



Flowering Fields



*exploring the
natural heritage
of hedgerows*



Supported by the
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INTRODUCTION

The Wildflower meadow is an amazing feature of the British landscape and one that changes continually with the seasons.

In the past, wildflowers were allowed to blossom and seed in the fields. This ensured that every year the countryside came alive, with vibrant colours and scents. Grasslands could be found buzzing with activity from insects, birds and animals.

There are a huge number and variety of flowers that grow in meadows. They all have individual characteristics, attracting the attention of passing wildlife, as well as being admired by human visitors.

Charles Darwin said, “Flowers rank among the most beautiful productions of nature”, a statement that cannot be disputed.

Wildflower meadows are, therefore, areas that are very precious to the traditional English countryside.

But what actually are wildflower meadows and where have they come from?



A field full of poppies

What are meadows and pastures?

Meadows are areas of old agricultural land, which were used in the past to produce hay. The fields were left undisturbed, allowing the grasses and plants to grow and flower. They were then cut and the resulting hay was stored and used as food and bedding for livestock, during the winter months.



Pastures are another type of field found on the traditional farm. They also flowered in the summer, but the grazing stock - like sheep and cows - were allowed to directly eat the grass, rather than eating it as hay during the winter.

Wildflower meadows and pastures that are unimproved by technological advances in the farming industry, support a huge variety and diversity of wildlife. This makes them very important habitats, that we should be working hard to conserve for future generations to enjoy. Unfortunately, this does not always happen and a large number of these wildlife havens are being lost forever.

Technological advances in the farming industry have included the use of chemical sprays, heavy machinery and land drainage techniques. Chemicals are used to kill all plants, other than the crop being grown, and any insects, which may destroy the farmer's crop.

The idea of this booklet is to provide an insight into meadows and why they are so important for wildlife and the rural community. The aim is to encourage you to explore your local area, to see if you can find any of these amazing wildlife sites. You can then record what you find using the survey form included in this booklet. The records that you produce will help conservationists to identify and protect some of our counties' wonderful areas of natural heritage.

THE ARRIVAL OF GRASSLANDS

Until about five and a half thousand years ago, Great Britain was mostly covered in dense woodland. The only grass areas around at this time would have been found in forest glades. Here the sunlight reached through gaps in the tree canopy to the grasses on the woodland floor.

The first farmers

When farmers first arrived in Britain from the Mediterranean around 3500 BC, they cleared huge areas of the forests. The grasses from woodland glades invaded these cleared areas, where the sun now shone, and thrived in what was an ideal climate for them.



A forest glade carpeted with bluebells

The farmers were now able to cultivate the grasses for use as hay and for grazing. This form of management carried out by the early farmers prevented the grasslands from reverting back to forests.

The process of grassland areas returning back to woodlands is called succession. When this occurs coarse grasses take over, followed by shrubs

and trees, which eventually smother the smaller plants.

Since farmers arrived in Britain and created the first grasslands, man, as well as nature, has affected the destiny of this habitat. It is therefore our responsibility to protect their uncertain place in the British countryside.

WHERE HAVE ALL THE FLOWERS GONE?

At the beginning of the century over 80% of the land in Leicestershire and Rutland was old grassland. We are now left with less than 5% of this.

The effects of the second world war

During the years before the Second World War, the farming industry in this country was mostly employed in cattle farming, and was dependent on importing its arable food stuffs from other countries. As the War broke



out, enemy submarines blockaded the trade routes into Britain. This meant British farmers were required to produce enough cereals and root crops to feed the entire population of the country.

The meadows and pastures that were previously home to the cattle, had to be ploughed up and sown to produce more arable goods. This instantly destroyed their wildlife value.

Along with ploughing up the meadows and pastures, many other new agricultural methods were employed. The aim of all of the new methods was to increase the amount of food our farmers could produce, to cope with the sudden demand. This was part of the national 'Plough For Victory' campaign.

The technological age of agriculture

The 'Plough for Victory' campaign marked the beginning of the technological age in farming, which saw

many changes. These included: the disappearance of the farm horse, the wide spread use of the tractor and other heavy machinery, the indoor rearing of animals, controlled grazing, the use of fertilisers, herbicides and pesticides and improved land drainage techniques.



A field being ploughed in the traditional method

All of these technological advances resulted in the arrival of a much more intensive form of agriculture. Traditional methods of farming became uneconomical, resulting in the destruction of many hay meadows and pastures.

New hay making methods

Although most of the previous cattle farms were changed to arable farms during the War there were still some cattle in

the country, which required food and bedding. The methods used to produce these goods also changed during the Second World War.

