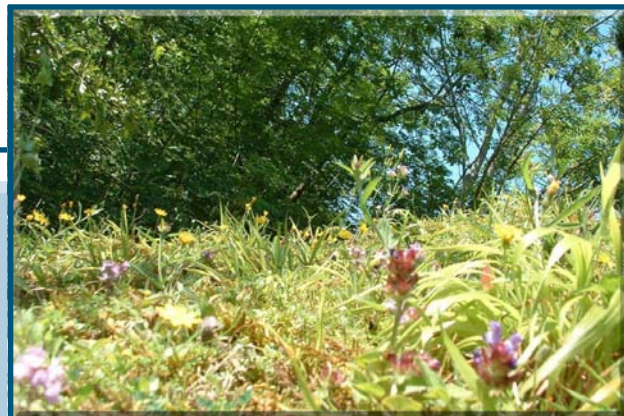


Magnesian Limestone Grassland

Our objectives for this habitat are:

to safeguard and manage the remaining remnants and enhance and extend it where opportunities allow through habitat restoration and creation; and

to establish sustainable populations of all priority species.



Limestone flora (E. Moss)

Introduction

This action plan refers to grassland which occurs over outcrops of Magnesian limestone laid down during the Permian period, around 225 million years ago. Biogeographically, the Magnesian limestone forms a link between the lowland chalks and limestones of the south and east (which occur as far north as the Yorkshire Wolds) and the upland carboniferous limestones of the north-west (which occur in the district at Greenhow). This means that a suite of plant species can be found which gives the Magnesian limestone a special character and value for nature conservation. Magnesian limestone grassland contains a unique assemblage of plant and invertebrate species, including over 13 nationally-scarce plants and 84 nationally-scarce invertebrates.

Limestones containing magnesium are classed as dolomite. Magnesian limestone has been quarried for many centuries and is an important mineral economically, with uses in agriculture, construction and other industries. Historically, as well as being used as a building stone, considerable amounts of dolomite were burned in kilns to create quicklime, which had many applications including the manufacture of cements, mortars, whitewash and bleaching powder. The production of these latter items declined during the early twentieth century when better and safer alternatives became available. Crushed dolomite is still used as a soil dressing in agriculture, mainly to neutralise acid soils. The major use today is as a bulk aggregate used as a sub-base in road making.

Soils underlain by Magnesian limestone are relatively fertile, and the slopes are generally fairly gentle so there is great pressure for agricultural improvement, either as pasture or as arable land. Consequently, only fairly small fragments of unimproved Magnesian limestone grassland remain. Sites on MOD training areas, which have reduced pressure for agricultural improvement, are important around the Ripon area. Disused quarries, where calcareous grasslands have developed are also important sites but their redevelopment, through infilling together with disturbance from bikes, fly tipping etc. has led to increased habitat fragmentation, with small sites being the most vulnerable to species loss.

National status

Magnesian limestone grassland is included within the Lowland Calcareous Grasslands national BAP priority habitat. Magnesian limestone is found in a narrow band between Nottingham and the coast of County Durham. There are approximately 180,600 hectares of land underlain by Magnesian limestone in the United Kingdom, divided into two distinct Natural Areas; the Durham Magnesian Limestone Natural Area, with 44,200 ha and the Southern Magnesian Limestone Natural Area with 136,400 ha. However, 90 per cent of this land is covered by drift deposits leaving only 13,640 ha on which vegetation influenced by the parent rock can develop, most of this is on steep slopes and supports woodland. Only 280 ha of Magnesian limestone grassland is designated as an SSSI.

Regional status

In the Yorkshire and Humberside region Magnesian limestone forms a narrow band, stretching approximately from Catterick in the north to Rotherham in the south. Although rare, it is the characteristic habitat of the Southern Magnesian Limestone Natural Area and is nationally important.

Local status

Sites in the Harrogate district include:

- Quarry Moor, near Ripon - SSSI and LNR.
- Burton Leonard Lime Quarries - SSSI and YWT reserve.
- Bishop Monkton Railway Cutting - SINC and YWT reserve.
- High Batts Nature Reserve - part of Ripon Parks SSSI and private nature reserve.
- MOD Ripon Parks - part SSSI and proposed SINC.
- MOD Ellington Banks - proposed SINC.
- National Trust (NT) Fountains Abbey and Studley Royal - SINC.
- Ripon Golf Course - proposed SINC.



