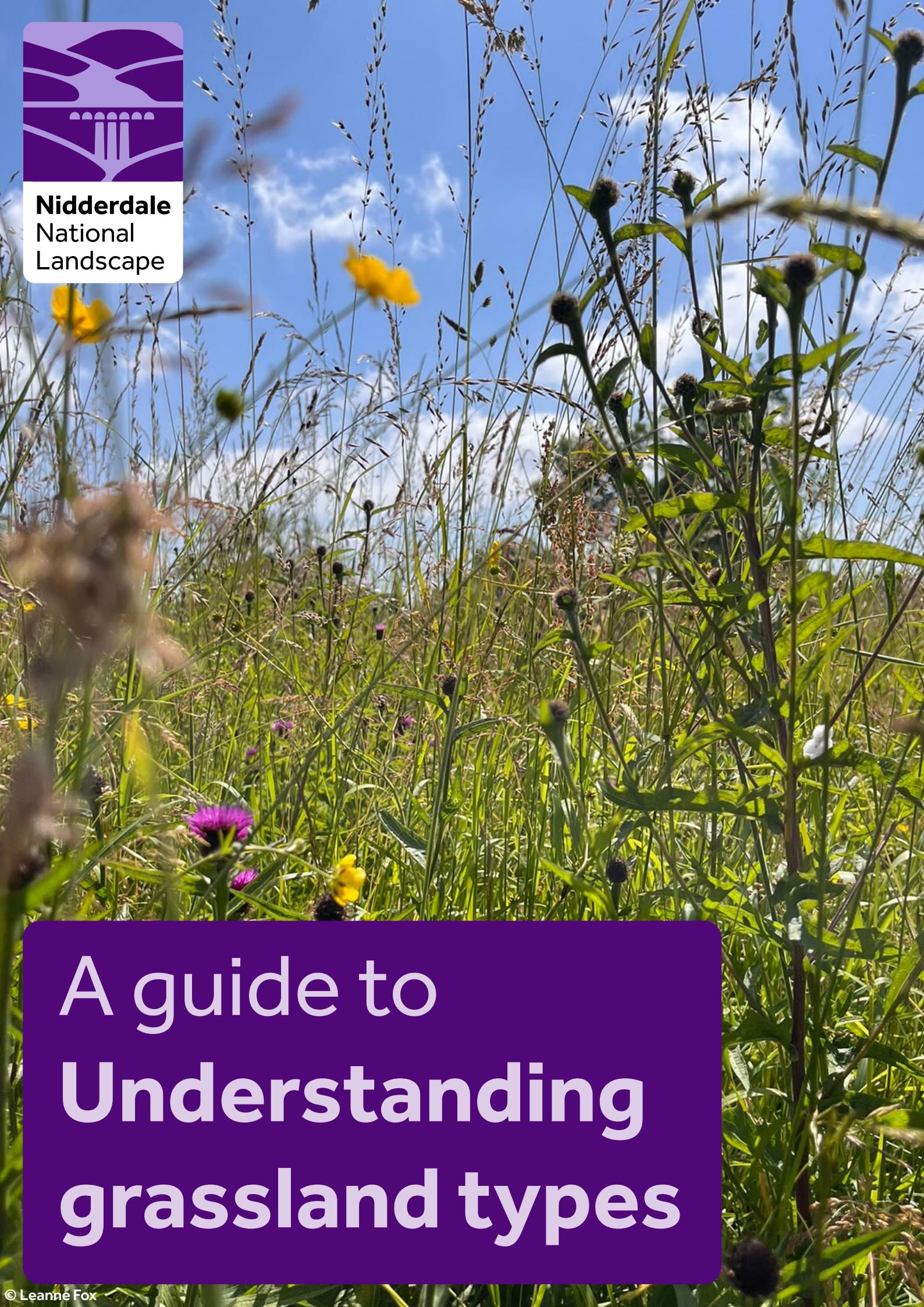




Nidderdale
National
Landscape

A guide to **Understanding** grassland types



Understanding what type of grassland you currently own/manage will help you identify the next steps in your grassland restoration journey. This document is here to help you do just that. Have a read through the text for each grassland type and see if the description matches the grassland you own or manage. Your grassland may not fall into one category, and that's ok, sometimes different grassland types can be found in the same field – a diversity of habitats is a good thing. Once you find a match, use the other grassland resource sheets on Nidderdale National Landscapes (NNL) website to find out how you can manage your grassland to benefit nature. If you don't want to go it alone, the NNL team is here to provide advice and help you along your journey.

Types of grassland

There are several different types of grassland found within Nidderdale, each with their own characteristics. Some are wet, others dry, and if managed correctly, they can all benefit nature.

Below is a list of grassland habitats found within NNL:

- **Lowland hay meadow**
- **Purple moor grass and rush pasture**
- **Lowland dry acid grassland**
- **Upland calcareous grassland**
- **Calaminarian grassland**
- **Semi-improved grassland**
- **Improved grassland**

Unimproved, semi-improved and improved grassland: what does it mean?

