



Creating an upland hay meadow or wildflower plot

This leaflet provides basic information and sources of more detailed advice for people who wish to create an upland hay meadow or wildflower plot.

What is a hay meadow?

Hay meadows are areas of grassland which are managed to grow a hay crop. This crop is used to feed farm animals over the winter. The traditional management of meadows involves a combination of cutting, grazing and hay making at specific times of year.



Plants like red clover are an important source of nectar and pollen for bumblebees

Hay meadows are home to a wide variety of wildlife. Species-rich upland meadows support a large number of wild flowers which in turn attract many different types of insect and other invertebrates, including grasshoppers and rare or declining bumblebees. These creatures in turn provide food for birds and mammals such as grey partridges, swallows, hedgehogs and bats. Hay meadows have evolved over hundreds of years through the practice of low-intensity farm management. In addition to being of great value for wildlife, hay meadows are important elements of the social and cultural heritage of the North Pennines.

What do you hope to achieve on your plot?

Before starting out it is important to consider what you hope to achieve on your plot of land, what resources you have access to and what use you may want to put it to. For example, for school or educational use it might be easier in the long-term to opt for a wildflower plot rather than try to mimic the more complex management regime required by an upland hay meadow. The following table may help:

1. You could create a hay meadow if you answer yes to these questions:	2. You could create a wildflower plot if you answer yes to these questions:
i. Do you have access to grazing livestock or can you cut the field & remove the cuttings to mimic grazing 1-2 times/year?	i. Do you want to create a plot that will support flowers throughout the summer but will be easy to manage?
ii. Do you have the facility to cut the vegetation and make hay in the late summer (July/August) either using machinery or a willing manual workforce?	ii. Do you want to attract and support nectar-feeding insects and other invertebrates?
iii. Do you know that no fertiliser has been added to the soil in your plot over the past 10 years?	iii. Has the soil in your plot been fertilised in the past 10 years?

1. Creating an upland hay meadow

Is my land suitable to turn into a hay meadow?

Species-rich meadows typically thrive on soils with low fertility. Characteristic hay meadow plants like wood crane's-bill and globeflower are able to tolerate low levels of soil nutrients. If the soil is too fertile then competitive, fast-growing grasses and 'weedy' plants tend to smother and out-compete the hay meadow plants. An area of land which has not been fertilised in the past or where the top soil has been stripped away is often a good starting point.



Wood crane's-bill



Globeflower

Getting a soil test

A standard agricultural soil test for pH and major plant nutrients (P – phosphorous, K – potassium and Mg – magnesium) is helpful for deciding whether a field has potential for hay meadow creation. For an upland hay meadow, the soil pH should ideally be above 5.5. If it drops below this, the soil is too acidic, although this can be remedied by adding lime. The level of phosphate in the soil can be a limiting factor. Unfortunately phosphate remains in the soil for a very long time. Most species-rich grasslands have a soil P index of 0 or 1. If the field has a P index of 2 then efforts to encourage the establishment of typical hay meadow plants may only have limited success. If the P index is higher than 2, meadow creation is unlikely to be successful. Soil tests can be undertaken by many local environmental laboratories which can be found in phone directories or on the internet.

What resources do I need to manage a hay meadow?

You will need the time and equipment to cut the meadow and remove the cuttings 2-3 times a year. On a small area, a strimmer and rake are all that is required. For larger areas you may need to use special mowers.



Hand raking is hard work but effective if you don't have access to farm machinery (© B.Brown)

A simple guide to hay meadow creation

1. The first step is to create a suitable seedbed. You will need to remove or plough in the existing turf and then break up the soil and rake or harrow it to a fine tilth. If the soil fertility is too high you can try to reduce it by removing the top 15 to 20cm of topsoil to reveal the nutrient-poor subsoil.
2. Choose a mixture of grasses and wildflowers that are characteristic of your area. Natural England's publication 'NE32: How to create a wild flower meadow in your garden', provides a useful table to help you identify suitable species.
3. Buy seed grown from native British plants. Flora Locale offer details of approved suppliers.



4. Prepare the ground about three weeks before you sow the seed. This will give time for any unwanted seeds in the soil to germinate so they can be easily removed.
5. The best time to sow is early autumn (late August/September) or spring (April/early May).

Mixing your seed with sand helps to spread it evenly

6. In the first year after sowing remove any weeds. Do not add fertiliser at any stage as wildflowers establish best where the soil fertility is low.
7. A year after sowing, mow the meadow every time the vegetation height reaches 10-15cm. Remove the cuttings. Do not cut the vegetation shorter than 5cm in height.
8. From the second year onwards, cut your meadow to a length of around 5cm after flowering has taken place (between late June and late August) and remove the cuttings. Many meadows also benefit from an early cut between March and early April to mimic spring grazing by livestock. This helps to keep vigorous grasses in check.

2. Creating a wildflower plot

On small plots of land where you do not have access to grazing livestock, machinery or labour you may wish to establish a wildflower plot. Management of this sort of plot is similar to standard gardening and they can be established in higher fertility soils. Competitive, weedy species should be regularly removed to enable target plants to flourish. By planting a range of nectar-bearing plants you can provide a valuable food source for creatures like bumblebees and butterflies. Creating space for plants that flower early, before those typically found in hay meadows, can be particularly beneficial for nectar-feeders in the spring and early summer.

Wildflowers to attract bumblebees

Flowering time	Plant
March & April	Bluebell, white or red dead-nettle, pussy willow
May & June	Alkanet, bilberry, broom, bugle, bush vetch, <i>Campanula</i> , comfrey, cowslip, dandelion, <i>Geranium</i> , foxglove, honeysuckle, kidney vetch, red campion, selfheal, woundwort, yellow rattle
July & August	Bird's-foot trefoil, bramble, burdock, knapweed, heathers, marjoram, meadow clary, raspberry, red bartsia, rock-rose, red clover, scabious, teasel, thyme, toadflax, tufted vetch, viper's bugloss, water mint, white clover

From: Gardening for Bumblebees (The Bumblebee Conservation Trust)

Where can I find out more?

www.floralocale.org (for comprehensive advice on meadow creation and suitable seed suppliers)

www.grasslands-trust.org

www.naturalengland.org.uk

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December 2010