Fountains Abbey (E Moss)

- Spofforth Cycle Track - owned by HBC, proposed SINC.
- Hell Wath near Ripon - Local Nature Reserve (and Masterman Crag in private ownership).
- Robert Beck Pasture SINC.

Several other sites within the natural area, although not supporting clear cut Magnesian limestone grassland have circum-neutral soils which display distinct calcareous influences in their flora.

Legal status

Magnesian limestone is listed in the EU Habitats Directive. Site protection includes sites that are SSSIs, SINC and LNRs.

Local priority species:

- **Dingy skipper** (2007 UK BAP priority species). The sharp national decline of this butterfly is keenly felt in the Harrogate district, where it was known from several sites in the 1980s, but now only occurs at one, Ellington Banks MOD. Significantly, this was by far the largest population and illustrates the particular vulnerability of small, isolated populations which are especially at risk of local extinction.
- **Squinancywort** - known in the district only from Burton Leonard Lime Quarry. Formerly known from several other sites (Lees, nineteenth century).
- **Rare Spring Sedge** - known in the district only from Burton Leonard Lime Quarry and Ripon Parks.
- **Autumn gentian** is a plant of short turf chalk and limestone grasslands occurring on thin soils.
- **Clustered bellflower** - thinly distributed but typical of the habitat.
- **Fingered sedge** is a rare plant of grassland and open woodlands on chalk and limestone recorded from Mackershaw and Ellington Banks.
- **Glow Worm** is a species of beetle, which like the Dingy skipper has only been recorded recently in the district at Ellington Banks MOD.

Other species associated with the Magnesian limestone grasslands in the area include plants such as yellow wort, thyme and pyramidal orchid and insects such as the burnet companion and double kidney moths and *Cantharis fusca*, a soldier beetle.



Yellow wort (E Moss)

Requirements

- Low intensity agriculture with no fertiliser or herbicide input or re-seeding.
- Grazing at appropriate levels and times of year, depending upon site-specific requirements either for maintenance or for restoration, where coarse grass species have established.
- Great care needs to be taken with grazing of Dingy skipper sites due to reduction in host plant (birds foot trefoil) or perhaps as a result of incidental predation on (larva/egg?) by grazing animals.
- At sites where grazing is impractical, mowing followed by removal of cuttings is essential.
- Scrub management, where appropriate.
- Some areas of bare ground are desirable, for invertebrates and those species, including especially bryophytes which require little or no nutrients other than those provided by the base rock.
- A mosaic of micro-habitat areas is generally desirable.

Threats

- Agricultural intensification, including input of fertilisers, pesticide/herbicide application, increased stocking densities and conversion to arable.
- Neglect or absence of conservation management leading to encroachment by coarse grasses or scrub including by tor grass or burnet rose.
- Precarious economic viability of obtaining the appropriate grazing regime for small, isolated sites.
- Small sites of less than SSSI quality may find it difficult to qualify for Higher Level Environmental Stewardship.

- Small sites are generally most vulnerable to habitat destruction and species loss due to fragmentation and isolation.
- Inappropriate restoration e.g. infilling of quarries and other workings where calcareous grasslands have developed after cessation of working.
- Disturbance, such as arson, tipping and digging berms for mountain bikes.

Current local action

- A number of sites are in the Higher Level Environmental Stewardship Scheme including some SSSIs and SINCs.
- A number of sites are managed sympathetically by organisations such as Yorkshire Wildlife Trust, Harrogate Borough Council Countryside Ranger Service, and National Trust and MOD (which has an active conservation advisory group).
- YWT, NYCC and HBC, in association with High Batts volunteers, have undertaken management of road verges between North Lees and North Stainley, near Ripon.

Opportunities

- There are options within the Environmental Stewardship Schemes for low or no input management of Calcareous grassland and for fencing etc.
- There may be the opportunity to create a significant amount of Magnesian limestone grassland through restoration schemes at mineral extraction sites such as Potgate Quarry.
- If it could be established, an east dales grazing scheme could potentially offer landowners a viable conservation grazing regime.
- Management of small sites is in a variety of hands including HBC, YWT, MOD and NT, as well as private owners.
- Landscape scale initiatives such as the Wildlife Trust's Lower Ure Living Landscape project may offer opportunities for the North Yorkshire Local Nature Partnership.

LINKS WITH OTHER HDBAP PLANS:

None.

