



BLANKET BOG



(below) signs of high impact: bare soil with deer hoof prints and (below right) signs of low impact: presence of flowering bog cotton



Aim

The aim of this guide is to describe methods of assessing Blanket Bog habitat relevant to deer managers.*

Habitat description

Blanket bogs are a vegetative 'skin' of mosses, cotton grass and dwarf shrub species over a layer of peat, usually more than 50 cm deep (see species list overleaf). They occur in areas of heavy rainfall where

drainage is poor. The surface of blanket bogs can have hummocks, ridges, moss lawns, wet hollows and pools.

Key indicators

The main impacts that deer have on blanket bog are trampling and browsing.¹ Trampling, by breaking through the vegetative skin, may lead to areas of exposed bare peat and subsequently erosion. Once exposed, the area of bare peat can increase with time and the bare peat can erode away. At the same time other areas may be naturally re-vegetating. Direct deer trampling is assessed by the presence of bare soil with deer hoof prints visible. Browsing is

measured by looking at the percentage of heather 'long shoots' browsed. This indicates the 'off-take' on the heather. If unpalatable species such as cross-leaved heath show signs of browsing this indicates heavy impact.

Other impacts

Care needs to be taken to distinguish between what originally caused the breaking of the vegetative skin and what is preventing re-vegetation. Climatic effects particularly 'drying out' may also cause erosion. Other impacts include:

- ◆ Burning
- ◆ Other herbivores – particularly sheep.

Bog moss

Colours vary with species. Forms large cushions or clumps

Cotton-grass (1)

Tussock forming perennial. Height 30-60cm. Leaves up to 1mm wide

Cotton-grass (2)

Tussock forming perennial. Height 30-60cm. Leaves up to 1mm wide

Deer Grass

Densely tufted perennial. Height 5-35cm. Spikelet 3-6mm

Cowberry

Evergreen shrub. Height to 30cm. Leaves 1-3cm

Bearberry

Evergreen shrub with long rooting branches often forming mats. Leaves 1-2cm



For information on the number and size of plots and what time of year to measure, see BPG Habitat Impact Assessment: Principles in Practice.

What to measure	How to analyse
For trampling, record whether bare soil with a deer hoof print is present or not in each of the 16 quadrats.	For each plot, summarise the frequency** of quadrats with presence or absence of deer hoof prints in bare soil (for example: 5/16 quadrats, hoof prints PRESENT; 11/16 quadrats, hoof prints ABSENT). For each site, summarise the frequency of quadrats with deer hoof prints present or absent (for example, in a site with 10 plots (a total of 10 x 16 quadrats): 60/160 quadrats, hoof prints PRESENT; 100/160 quadrats, hoof prints ABSENT).
For browsing look at three or four handfuls of heather within each of quadrats 1, 4, 10, 13 and 16 as shown in the diagram in BPG Habitat Impact Assessment: Principles in Practice. If none of the heather species are present then use cowberry. Look at the browsing on the long shoots and classify as: • LIGHT: less than 33% of long shoots in the sample browsed; • MODERATE: 33 – 66% long shoots browsed; • HEAVY: greater than 66% long shoots browsed.	For each plot, summarise the frequency of quadrats in each class (for example: 3/5 quadrats LIGHT; 2/5 quadrats MODERATE; 0/5 quadrats HEAVY browsing). In this example, the plot would be described as having LIGHT browsing as this was the class with the highest frequency. For each site, summarise the frequency of plots in each class (for example, in a site with 30 plots: 25/30 plots LIGHT; 3/30 plots MODERATE; 2/30 plots HEAVY browsing).
For bog mosses, record their presence or absence within each of the 16 quadrats.	For each plot, summarise the frequency of quadrats with presence or absence of bog mosses (for example: 7/16 quadrats, bog mosses PRESENT; 9/16 quadrats, bog mosses ABSENT). For each site, summarise the frequency of quadrats with bog mosses present or absent (for example, in a site with 10 plots (a total of 10 x 16 quadrats): 60/160 quadrats, bog mosses PRESENT; 100/160 quadrats, bog mosses ABSENT).
For vegetation height take four measurements with a tape measure within each of quadrats 1, 4, 10, 13 and 16.	For each plot average the height of the vegetation. Average the vegetation height for all plots.
Record presence of deer or hare dung in each plot.	For each site, summarise the frequency of quadrats with deer dung present or absent. For example, in a site with 10 plots: 80/160 quadrats, deer, dung PRESENT; 80/160 quadrats, deer dung ABSENT. Repeat exercise for hare dung.
Take digital photo of whole plot from fixed point.	Will enable detection of changes in erosion or re-vegetation over time.

Browsing of unpalatable species such as cross-leaved heath indicates heavy impact.
Cross-leaved heath



Blanket Bog species:

- Cowberry/ *Vaccinium vitis-idaea*
- Cotton-grass/ *Eriophorum vaginatum*
- Cotton-grass/ *Eriophorum angustifolium*
- Crow berry/ *Empetrum nigrum*
- Bog moss/ *Sphagnum* species
- Bear berry/ *Arctostaphylos uva-ursi*
- Deer grass/*Trichophorum cespitosum*
- Cross-leaved heath/ *Erica tetralix*
- Ling heather / *Calluna vulgaris*
- Bell heather/*Erica cinerea*

* The guides *Habitat Impact Assessment: Principles and Habitat Impact Assessment: Principles in Practice* should be regarded as essential introductions to this subject
** See BPG *Habitat Impact Assessment: Analysis*

† *Guide to Upland Habitats, Surveying Land Management Impacts*. Angus Macdonald, Penny Stevens, Helen Armstrong, Philip Immirzi and P Reynolds. 384 pages, 2 volume set, 50 col photos. Scottish Natural Heritage. See BP Contacts