In this document each grassland type is described as either unimproved, semi-improved or improved. If a grassland is unimproved, it has never (or at least hasn't for a long time) been ploughed, re-seeded or had fertiliser applied. Semi-improved grasslands have been slightly modified by humans and improved grasslands have been heavily modified. The amount of improvement a grassland has received will change the potential for a grassland to be restored and made species rich. The more improved, the lower the potential as high nutrient levels, competitive grasses and compacted soils make restoration attempts less successful. See figure 1 below for a visual representation.

Grassland type descriptions

The next pages in this document will give descriptions of the different grassland types found in NNL. Each grassland type has a description, and pictures showing how it can look, however, your field may look slightly different to our example pictures.



Figure 1. Graph showing how level of agricultural improvement impacts potential for grassland restoration.



Lowland hay meadow (unimproved)

A hay meadow is a grassland that is mown once a year to produce hay to feed to livestock over the harsher winter months. In Nidderdale our poorly draining, neutral to acid, clay soils mean that most of our meadows are 'lowland meadows' (which are subtly different to the 'upland meadows' more commonly found on limestone soils in the neighbouring Yorkshire Dales National Park).

During the spring and summer months (**approximately April – August but there is slight variation depending on location and the weather**), livestock are removed allowing the plants to grow, flower and set seed. In early summer, a species rich hay meadow should be colourful, with lots of different species of grass and flowering plants living together. Yellow buttercups, white oxeye daisy and red clover add a vibrance that attract pollinators. After plants have set seed, meadows are mown and subsequently grazed to keep vegetation short before the following spring when they are left to grow again.

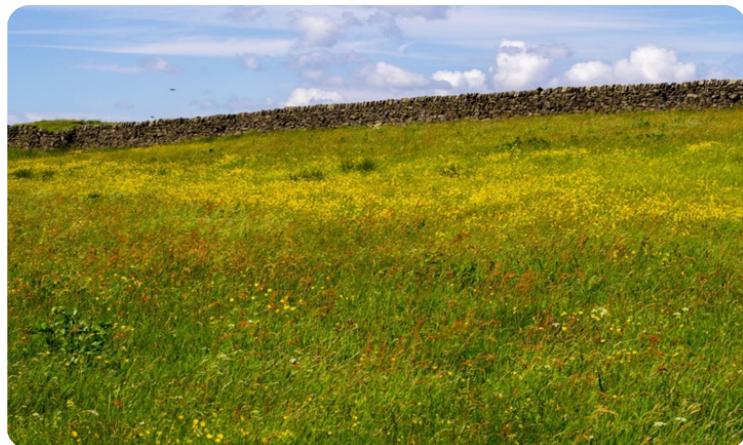


Figure 2. A Lowland hay meadow in full bloom containing a mixture of buttercup, common sorrel and grasses. Credit Paul Skirrow.



Figure 3. Picture 1b: **A Lowland hay meadow** with relatively tall (knee to hip-high) and densely packed in vegetation. Over 10 plant species per square meter is good. Credit Leanne Fox.

Purple moor grass and rush pasture (unimproved):

Purple moor grass and rush pasture (PMGRP) is a vitally important habitat within Nidderdale due to the high number of wading birds that breed here during the spring and summer such as curlew. It is usually wet underfoot with patches of standing water present in dips or hollows. This grassland type is usually grazed by livestock, but rushes are also mown. There are different vegetation structures present: some are tall and tussocky, others short and open. Sedges can be present in the wettest areas such as near a spring or a hollow. Rushes are an important component of this habitat, as well as flowering plants such as ragged robin and bedstraws.



Figure 4. Purple moor grass and rush pasture comprised of a mixture of short grassy areas with tussocks of rush and yellow flowering plants. This habitat is usually found on flat or gently sloping ground which is usually acidic. Credit Graham Megson.



Figure 5. Wildflowers such as ragged robin and buttercup add splashes of colour. Sedges and rushes can be the bulk of the vegetation. Credit Emma Coombs.

Lowland dry acidic grassland (unimproved)

Lowland dry acid grasslands are usually found on nutrient-poor, free draining soils that have a low pH of around 4 - 5.5. Soils will probably look sandy and crumble easily. They are usually managed through grazing only and can contain lots of different plant species, but low-growing herbs such as heath bedstraw and fine grasses like red fescue are indicators of this habitat. Dwarf shrubs such as heather and bilberry can be found here at low abundance. Also, mosses can be identified in wetter areas where lichens are found in patchy sections.



Figure 6. **Lowland dry acidic grassland** comprised of short open grassy areas with some taller vegetation interspersed. Longer vegetation with pignut (white flower) and common sorrel (red flower) scattered throughout. Purple heather can be present in patches as well as other dwarf shrubs such as bilberry. Fine leaved, wispy grasses leave straw-coloured patches throughout the autumn and into the following growing season. This grassland type is usually managed through livestock grazing. Credit Emma Coombs.