Hay meadows historically were not cut until late June or July. However, modern grasses for silage can be cut as early as May. This enables the farmer to take more than one crop off a field and increase the amount of product and therefore profit he can get from it. However, it also means that the plants are cut before they have seeded, so they die off. This results in the loss of the variety of flowers, insects and other animals, which depend on late cutting of the hay.

The mowers often arrive just as the skylarks are nesting and as the young hares are being born. The wildlife of traditional meadows is thus absent in the agricultural landscape of today.



The modern agricultural landscape

A decline in numbers

Since the end of the Second World War the numbers of meadows and pastures in the Country has continued to fall. It has been calculated that 95% of all old meadows that still remained in Britain at the end of the Second World War have since been ploughed, drained, sprayed, developed or lost in some way, and only 3% have been left completely undamaged.

Another awesome fact is that new figures show that in the UK, even since 1992, we have lost the equivalent of 100 football pitches of meadowland every day!



Government strategies

However, we cannot blame the farmers for the loss of this wonderful habitat. Until the mid 1980's, farming communities were encouraged by the Government to increase the amount of food they produced. They were given financial incentives to farm their land intensively. This policy effectively encouraged them to destroy old, unimproved grassland areas.

We have caused much damage, by trying to get as much food as possible from the land, without thinking about the implications on wildlife. This approach has not been environmentally sustainable.

In recent years the emphasis in the farming community has changed. Food stocks have become surplus and farmers are now being asked to move away from intensive farming strategies and conserve our remaining natural heritage.

However, this is not an easy transition to make, as although

there are food surpluses on the National and International scale, farmers still want to produce as much as they can to maximise their income. They, therefore, do not want to change their practices, which produce high yields of goods, for those which do not, but which are environmentally friendly.

Economic support for this has been limited, although incentives have been increased for farmers to go organic. Organic farmers are more likely to maintain meadows, as well as using other environmentally friendly techniques. Increasingly farmers are recognising the value of traditionally managed pastures and meadows and are taking action to protect them.

PROTECTING THE MEADOWS

Biodiversity

In 1992 at the Earth summit in Rio de Janeiro, a convention on Biological Diversity was

formed. As part of this the UK national Biodiversity Action Plan (BAP) was launched with the aim of restoring our range of species and habitats.

Biodiversity refers to the variety of life, including all living organisms, the variations that occur within them and the habitats in which they are found.

Many local BAPs have been written that relate to the nature of the local area and the wildlife and habitats that can be found in it. These local BAP's contribute towards meeting the targets set in the UK BAP.

The Leicester, Leicestershire and Rutland BAP, identifies the most important species and habitats in the counties and outlines appropriate means of protecting and restoring them. Over 400 species of wildflowers can be found in 'unimproved' meadows and pastures across the Country, and in an average sized

meadow 20 - 40 species may be present. Locally large amounts of this habitat have been lost. This has resulted in unimproved grasslands being identified as a priority for Leicestershire and Rutland local Biodiversity Action Plan.

DIFFERENT TYPES OF GRASSLAND

The characteristics of the wildlife found in unimproved grasslands depend on the features of the site itself. In a comparatively small area, such as Leicestershire and Rutland, where environmental conditions like climate are relatively constant, the most important factor influencing the wildlife is the soil type. Soil types are dependent primarily on the rock from which the soil is formed. There are four main types of grassland which can be found in Leicestershire and Rutland. These are neutral, limestone (or calcareous), acidic and wet grassland.



The largest proportion of sites are defined as neutral grasslands. These are found where the soil is clay and examples are Muston Meadows in Bottesford (Melton) and Cribbs' Meadow in Wymondham (Melton). Cowslips are characteristic of this type of habitat. Green-winged orchids, which are very rare in Leicestershire and Rutland, are practically confined to this type of habitat.



A Green Winged Orchid found at Cribbs' Meadow

Calcareous grassland can be found on limestone. Rutland has some nationally important areas, and small amounts can be found in the North West of Leicestershire.

This is the most species-rich type of grassland for plants and insects where up to 60 different plant species can be found in a square metre. An example of a typical limestone grassland flower is rock rose. Breedon Hill is a good limestone grassland site.

Acid grasslands are found mainly in Charnwood and the north west, as well as other small areas. A good example is the pasture at Broad Hill, Whitwick (Coalville). These habitats are relatively poor in plant species and are particularly susceptible to invasion from shrubs and bracken. However, there are several specialist plants that only grow in acid grasslands such as tormentil and wavy hair grass.

