



Creating Magnesian Limestone Grasslands.

The Role of Created Magnesian Limestone Grasslands



Dark Red Helleborine & magnesian limestone grassland.
(Photo John Hope)

The creation of new magnesian limestone grasslands should never be considered as a substitute for the *in situ* conservation of existing magnesian limestone grassland sites¹. Once an established magnesian limestone grassland has been destroyed its unique and diverse assemblages of flora and fauna could never be re-created¹.

However, created magnesian limestone grasslands have several important roles in protecting our remaining magnesian limestone grasslands by:

- Connecting existing grassland sites that are currently isolated¹.

Providing corridors for species migration between existing magnesian limestone grassland sites.

- Extending the area of existing magnesian limestone grassland sites, thus increasing the range for flora and fauna and aiding the practical management of the sites¹.
- Creating completely new areas of grassland on Magnesian Limestone outcrops where currently no magnesian limestone grassland exists.
- Buffering existing grasslands from disturbance and pollution¹.
- Aiding biodiversity targets for magnesian limestone grassland and the species associated with this habitat¹.
- Providing accessible green spaces and an educational resource for local communities helping raise the profile of magnesian limestone grassland in Durham and Tyne & Wear¹.

Magnesian limestone grassland is not an easy habitat to create; it requires careful planning and long-term management and funding commitments.

Points to Consider

When planning to create a magnesian limestone grassland consider the following:

- Why magnesian limestone grassland is being created and to what end purpose it will serve¹.
- It is important to establish the cost and resource implications of creating a magnesian limestone grassland such as¹:
 - Design and methodology
 - Seed sources and costs
 - Equipment
 - Long-term management and who will take responsibility
- Site ownership
- Access needed to create and manage the site¹
- What funding is available for creation and long-term management
- What revenue could the site generate – i.e. sale of topsoil & turf, grazing leases, hay and wildflower seed¹
- Requirements for livestock if the site is to be grazed
- Labour and maintenance costs
- The time scale for establishing the grassland
- Where the site is located especially in relation to existing magnesian limestone grassland sites or other semi-natural habitats.
- The availability of suitable seed.

(This list is not exhaustive)

Created magnesian limestone grassland must be sustainable in the long-term otherwise the creation will be a waste of precious seed resources.

Magnesian limestone grasslands do not establish overnight; it can take anywhere between 5 – 50 years before created grasslands begin to resemble long established grasslands depending upon the methods of creation and local site conditions.

Remember; think resources and long-term sustainability.

Creation Options for Magnesian Limestone Grassland

There are three main creation options available¹:

- **Natural Colonisation**
- **Introduction of Seed**
- **Enhancement and Diversification of Existing Grassland**

Natural Colonisation

This option should only be considered for magnesian limestone grassland if the site for creation is situated adjacent to an existing established magnesian limestone grassland site¹. Natural colonisation relies upon plants and animals being able to disperse to an area with appropriate conditions to meet their needs¹. This option will be inappropriate for most creation situations, as existing magnesian limestone grassland sites are isolated and too far away for magnesian limestone grassland species to naturally colonise new sites.

Remember that the natural colonisation process can be supplemented by over-sowing with seed or hay to add additional species or increase the rate of sward establishment².

Consider Natural Colonisation When:

- Long-term commitment to the site is available.
- If establishing vegetation cover in a short time scale is not necessary².
- The area is adjacent to an existing established magnesian limestone grassland site².
- Importing seed to the site could effect an existing established magnesian limestone grassland².
- The site has low soil nutrient status².
- The site has no previous history of or is not close to land with a pernicious weed infestation².
- If the soil seed bank contains species that are typical of magnesian limestone grasslands².

Information & Advice

- Rural Development Service. 2003. Rural Development Service Technical Advice Note 21. Arable reversion to species rich grassland: site selection and choice of methods. Defra, Rural Development Service
- Crofts, A. & Jefferson R. G. 1999. The Lowland Grassland Management Handbook. 2nd edition. English Nature/The Wildlife Trusts. Pp11:1 – 11:20.

Introduction of Seed

This option covers the majority of creation situations and should be used when surveys have shown that little or no conservation interest exists at the creation site¹. Sites where magnesian limestone grassland seed could be introduced include¹:

- Ex-arable land

- Newly created road verges
- Ex-mineral workings
- Derelict land
- Species-poor grassland
- Newly exposed Magnesian Limestone outcrops.

