this card to help you monitor who is grazing in your paddock.



Cattle: very distinctive; large brown flat 'cake' or several smaller layered pats.

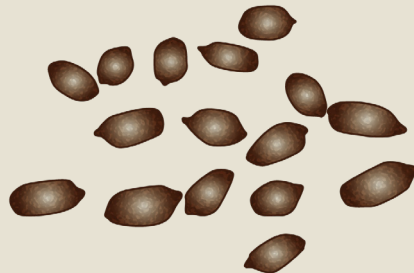
Sheep and goats: rounded, oval or cylindrical pellets produced in clumps. Usually dark brown to black when fresh.

Ends of pellets are dimpled, or both ends may be rounded.



Sheep

Goat



Ends of pellets are pointed, or pellets are cylindrical.

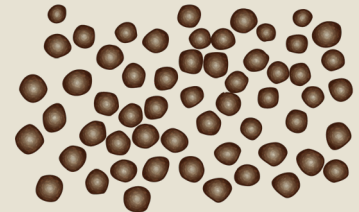
Kangaroo



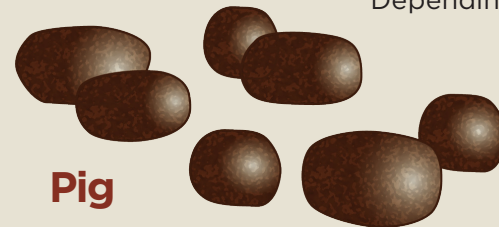
Pellets are oval, round or square, with a shiny black to dark brown coating when fresh.

Rabbit

Round, slightly flattened and light to dark brown when dry. Generally less than 1cm in width.



Pig



Depending on their diet; cylindrical flat round 'cakes'.



Setting up photo points

Photo points are a simple way of monitoring changes in vegetation, including targeted weeds, that grow significantly above ground level. Photos should be taken before and after the grazing of Management Zones (within the conservation area identified in your agreement) and submitted as part of your annual report.

The location of your photo points will generally be decided in consultation with the BCT to ensure they meet the BCTs monitoring requirements. It is important chosen sites are representative of the whole Management Zone and contain the variety of conditions that occur at that location.

The area should be:

- easy to find in the future
- accessible by motor vehicle
- at least **100m** from fence lines, major tracks and waterways and **1-2km** from a watering point.

Once you have the location of the photo point,

mark out a **20m** line with a small post at each end (using a length of rope will make this easier). Halfway along this line (at **10m**), drive in a large marker post (approx. **1.5m** tall). From this marker post, mark out another line that measures **50m**, with a small post at the end. This line should run perpendicular to the **20m** line.

After setting up your lines, return to the marker post at the start of the **50m** line and step back **3m**, so you are facing down the **50m** line and the whole post is in view. Frame your scene in the camera (or phone) viewfinder so that the bottom of the frame aligns with the **20m** line and the marker post is in the centre.

Repeat these steps at the end of the **50m** line, aiming the camera back up the length of the line towards the marker post - making sure to stand back **3m** from the **50m** point.

See the diagram on the back of this card for reference.



Try to avoid east-west or west-east photo points. Photos taken in these directions are limited to the time of day, due to the glare factor, whereas you can take photos at most times of the day when photo points are in a north-south or south-north direction.

Tip: Lean the photo board provided by BCT against the post every time you take a photo to record the date and Management Zone ID.

