

Supporting guidance for Creation of Species-rich Grassland

Date published: 12 May, 2017

Note: In November 2023, links to the documents /sites in the 'Further Information' section have been updated.

For recent changes to this guidance, please see the [bottom of the page](#).

This capital item supports the establishment of species-rich grass swards on arable land or improved grassland to be managed under the options for [Species-rich Grassland Management](#), [Hen Harrier Grassland Management](#) and [Wetland Management](#).

Their creation provides food and shelter for invertebrates, amphibians, reptiles, birds and mammals. They increase the extent and availability of pollen and nectar for bees and other pollinators. For Hen harriers in Orkney, the sward will provide cover and a suitable habitat for their main prey, the Orkney vole.

Where should I locate this option?

Ideally, your new species-rich grassland will extend or link up with similar habitats.

The creation of species-rich grasslands can be difficult and it is important to choose sites with low soil fertility. High residual soil fertility (especially phosphate) allows competitive grasses to grow fast and crowd out the smaller species. Undertake a soil analysis first.

Choose fields that are continuously cropped as arable fields, or in a short grass rotation with arable cropping because they will have a lesser burden of resilient weed species such as thistles, docks and creeping buttercup. Choose soils with naturally low fertility, for example light or thin soils, to slow the growth of competitive grasses and benefit smaller plants.

Extra care is needed when establishing species-rich grassland on intensively managed permanent pasture, and damper fields, for example on clay soils, where species such as creeping buttercup, creeping soft-grass, docks, thistles, and clover are likely to dominate.

Which species should I sow?

Choose a wildflower mixture made up of native Scottish species that naturally grow in your area. Where possible choose seed of UK origin and preferably of Scottish origin. The table at the end of this guidance shows a selection of plant species for a variety of conditions. We recommend you seek advice before buying the seed. Most of the species are perennial, which means that once established, they tend to be long-lived.

At least 15 per cent of the mixture must be flowering species, with the rest being grasses. Your choice of mixture and sowing rate will depend on the soil conditions and locality, and on the management option it supports.

- Because the management objective of the sward for the hen harrier option is to develop thick cover to support Orkney vole, the flower species need to be tall and robust, to compete with taller grasses. These species will also be more suited to lighter grazing and / or cutting.
- Wet meadow species also tend to be taller, as they are less frequently grazed than dryer grasslands.
- Plants in acid and calcareous grasslands tend to be adapted to shorter swards, which are typically grazed throughout the year by sheep.
- For neutral dry meadows the mixture can be quite varied. However, because these swards will be established on fertile soils we recommend you select robust species which can cope with competition. Traditional hay meadows are quite intensively managed by cutting and aftermath grazing. This favours both low-growing plants and those which can put on rapid growth and flower at various times in response to cutting.

- Include legumes, such as white clover, red clover, meadow vetchling and bird's-foot trefoil to increase the amount and availability of pollen and nectar available to bees and other invertebrates, particularly through the leaner months. However, take care not to include too much red or white clover in the mixture as they will tend to dominate, particularly on soils with high phosphate levels.

Establishing the grassland

Thorough ground preparation is essential for successful establishment of species-rich grasslands. Take as much time and care over it as you would over your best crop of cereal or grass.

The small grass and wildflower seeds need the finest of seedbeds. This is also the main opportunity to control the dominance of pernicious weeds.

The option requires the existing cover to be removed by 1 June in the first year of entry, so it is important to make sure ground preparation is completed as soon as conditions allow in the spring. The new sward must be sown after this work is completed.

First, remove any existing green cover by herbicide treatment, and cultivate to create a fine firm seedbed. Leave bare for a week or two and then kill any weed seedlings that arise, either by herbicide treatment or very light tillage, for example with light chain harrows or spring tines. You may repeat this operation. Avoid deep cultivations which will bring-up new weed seed. Do not apply fertilisers.

Sow seed at 15–20kg/ha depending on the mixture. The seeds tend to be small so you need only sow them directly on the soil surface or cover very lightly. You can go over the area with ridge-rollers in one direction, broadcast the seed, and then roll the ridges flat to bring the seed into contact with the soil.

If you are working with small amounts of seed you may want to bulk up the mix with meal or fine sand to help its distribution. Keep it well mixed in the hopper while spreading.

In addition, in-line with cross-compliance, keep cultivations at least two metres away from boundary features.

Managing the grassland

In the first year, cut or graze the sward to prevent the plants from flowering, and encourage root-growth.

Cutting is preferable in the first year, with all cuttings removed, followed by aftermath grazing.

All stock should be removed following aftermath grazing to avoid poaching the site in the late autumn and winter months.

This management will prevent seedlings being shaded out and control annual weeds. Control perennial weeds, for example by spot treatment with herbicide.

This requires prior written approval, you must request this from your case officer.

Tailor subsequent years management to the site and the requirements of the management option.

Yellow rattle

You can sow yellow rattle to sustain the diversity of the sward. Yellow rattle is semi-parasitic and takes nutrients from grasses and other nutrient-demanding plants in the sward, making them less vigorous. This creates a more open sward which allows other, less competitive meadow plants, to grow. It is native to the UK and can be found in a range of semi-natural grasslands but particularly species-rich, neutral hay meadows.

Yellow rattle is an annual plant which needs to be sown in autumn.

To meet the option requirements, the bulk of the mix must be sown in spring/summer but yellow rattle should be oversown separately in Autumn.

It can dominate but is controlled by cutting or grazing in summer. It is mildly toxic and can taint milk.

Related capital items

- [Pond Creation for Wildlife](#)

- [Creation of Wader Scrapes](#)
- [Restoration of Species-rich Grassland](#)
- [Creation of Buffer Areas for Fens and Bogs](#)
- [Diversionary Feeding for Hen Harriers](#)
- [Control of Invasive Non-native Plant Species – Primary Treatment](#)
- [Control of Invasive Non-native Plant Species – Follow-up Monitoring and Treatment](#)
- [Scare and Temporary Electric Fencing](#)
- [Gate - Self-closing, Two-way Opening Gate](#)
- [Stock Fence](#)
- [Restoring Drystone or Flagstone Dykes](#)
- [Gate](#)

Further information

- [Springs and Flushes](#) (NatureScot)
- [Grasslands for Plants and Animals](#) (NatureScot)
- [Grasslands](#) (NatureScot)
- [Create Your Own Wildflower Meadow](#) (Plantlife)
- [Land Management for Butterflies](#) (Scotland's Rural College)
- [Flora Locale](#) website



[Native species associated with grassland \(PDF, Size: 320.8 kB\)](#)

doc_external_url: <https://www.ruralpaymentsandservices.org/media/resources/Native-species.pdf> Table

Recent changes

Section	Change
Which species should I sow?	Reference to herbs changed to flowering species.

Previous versions

[Previous versions of this page](#)

Download guidance

Click 'Download this page' to create a printable version of this guidance you can save or print out.