

WILDFLOWER MEADOW CREATION & MANAGEMENT GUIDELINES



Preparation

Site Survey

As a precursor to any meadow establishment project is recommended that a site survey is carried out by a suitably qualified person with a good botanical knowledge and understanding of UK grassland habitats and management. Grassland management can significantly affect diversity and wildflowers may be present within the seed bank that will return under the correct management. It is vital to undertake a survey of existing vegetation, hydrology and site conditions to inform decisions for meadow establishment.

The ideal site for a species rich wildflower meadow is one free of pernicious weeds such as nettle, creeping thistle, docks and vigorous grasses, resulting in less competition with the desired wildflowers for nutrients and water. Low soil fertility is also important for meadow establishment and the level of available phosphorous is the most important nutrient that influences grassland diversity. It is recommended that a soil test is carried out to establish levels of available nutrients Nitrogen (N), Phosphorous (P), Potassium (K) in addition to soil pH.

Seed Mix Selection

It is important that the correct plant species are selected that are adapted to the local site conditions and resemble the semi-natural plant communities of the local area. The plant species must be matched to soil type (pH), fertility, hydrology and topography. A wildflower and grass mix of 80:20 is normally recommended but this should not include vigorous grasses as these will compete with wildflowers for resources.

If vigorous grasses are a problem on your site the introduction of the annual plant, yellow rattle, can be highly effective in reducing vigour of grasses as the plant is parasitic on the roots of plants especially grasses. If the site has very high levels of available nutrients certain wildflower species can be planted that thrive in high nutrient environments but still provide a valuable habitat. Native provenance seed can be sourced from reputable suppliers that follow the Flora Locale Code of Conduct for supply of Native Flora. If your site is in or near an environmentally sensitive area such as a designated site for nature conservation you should not introduce seed from outside the local area.

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Ground Preparation

The soil must be prepared for seed sowing to create open areas for the seed to germinate. When creating a wildflower meadow from scratch the aim is to produce a firm weed-free tilth, through soil cultivation, to promote healthy germination. It is occasionally necessary to remove the topsoil in areas of high fertility (this can be sold to raise revenue) as these soils tend to promote the growth of more vigorous grasses and pernicious weeds.

Planning Permission from the Local Authority is often required to remove topsoil and a good knowledge of available nutrients at different soil horizons would be required to determine the correct depth for soil removal. On heavy clay soils some top soil will need to be replaced but on chalk or limestone the seed can be broadcast directly onto the chalk substrate.

To remove docks and thistles, nettles and weed grasses, the site should be treated with herbicide (following the manufacturer's instructions) prior to seed bed cultivation. Several applications may be required after further cultivation and to remove weed flushes.

If the site already contains a degree of wildflower diversity, old meadow grasses and no pernicious weeds it may be preferable to retain this diversity and work with the existing vegetation. This should be determined in the initial site survey the level of existing plant diversity. Seeds can be introduced by using a harrow or disc to expose at least 30% bare earth and broadcast a wildflower seed mix.

Summary of Ground Preparation for Fertile Sites

- Treat existing vegetation with herbicide
- Shallow cultivate site with a rotovator and roll to consolidate ground to keep in moisture
- Harrow or treat weed regrowth
- Power harrow to create fine surface tilth
- Final spray if required
- Surface sow the seed and roll
- Alternatively, if old meadow grasses are present, expose 30% bare earth and sow 100% wildflower seed into existing vegetation.

Sowing

Providing a good tilth can be prepared and the optimal time for seed sowing is in late summer/early autumn, which means the seeds are not exposed to rising soil temperatures but will be exposed to cold moist temperatures over winter, which can help break dormancy of some species. If sown too late in autumn seedlings may be killed off by frosts. The months of March/April can also be suitable for sowing in areas of land that are prone to winter flooding.

- Mix seed - regularly mix to ensure even species distribution
- Surface broadcast – with a fertilizer spreader
- Rate – 5g/m² (50kg/ha 80:20mixes) OR 1.0g/m² (10kg/ha pure wild flower mixtures).
- Sand - bulk up small seeding rates with sand or sawdust
- Ring Roller - use Cambridge Roller to firm seed bed or use cattle to tread in seed

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Plugs

The introduction of plugs into a wildflower meadow should be considered over small areas of under a hectare or for specific species that are difficult to establish from seed and are more unusual or rare species such as *Geranium pratense* (Meadow Cranesbill), *Knautia arvensis* (Field Scabious) and *Campanula glomerata* (Clustered Bellflower). Small wildflower plugs of 27cc should be planted at a density of 20 plants per m² in clusters of 4 to 5 plants per species.

Plugs should be planted, preferably in weed free soil, at the beginning of the growing season in late March to April and should be watered in thoroughly. Watering during establishment period (first 10 weeks) may be required during dry spells.

Maintenance

First Year

The management requirements in the first year of meadow establishment will depend on the soil Fertility, but the primary aim is to control weeds and reduce competition from grasses in the first year. Keep the sward short in the first year until the end of June to reduce competition and stop in July and August to allow any wildflowers to seed. Remove all cut material to avoid smothering the sward.

Where persistent weeds are a problem, spot treat with broad spectrum herbicide or dig-out.

Future Maintenance

Keep grass short until April/May in a summer flowering meadow and remove cuttings. The second cut should take place at the end of the flowering season during September/October (the flowering period may alter slightly according to climatic conditions and plant communities). Remove all cuttings. The site may require further cuts in the autumn period to remove untidy growth in an extended growing season.

Maintenance Summary

First Year

- First cut 5cm March/April (Spring Seeding 1st cut in May)
- Cut every 2 months or when sward reaches approx 15 cm
- Stop cutting in June-August to allow wildflowers to seed
- Final cut September/October
- Remove all cuttings

Future Years

- First cut 5cm March/April
- Second cut 5 cm September/October
- Remove all cuttings

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Cornfield Annuals

Make the first cut in early March and a second cut once the flowering period is over, i.e. during September/October. Harrow Autumn or Spring to regenerate the annuals.

Monitoring

Monitoring of the established grassland is important to determine requirements for weed control and management. Botanical surveys at fixed points within the meadow should be carried out for at least the first 5 years by a suitably qualified person to determine the level of vegetation establishment, species abundance, sward height, vegetation cover and flowering potential.

