

Supporting guidance for Creation of Low-input Grassland to Convert Arable Land at Risk of Erosion or Flooding

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The purpose of this [capital item](#) is to create a species rich, low productivity grassland for the benefit of soils, water quality and biodiversity within arable fields which are prone to flooding and / or soil erosion. The grass area can be located within a field to help prevent soil erosion or adjacent to water in areas at risk of flooding.

What needs to be done

To create the grassland in an arable field you should sow the area with a low productivity grass mix to establish a new sward. The seed mix should contain at least four flowering species.

The sward has to be established before 1 June in the first year of your contract.

Which areas to choose

Note: Where an assessment has been carried out as part of the diffuse pollution audit there is no need to carry out the assessments noted below.

In order to determine which areas of land should be entered into this option a simple risk assessment should be carried out to determine which areas of land are at greatest risk of soil erosion or flooding.

This should take into account factors such as:

- slope – particularly long uninterrupted slopes
- field valleys, low corners or other areas which tend to concentrate run-off
- soil structure – light soils (with a relatively high sand or silt content) tend to be more prone to erosion particularly those with a low organic matter content
- proximity of watercourses – land which drains directly to a watercourse will be of greater risk of transferring eroded soil to the watercourse
- flooding risk
- land adjacent to watercourses that are liable to flooding

What species should I sow?

Your wildflower mixture should be made up of native Scottish species that grow naturally in the locality.

At least 15 per cent of the mixture should be herbs and the rest grasses. You should use a mixture that includes two or three legumes, such as red clover, meadow vetchling and bird's-foot trefoil, to provide food for bees and other pollinators.

Wildflower seed suppliers sell a variety of mixtures, including some that mimic the composition of typical Scottish grasslands. Most of the species should be perennials, as in native grassland.

How do I establish the new grassland?

You can sow the wildflower seed in spring or autumn. Be careful to avoid times when the soil is either overly dry or waterlogged.

First, prepare the seed bed. Remove the existing vegetation by ploughing or by applying herbicide. Leave bare for a week or two then kill any weed seedlings that arise. Do not add organic or inorganic fertiliser as the seed mix will not benefit from high nutrient inputs.

Next, sow the seed at a rate of 15–30kg per hectare. You will need the highest rate on highly fertile soils where the slow-growing wildflowers will be in competition with fast-growing grasses and arable weeds.

The lowest rate will be suitable for very thoroughly prepared soils, where you have reduced the potential competition from other species to a minimum. Sow the seed directly onto the soil surface.

Finally, roll or tread the seedbed to bring the seed into contact with the soil.

How should I manage the new grassland?

Competition from annual and biennial weeds is likely to be the main threat to the successful establishment of the new grassland. Cut the grassland to about ten centimetres at least twice in the first summer to prevent the annuals from flowering and to keep the sward open enough for the sown species to establish. It is more important to let the sown species establish than to let them flower in the first year.

In later years and on fertile soils, unsown grasses such as Yorkshire fog may become dominant and crowd out the smaller species. One way to reduce the growth of problem grasses is to sow yellow rattle after the grassland is established. Yellow rattle is a native Scottish plant that is parasitic on grasses and weakens their growth. You can spread yellow rattle seed in autumn when the sward is at its shortest.

In the second or third growing season the sward should have closed up and you should be able to cut or graze it as for a long-established grassland. You should aim to create a variety of conditions to suit a variety of plants and animals, including:

- a sward mostly between five and 20 centimetres in height
- some short open areas where new plants can become established
- some dense tussocks to shelter invertebrates and small mammals
- plenty of flowers visible in summer

Grazing

Grazing animals are good at creating this variety with their trampling, dunging and eating. Graze your grassland at light to moderate levels to keep the sward at a range of heights and to allow some plants to flower. An annual stocking density of 0.35 LU/ha/year is about right. Long periods without grazing allow the grasses to grow tall and dense and to shade out smaller species, so graze down your grassland each year before the end of winter.

Cutting

Where no stock are available to graze, you should cut your grassland (not before 15 August). Cut to a height between five and ten centimetres and remove the cuttings, as if harvesting for hay. Hay meadows were traditionally grazed after cutting so you will need to cut a second time in the autumn or spring to replace this period of aftermath grazing.