

3.3 Diversifying Mat-grass (*Nardus*) Moorland

The starting point

If you have extensive areas where mat grass dominates and you would like to reduce its abundance – this fact sheet helps you.

Mat grass¹ dominated grassland often includes

- fine leaved grasses such as fescues and common bent
- bilberry, and possibly other dwarf shrubs
- herbaceous species such as tormentil and heath bedstraw

What are the Objectives?

These will depend on the existing vegetation and the composition of the soil seedbank (*see vegetation overview sheet for how to conduct a seed bank test*).

If

- bilberry is present, bilberry heath might be a goal
- heather or other dwarf shrubs are absent but desired, then this is possible, but more complex
- a range of acid grassland species is present, there is potential to diversify the vegetation by reducing mat-grass and increasing the remaining species
- mat-grass-dominated grassland with few other species except possible heath rush will have less potential, or require more positive intervention and take longer to restore

Options for Grazing Management

Use this method where the desirable species are present but suppressed, or in small populations.

The aim is

- to reduce mat grass tussock size and encourage regeneration and spread of other plant species

Action

Remove stock entirely or reduce grazing 1 ewe per ha. Cattle ingest more *Nardus* than sheep and can reduce its abundance and vigour.

¹ Scientific names are on the Overview sheet

Changes in species composition will be slow. Mat grass tends to decline and other species increase such as wavy-hair grass, heather, bilberry will grow in stature. Mat grass is only grazed when new shoots are available and alternatives in short supply in late winter and early spring. See Fact sheets on grazing regimes (2 to 2.3) & dwarf shrubs (3.1).

Grazing, Scarification and Seed Addition

Use this technique if you need to add new species such as heather.

The aim is;

- to increase species such as dwarf shrubs
- to do this, colonisation gaps are essential – these are small spots only a few centimetres across that allow the establishment of seed

Action

Restoration needs to create about 10-15% bare ground in the existing vegetation to avoid erosion problems and to retain the desirable species present. The methods adopted should:

- remove accumulated litter
- reduce the tussocks, and
- expose any desirable seed bank (see Fact sheet 3)

The methods available depend on access, soil type and the need to avoid damaging it. The methods adopted in the project were:

- A 2 metre Howard tractor mounted rotavater with 6 rows of 10 tines each 1 inch in diameter and 8 inches in length fitted onto a Case tractor. The tractor working in 3rd low gear and 1600 rpm; giving a ground speed of between 0.9 and 1.1 metres per second depending on the plot aspect. The rotavater should be adjusted so that the tines dig into the ground about 2-3 inches. This results in several fairly large areas of exposed peat and small areas left unaffected. Double wheels should be fitted, or a low ground pressure machine used for the rotavater to avoid damaging soft ground
- Trampling using cattle – these can be carried to the site, herded or walked using a 'walker bar' behind a tractor, depending on the numbers and distances involved, and access arrangements. As a guide, in the experimental plots, 5 heifers adequately created bare gaps in a 10m² plot in 25-45mins by being walked round it. However, the cattle tired after undertaking 3 plots, so using this method of trampling on a large scale will require the stock to be left on the site to graze it rather than focusing on trampling only

Other methods of disturbance available and used in other projects include:

- Mowing
- Impact of disturbance on rest of plant community
- interaction of disturbance and grazing regimes

Other Options and Information Sources

- Feed blocks can be used to attract stock into *Nardus*-dominated areas, which can increase grazing pressure on *Nardus* in the immediate vicinity, especially in spring. Use of feed blocks is dependent on good access and carries a risk of locally increasing nutrients
- Shepherding or temporary fencing can be used to guide stock onto *Nardus*-dominated areas in spring and so increase its utilisation
- *Nardus* grassland should not be burnt as *Nardus* is likely to increase. *Nardus* – *Calluna* mosaics should not be burnt especially if *Calluna* is mature or degenerate

See also:

[English Nature Upland Management Handbook: Chapter 6. Moorland](#)

[Heather & grass burning code for England and Wales](#)

[Defra funded ADAS Technical Guideline: No. 2. Controlling *Molinia* and other competitive grasses](#)

[Defra funded ADAS project report on use of feed blocks on *Nardus* grassland](#)

A Project funded by Defra, English Nature and Countryside Council for Wales undertaken by ADAS, CEH, IGER, RSPB, Scottish Agricultural Colleges, University of Newcastle and Penny Anderson Associates Ltd.