Upland calcareous grassland (unimproved)

Upland calcareous grasslands have thin, usually dry soils with a high pH (6.5 – 8.5) which are overlying limestone rocks such as chalk, making them slightly alkaline. If there are some exposed rocks present, have a look – white/grey rocks will usually be limestone, which will help you with identification. This isn't a common grassland type within Nidderdale and is only found either around Greenhow, on the Western edge of the National Landscape, around Stean and in small patches in the Northeast close to Ripon. This grassland type can support a rich variety of plant species that are lime-loving and cannot be found in other grassland types. Species such as thyme, rockrose and meadow oat grass are characteristic of this grassland. Vegetation is usually short and open, which benefits insects.



Figure 7. **Lowland calcareous grassland** showing relatively short vegetation with shallow soils. Exposed white/grey limestone rock is the best indicator of this habitat. A variety of delicate grasses and short flowering plants are packed together, potentially on rocky slopes. Meadow oat grass (oat shaped fruits) is an indicator of this grassland type. Credit Robyn Guppy.



Figure 8. these grasslands are colourful and packed full of plant species. Credit Robyn Guppy.

Calaminarian grassland (unimproved)

Calaminarian grasslands are only found where soils have high levels of heavy metals such as copper and lead. Heavy metal concentrations can be naturally occurring from rocks called serpentines or certain river gravels. In Nidderdale, high levels of heavy metals in the soil occur due to past human activities such as mine workings and spoil heaps (the Greenhow area has lots of evidence of historical mining activities) bringing heavy metal particles to the surface.

Calaminarian grasslands are rare (approximately only 200 hectares exist in England) and support a specially adapted range of plants, lichens and mosses that can't live anywhere else, such as spring sandwort. Vegetation is usually short and open with lichens encrusting bare ground and delicate flowers interspersed.



Figure 9. **Calaminarian grassland** with short open vegetation and relatively shallow soils. Some exposed rocks may be present. Plant species diversity is relatively low to other unimproved grasslands due to only specially adapted species being able to survive. Dark coloured lichens encrust rocks and bare ground, and delicate white flowers of spring sandwort and pink flowers of thrift bring splashes of colour. Credit Robyn Guppy.

Semi-improved grassland (semi-improved)

This is a grassland type that has been modified by agricultural processes such as through adding fertiliser and herbicide or having been heavily grazed or re-seeded with productive grass species. However, these modifications will be less intense compared with improved grasslands. These grasslands can be managed for silage/haylage production or livestock grazing. Semi-improved grasslands usually have fewer species than unimproved grasslands (such as the ones described above) but tend to have more than improved grasslands. Sometimes wildflowers can remain in small pockets in semi-improved grassland rather than being spread more evenly through the field like an unimproved species rich lowland hay meadow. These grasslands have the potential to become species-rich due to soil nutrients not being too high, however, they are easily lost to agricultural improvement because they're not protected by government like some species rich grasslands are.



Figure 10. **Semi-improved grassland** with few species of flower and grasses. Mostly uniform vegetation structure but can have some tussocks and rough patches. Grasslands stocked with a high density of livestock can be an indicator of improvement. Some dead straw-coloured vegetation can persist through the Autumn and into the following year may indicate grassland is not fully improved, and only semi-improved. Credit Claire Foster

Improved grassland (Improved):

This grassland type has been heavily modified by agricultural processes such as through adding fertiliser and herbicide, being heavily grazed, regularly mown or re-seeded with productive grass species. Improved grasslands are usually “very green”, have a high percentage cover of perennial rye grass and white clover and are species poor. Soils will usually be high in nutrients, which is not ideal if trying to restore to species-rich grassland. These grasslands can be managed for silage/haylage production or livestock grazing. Silage/haylage is similar to traditional hay but is not dried and instead, wrapped in black plastic to let it ferment. Depending on the makeup of the soil, other habitat restoration techniques such as tree planting may be more suitable.



Figure 11. **Improved grassland** with very few plant species present (potentially only perennial rye grass and white clover). A heavily managed grassland that is “very green” and uniformed with no tufts or tussocks of vegetation. Land is usually flat or gently sloping. Slurry may be seen being spread in relatively high quantities. Credit Joseph Haywood

Next steps

Hopefully you have been able to identify which type of grassland you currently own/manage. With this information you are better equipped to manage this grassland to benefit nature.

Use the other resource sheets on our website to see how best to manage different types of grassland and for specific groups of organisms such as invertebrates or wading birds.

Funding

To help fund grassland management, try and take advantage of agri-environment schemes. These can help fund restoration works and ongoing management. Below are two funding schemes which you may be eligible for.

Sustainable Farming Incentive (SFI):

[Sustainable Farming Incentive: guidance for applicants and agreement holders](#) – this is currently unavailable and will become available in April 2026.

Countryside Stewardship Higher Tier (CSHT):

[Countryside Stewardship Higher Tier](#)



Contact Us

If there is something you'd like to get in touch with us about managing your grasslands, please contact us using one of the methods below. Our postal address is:

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