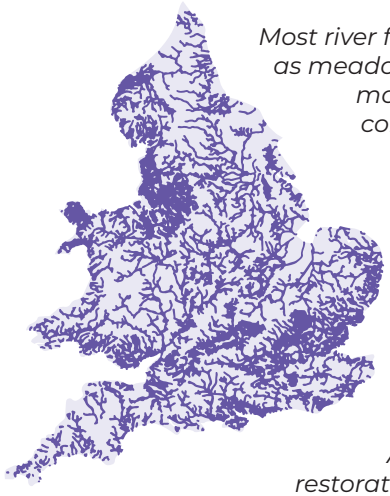
RESTORING AND CREATING NEW FLOODPLAIN MEADOWS IN ENGLAND AND WALES

Once widespread in river valleys, flower-rich floodplain meadows were highly prized as their nutritious hay kept farm animals alive and healthy through the winter. They recover well after flooding, when nutrient-rich river sediments are deposited and act as a natural fertiliser. They are productive during drought because of their fertile soil and deep rooted plants.

Only 1% of their former extent, around 3000 ha, remains in England and Wales. Most have been built on, excavated for minerals, drained, sprayed, ploughed or re-seeded.

We are increasingly aware of how useful floodplain meadows are because of their many benefits: self-sustaining agricultural systems producing healthy meat and hay without the need for chemicals, supporting pollinating insects, storing carbon and floodwaters, rebuilding soils, reducing siltation and pollution in rivers.

As 70 % of our floodplain land is under intensive agriculture, changing land use from arable or intensively grazed pasture to species-rich meadow will restore these benefits and reduce management costs.



Most river floodplains were used as meadow 100 years ago, and most floodplains can be converted to flower-rich meadows now.

A floodplain meadow restoration field after 3 years.

Photo credit: Hilary Wallace

Can your floodplain land support a species-rich plant community?

You will need to know the type of soil, its fertility, and water regime. This will help you judge the likelihood of success and decide on the best method to use.

Avoid sites with compacted soil. Soils with high nutrient levels (indicated by dock, hogweed and nettle) need to have their fertility reduced by taking several hay or silage cuts each year for 2-3 years – all hay must be removed from site. The removal of topsoil is another, but more expensive, option.

What plants are already present?

These give useful clues about soil conditions and management history. If there is a good range of grasses but very few herbs, the land may have been sprayed with herbicides in the past but retain an appropriate water regime, soil structure and soil fertility level.

Changing from current land use to a species rich meadow

- For sites with well drained (not waterlogged) soil and key plant species present (see below), a simple change in management may be all that is required, for example introducing an annual hay cut on previously pastured land;
- For arable land with highly fertile soils, it may be necessary to take further arable crops for 1-2 years without using any fertiliser, then applying seed;
- For intensively managed grassland, cut and remove the arisings for up to 3 years without using fertiliser, then disc harrow the grassland to create bare soil before introducing seed.

Key plant species

Introducing seed

- You can strew green hay from a nearby good quality site. Green hay should be spread as soon as possible after it has been cut in July when the seeds are ripe. Green hay from 1 ha of meadow should be sufficient to seed 3 ha of land.
- Spreading of dry species-rich hay from a suitable donor site can be a good low-cost option, or feeding hay to animals in the field in autumn.
- Alternatively, brush harvested seed can be collected in July when the seeds are ripe.
- Keep the sward open for a year or two to help plants establish.

Controlling unwanted plants

If aggressive weeds such as docks, ragworts, thistles and nettles or Himalayan balsam get established, it is best to cut them every year before they flower and set seed.

Key points

Success will depend on the weather conditions after sowing (there may be a flood or a drought!), and on flexible and adaptable management after establishment.

Regular hay cutting and grazing is essential after restoration activity and should respond to weather conditions in each year rather than by specific calendar dates.

Be patient, as it will take TIME! But good results have been obtained within 2-3 years of diversification, even if the site looks a bit scruffy for a while.

Further advice

More detailed advice can be found on our web site: www.floodplainmeadows.org.uk

FMP Ambassadors are trained and available in many counties to provide local advice.

See ‘Floodplain meadows in England and Wales best management practice’ advice note

Natural England and Natural Resources Wales may be able to help, especially if they are supporting the work through agri-environment schemes.

Your local Wildlife Trust may be able to offer guidance and advice on sources of seed and funding. Visit http://www.wildlifetrusts.org/

The Environment Agency and Natural Resources Wales can provide information on flooding and water quality, the need for flood-risk assessments and other permits when planning work.