

## Restoring wildflower grasslands in Wales



Yellow rattle, *Rhinanthus minor*

**Flower-rich grasslands were once a common feature of farms throughout Wales. Today, they are an increasingly rare sight, but many landowners and farmers are now interested in restoring the natural range of wild plants to their meadows.**

One way to restore wild-plant diversity is to collect seed or use seed-rich hay from an existing flower-rich meadow and spread this on the site to be restored. Grasslands that have retained a good variety of native grasses may also have the potential to recover their wild-plant diversity by restoring good hay-meadow and pasture management. Before deciding exactly what approach will work best, it is important to seek advice from an ecologist. Your local Tir Gofal officer should be able to locate a suitable expert, or provide the necessary advice themselves.

This leaflet mainly focuses on grasslands that are suitable for hay meadow management. Others, especially very wet areas, and small fields unsuitable for mowing, will need to be restored by ensuring that grazing is at appropriate levels – for example, sufficient to reduce tussocky species and encourage fine-leaved grasses and wild flowers.

Bringing back the meadows

## Managing grasslands to encourage wild flowers

Meadows where this is most likely to reap rewards are likely to contain grasses such as Red Fescue, Common Bent, Sweet Vernal-grass and Crested Dog's-tail. Wild flowers which are an encouraging sign include Black Knapweed and Bird's-foot Trefoil. Many traditional Welsh meadows also contain damp patches with rushes, Meadowsweet and other plants of damp ground. Under-grazed or very small fields containing some of these wild flowers will be particularly suitable candidates for restoration by achieving appropriate levels of grazing.

Not all grasslands, such as those dominated by Perennial Rye-grass and White Clover, will be suitable for restoring by management.

Restoration should begin by stopping the use of any routine fertiliser or manure applications and taking an annual hay crop. Weed control must be solely by spot-treatment using a knapsack spray to target individual plants or clumps of weeds, as 'specific' herbicides applied using a spray boom will also kill desirable wild flowers.

Important resources for hay-making are machinery available at the critical time, labour, and somewhere to store the hay, if it is not sold as a standing crop. Horse owners in the area may be prepared to pay good prices for herb-rich hay. The meadow needs to be accessible to machinery, relatively level and stone-free. The other important resource is livestock, such as cattle, ponies or heavy sheep, to graze the late-summer and early-autumn grass growth (the 'aftermath'), after the hay crop has been removed.

A cutting date after 7 July allows birds to complete nesting and some of the flowering plants to set seed, but appropriate dates will vary depending on the season, altitude and thickness of the grass growth.

Aftermath-grazing is essential, as it prevents tussocky grasses from taking over and encourages wild flowers to thrive. Light cattle-grazing is often recommended, but sheep-grazing may be as effective. Meadows will benefit from being rested between November and February. Over-grazing, and grazing in wet periods, can damage the turf and create disturbed ground where

thistles, nettles and docks will thrive. Ground conditions and grass growth permitting, grazing might be resumed for a short period in early spring, before the meadow is 'shut up' between April and until the hay is cut in July.

## Introducing wild flora seed

Introducing wild flowers by using seed-rich hay or cleaned seed can substantially speed up the process of restoring a herb-rich meadow.

Any site considered for enhancement should be carefully assessed beforehand as not all improved grassland sites will be suitable for introducing wild flowers. Suitable sites should contain a high proportion of fine-leaved grasses, be low in available nitrogen and have a low weed burden. Enhancement will be unsuitable for fields containing a lot of False Oat-grass, Cock's-foot, Yorkshire Fog, White Clover or Perennial Rye-grass.



Peter Creed



Jim Asher

*Marsh Fritillary butterflies are found on herb-rich pastures where their food plant, Devil's-bit Scabious flourishes*



James Robertson

*Achieving a tight sward in early autumn can benefit grassland fungi, such as waxcaps*



James Robertson

**Grazing at appropriate stocking rates is essential to maintain and restore wildflower grasslands.**



**Mowing and baling green hay.**



**Spreading green hay using a straw chopper/spreader.**





**Brush harvesting is a good way to collect seed from wildflower meadows.**

To introduce seed, whether using hay or cleaned seed, into existing grasslands, the ground will need to be prepared by taking a hay cut or grazing down the grass sward, followed by discing, power-harrowing or weed-killing patches or strips in the field prior to sowing. Up to 50% can be treated.

Former arable land and other areas of bare ground, such as new road verges, can also be sown with suitable seed mixtures to create new wild flower grasslands. These must be properly prepared during spring and summer to remove weeds in the seed bank.

To find a source of seed contact *Flora locale*, your local wildlife trust or your local Tir Gofal officer, who may know of a meadow where seed or hay can be collected from.

Seed can be harvested directly from meadows using a brush harvester. After drying and cleaning it needs to be spread (not drilled) over the field using a fertiliser spreader. The ideal time to sow seed is in late summer (especially in upland sites) or early autumn.

After sowing seed or spreading hay on existing grasslands, livestock should be allowed to graze the field. They will eat any surplus hay and trample the seed into the ground. On bare-ground sites the seed must be rolled into the prepared seedbed using a ring-roller.

## Using green hay or forage-harvested grass

This method can be used where the site to be restored is close (less than two miles) to a herb-rich meadow. The receptor site must be prepared prior to the hay cut (early-mid July). After the donor site is mown, the grass should be baled or collected quickly (within one day of mowing) using a forage harvester. Bales must be rapidly unrolled or spread not more than one hour after being made; alternatively they can be chopped and spread on the receptor site using a straw spreader.

Seed-rich dry hay bales can also be used, but success will depend on how seed-rich the bales are – they should be obtained from a trusted source.

## Action for restoring meadows

There is growing support for restoring wildflower grasslands in Wales. Many individual landowners and conservation groups, concerned with the desperate plight of wildflower meadows, are now sharing their skills and resources to restore meadows. There are already projects in Monmouthshire, the Brecon Beacons and Gwent.

The priority remains to prevent the loss of existing wildflower-rich meadows, but this is no longer enough. The future lies with restoring this unique part of the agricultural and natural heritage.

## Further information

*Flora locale* is producing a register of seed donor sites, is developing demonstration sites throughout Wales and has published lots of practical guidance about restoring wildflower grasslands. To find out more, including projects in your area, go to [www.floralocale.org](http://www.floralocale.org) and [www.wildmeadows.org.uk](http://www.wildmeadows.org.uk).

## Tir Gofal

Tir Gofal, the Wales agri-environment scheme, provides financial help for meadow restoration, with premiums payable for the use of Welsh Black cattle. Contact your local Tir Gofal officer for details.



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## Grassland advisory notes include

- ✿ Enhancing the floral diversity of semi-improved grassland (P)
- ✿ Creating wildflower meadows on improved agricultural grassland sites
- ✿ Managing recently created grasslands (P)
- ✿ Collecting and using brush-harvested seed
- ✿ Spreading forage-harvested grass from a hay meadow
- ✿ Sowing wild flora seed (P)
- ✿ Spreading hay (P)
- ✿ Obtaining native seed (P)
- ✿ Buying native flora (P)
- ✿ Creating meadows using hay bales (Author: Dartmoor National Park Authority)
- ✿ Identifying grassland features (Author: Defra, in the Farm Environment Plan Handbook).

P: printed versions are available (please write and enclose an A4 s.a.e. to order copies).



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*Flora locale* is a UK-wide charity that promotes the wise use of wild flora for biodiversity projects and other wild-plant restoration projects.

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