Consider Introduction of Seed When:

- There is long-term commitment to the site.
- The site is not suitable for natural colonisation.
- The site is on an area where Magnesian Limestone is close to the surface.
- The time, funding, resources and commitment are available.
- Surveys have shown that little or no conservation interest exists at the site.
- If the site has a history of pernicious weeds (e.g. Creeping Thistle and Broad-leaved Dock) and/or competitive species (e.g. Italian Ryegrass, False-oat Grass, Cocksfoot, Yorkshire Fog, Perennial Rye-grass, Creeping Buttercup and White Clover).
- If soil nutrient status is low and the pH is above 7, or if these conditions could be achieved.
- Suitable magnesian limestone grassland seed source is available.
- Works have exposed Magnesian Limestone.
- Funding is available from agri-environmental schemes or other sources

Information & Advice

Crofts, A. & Jefferson R. G. 1999. The Lowland Grassland Management Handbook. 2nd edition. English Nature/The Wildlife Trusts. Pp11:1 – 11:20.

- Flora locale. 2004. Bringing back the meadows. Creating wild flower meadows on improved agricultural grassland sites. Flora locale.
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- Rural Development Service. 2004. Rural Development Service Technical Advice Note 24. Arable reversion to species rich grassland: establishment of a sown sward. Defra, Rural Development Service.

Enhancement/Diversification of Semi-improved (Species-poor) Swards

This option should be used in situations where grassland has developed which contains a reasonable variety of fine leaved grasses but is relatively scarce in forbs³. Enhancement of existing grassland involves the introduction of other species to diversify the existing sward especially

wildflowers (forbs), this could apply to situations where:

- Funds are insufficient for works to prepare an appropriate seedbed for magnesian limestone grassland.
- Cover had to be established for amenity or erosion purposes.
- Grassland cover has been established under an agri-environmental scheme or set-aside.
- Species diversity is required to support invertebrates or other fauna.

Consider Enhancement/Diversification When:

- There is long-term commitment to the site.
- The site has low soil nutrient status, especially low soil phosphorus (index 0 or 1)⁴.
- There are few competitive species in the sward, if the grassland sward comprises of a high proportion of False Oat-grass (*Arrhenatherum elatius*), Cocksfoot (*Dactylis glomerata*), Yorkshire Fog (*Holcus lanatus*), Perennial Rye-grass (*Lolium perenne*), Creeping Buttercup (*Ranunculus repens*) and White Clover (*Trifolium repens*) then the site is unsuitable for enhancement⁴.
- There is not a pernicious weed problem, e.g. Creeping Thistle (*Cirsium arvense*) and Broad-leaved Dock (*Rumex obtusifolius*)⁴.
- Livestock are available; livestock can increase the chances of enhancement being successful by creating patches of bare ground and trampling in seed⁴.
- Funding is available from agri-

- environmental schemes or other funding sources.

Information & Advice

Crofts, A. & Jefferson R. G. 1999. The Lowland Grassland Management Handbook. 2nd edition. English Nature/The Wildlife Trusts. Pp10:1 – 10:13 & 11:1 – 11:20.

- Everett, S. 2004. Bringing Back the Meadows. Enhancing the flora diversity of semi-improved grassland. *Flora locale*.
- Rural Development Service. 2004. Rural Development Service Technical Advice Note 26. Sward enhancement: selection of suitable sites. Defra, Rural Development Service.
- Rural Development Service. 2004. Rural Development Service Technical Advice Note 27. Sward enhancement: choice of methods. Defra, Rural Development Service.

Rural Development Service. 2004. Rural Development Service Technical Advice Note 28. Sward enhancement: diversifying grassland by spreading species rich green hay. Defra, Rural Development Service.

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- Rural Development Service. 2004. Rural Development Service Technical Advice Note 30. Sward enhancement: diversifying grassland using pot grown wildflowers using pot grown wildflowers or seedling plugs. Defra, Rural Development Service.

References

- ¹ Crofts, A. & Jefferson R. G. 1999. The Lowland Grassland Management Handbook. 2nd edition. English Nature/The Wildlife Trusts. Pp11:1 – 11:20.
- ² Rural Development Service. 2003. Rural Development Service Technical Advice Note 21. Arable reversion to species rich grassland: site selection and choice of methods. Defra, Rural Development Service.
- ³ Everett, S. 2004. Bringing Back the Meadows. Enhancing the flora diversity of semi-improved grassland. *Flora locale*.
- ⁴ Rural Development Service. 2004. Rural Development Service Technical Advice Note 26. Sward enhancement: selection of suitable sites. Defra, Rural Development Service.



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