B-LINES FACT SHEET 3

Wildflower-rich Grassland Creation

Preparing a grassland creation site © Iain Hurst

What type of grassland should I be creating for insect pollinators?

There are many types of wildflower-rich grasslands, including lowland hay meadows and pastures on deep neutral soils, flower-rich swards on the thin calcareous soils of the chalk and limestone landscapes and more acidic grasslands often found alongside lowland heathland areas (see Buglife). All these types of grassland are important and will provide food and habitat for their own distinct group of insects.

Can I create any type of grassland?

Wildflower-rich grasslands can be created from arable land or agricultural grasslands, but only when soil nutrient levels are low enough to allow wildflowers to establish successfully (see interpreting soil analysis). You should only try and establish wildflowers which can be grown in your particular type of soil. Take a soil sample (see soil sampling) and get it analysed; this will help to guide you on the type of grassland you should be creating (see interpreting soil analysis 2). Then look at B-Lines Fact Sheet 5 to help you to decide which wildflower species to use.

How can I ensure I will be successful in creating a wildflower-rich grassland?

Doing a few things right will increase your chances of success.

Question	Response
Does the land have existing wildlife interests e.g. rare plant or insect species, farmland birds etc?	If it does, you should discuss options with an expert from a wildlife/farming advice group, or Natural England. It is best to ensure any existing wildlife is preserved and not damaged.
Where is the best place to create grasslands?	The best locations are likely to be adjacent to, or near existing wildflower-rich grasslands or other natural habitats, from where plants and insects can readily colonise. Providing 'stepping stones' of grassland between, or directly connecting existing habitats is also a good idea, however this is not essential.
How important is knowing the fertility of my soils?	It is essential to find out the nutrient status of the soil and then use this knowledge to make appropriate decisions. The amount of available phosphorous is critical and if too high will need to be reduced. Advice on how to do this is found at Soil analysis.
What type of grassland should I create?	This will depend on the soil pH and soil type. For example, shallow lime-rich soils will lend themselves to the creation of grasslands typical of old chalk downland, and on waterlogged soils, wetland creation may be more appropriate. Further guidance is found at soils.

How do I create the wildflower-rich grassland?

Arable land and agricultural grasslands can both be used as a starting point for grassland creation, however if soil phosphorous is too high this will need to be reduced (see nutrient stripping). If you are starting with an agriculturally improved grassland you may find it difficult to establish wildflowers; grasses already present can easily smother newly germinating wildflower seedlings. In these cases it is best to create up to 50% of bare ground, or herbicide the existing grassland before attempting to add wildflower seed.

Rolling a seeded grassland © Clare Dinham

Some of the best ways of creating wildflower-rich grasslands include:

1. Natural Regeneration (i.e. seed coming in naturally from surrounding land)	2. Using Green Hay This is a way of giving nature a helping hand	3. Sowing Seed This is the most common method used to create wildflower-rich grasslands
• A good option if your land is close to wildflower-rich grassland. It is only likely to be successful when a wildflower seed source is available immediately adjacent to your grassland creation site • Species which thrive in your locality will hopefully establish themselves into your grassland, however it may take many years and you cannot guarantee the results • It is cost effective as there is no need to purchase seed	• Green hay (i.e. freshly cut hay) provides a source of native wildflower species produced within your local landscape • It is cheaper than buying seed mixes, however be sure that the hay comes from a wildflower-rich grassland site and make sure you obtain appropriate permissions. It may be worth contacting your local Wildlife Trust or Natural England for advice	• Ideally try and obtain seed harvested from local meadows (but seek expert advice on this) • A range of seed mixes can also be purchased, but ensure you select one which is suitable for the site's soil type (e.g. calcareous, neutral) – see Fact Sheet 5 for further information • Seed should be purchased from specialist suppliers and of native-origin, ideally from your local area (e.g. north of England, south-west England) – see sourcing seed
How? • Allow wildflowers in the surrounding area to flower and set seed • Open up the existing grassland sward by cutting, or grazing with cattle to provide bare patches of soil for seed to germinate	**How?** • You will need to find a nearby wildflower-rich meadow from which you can take some hay. The hay must be cut only once the seed has started to ripen • Immediately after the hay is cut, spread it thinly onto a prepared seed bed. Carry out work in late July - August but ideally not in drought conditions • Either use cattle to trample the seed into the soil (preferable) or use a roller	**How?** • Sow onto the surface of a prepared fine seedbed in August-September • A mixed grass and wildflower mix should be used at a rate of 10-15 kg/ha. If sowing a pure wildflower mix onto existing grasslands then use 1-1.5 kg/ha. • The sown land should be rolled to ensure seed is fully in contact with the soil.

How should I manage my newly created wildflower-rich grassland?

For the first few years of its life your newly sown grassland will need some careful management to allow the wildflowers to grow, flower and set seed. The following management is recommended:

- **Control weeds** – You should cut/top tall weeds such as docks and thistles several times a year for the first two years
- **The first year's growth** – In the first year you will need to prevent seedlings from getting smothered by vigorous grass growth. When the new grassland grows to a height of 10-15 cm, it should be mown to a height of about 5 cm, and the grass cuttings removed. You may need to do this several times over the year. Alternatively grazing can be used to reduce the growth of the grasses, but be careful as the grazing animals may eat young seedlings
- **The next few years** – You should be aiming to allow the sward to 'fill-out', i.e. create a good coverage of wildflowers and grasses. The grassland should be cut (or grazed) once a year after it has flowered and the seed has dropped (late July – August). After the hay has been cut, then graze until the end of the growing season (aiming for a sward height of 5 cm at the end of season)

Wildflower-rich grassland with burnt-tip orchids © Robert Goodison

Micropterix calthella © Nigel Jones

This is one of a series of B-Lines Fact Sheets which provides guidance as to how to restore, recreate and manage wildflower meadows and pastures. Other fact sheets include:

- Sheet 1 - **Grasslands for Insect Pollinators and other wildlife**
- Sheet 2 - **Wildflower-rich grassland restoration**
- Sheet 4 - **Management of wildflower-rich grasslands for pollinators and other insects**
- Sheet 5 - **Seeding the B-Lines; selecting species and seeds**

Further useful guidance includes:

Go native! Guidelines for planting projects in the countryside. (see Floralocale)

Buying native flora. (see Floralocale 2)

Grasslands Advice Leaflets (see The Grasslands Trust)

Grasslands restoration and creation for Bumblebees (see Bumblebee Conservation Trust)

Soil and agri-environment schemes: interpretation of soil analysis TIN036 (see Natural England)

Sward Enhancement: choice of methods – TIN062 – (see Natural England 2)

Seed sources for Grassland restoration and Re-Creation in Environmental Stewardship (see Natural England 3)

Arable reversion to species-rich grassland: establishing a sown sward TIN067 (see Natural England 4)

Information on Environmental Stewardship is available from Natural England (see Natural England - Farming and land stewardship)

Information on the Campaign for the Farmed Environment can be found at (see www.cfeonline.org.uk)

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