The final type of grassland that can be found is wet grassland and floodplain meadows. These generally have less plant diversity than drier grassland areas, but are still important for their specialist flora. Loughborough Big Meadow is a good example of floodplain

grassland and supports plants such as salad burnet and tubular water dropwort.

FIELD FOLKLORE

The hay meadow and pasture was central to rural life in the past, as most residents worked and lived by the farm. It therefore became one of the focal points for the community, holding great social and cultural importance.

Village fields were given names, which were often descriptive of features or rural connections. These names may have been derived from Old English and can be traced over hundreds of years. A 'moot' field was very important to the community in Anglo Saxon times, as it was where local assemblies settled law suits, and later it was where parish meetings were held. These fields often contained prominent landmarks, which made them easy for the residents to identify. 'Mot Close' in Thurlaston was one of these fields.

Many other community events took place in the fields, including a tradition called 'Beating the Bounds'. This involved walking around the parish boundary across the farms and fields, whilst asking for God's blessing to protect the crops.

WILD ABOUT FLOWERS

As meadows were historically so numerous, the people of the time were privileged with the abundance of many beautiful wild flowers. The flowers themselves also became an important part of rural life.

THE LANGUAGE OF WILDFLOWERS

Names were given to the traditional flowers of the meadows, which reflected the character of the flower itself. The name may have described the appearance or scent of the flower or even the sound it made - for example the yellow rattle described the sound of the ripe seeds rattling around in the capsule.



When the yellow rattle was heard in the fields, farmers knew that the hay was ready to be cut.

Flowers also had different meanings. This meant when giving flowers as a gift the choice was very important. The presentation was also significant, for example if the flowers were handed over upside down the meaning was reversed. When flowers were received, they could be worn in different ways also implying different meanings.

A flower worn on the heart meant love and in the hair meant caution.

HOMEOPATHY AND HERBALISM

The science of herbalsim and homeopathy are forms of natural medicine, which have been practised for centuries and were believed to relieve and cure many human and animal ailments.

Many manufactured medicines have herbal alternatives and these are often where the modern medicines originated.

CAUTION: It is not safe to eat or swallow any plants or flowers grown in the wild; they may be poisonous or have been sprayed with chemicals! Do not try to make medicines using them - these ideas are hundreds of years old and have been developed using technology to create safe alternatives.

Cowslip

One of the most characteristic flowers of the hay meadow is the cowslip, which represents pensiveness and winning grace in the Language of Wildflowers. Their name is a polite form of 'cow-slop' as they were thought to grow from wherever a cow left a cowpat. They are also referred to as Key flowers, as the heads were thought to represent St. Peter's bunch of keys. Cowslips were used by children to make garlands

for May Day celebrations, were made into wine and were used to aid beauty. They were believed to have calming properties and were used for ailments such as headaches, sleeplessness and hysteria.



Cowslip

Children picking wild poppies, greater stitchwort or white campion were believed to provoke thunder and risked being killed by lightning. To ward off lightning, however, ox-eye daisy could be hung in bunches over barn doors.

Ox-eye daisy

Ox-eye daisies were also believed to cure a variety of ailments, including diseases of the chest and liver.

The stems also used to be used to produce drops to relieve runny eyes.



Ox-eye daisy

Meadowsweet

Locally the name meadowsweet is thought to come from the fact that it was used to sweeten mead. It is also known as Queen-of-the-meadows, this name is thought to have arisen because it was a favourite of Queen Elizabeth I. She used it to mask the smells of the 16th century. The leaves, with their wintergreen scent, were used to decorate palaces and banqueting halls in summertime and they are now widely used in pot-pourris.



Clover

The meaning given to the flower clover in the Language of Wildflowers was industry.

This perhaps stemmed from the fact that butterflies and bees feast on its nectar.

Clover has an extremely high lime content and has been used medicinally for centuries. It is one of the few herbs to exert a beneficial influence on cancer of all types, and herbalists (especially in America) have recorded success. The broad leaves of clover plants have horse shoe marks, which may be the origin for the lucky four leafed clover. Another possibility for this reputation may be the fact that it was once thought to be an antidote for all poisons.



Clover

Buttercup

The buttercup is associated with childishness and ingratitude. Poisons used to be made using buttercups that inflamed and blistered the skin. This was a trick used by beggars in the past to gain sympathy, and therefore money. It was thought that buttercups worn in a bag round your neck could cure lunacy.

GRASSLAND CREATURES

The flowers and grasses of meadows attract many animals, birds and insects making them rich habitats that support a variety of wildlife.

Ants

One of the most prominent features of old grasslands are created by one of its smallest inhabitants - ANTS. The grassy hillocks, which can be found scattered like cushions across the sward, are the homes of yellow field ants.

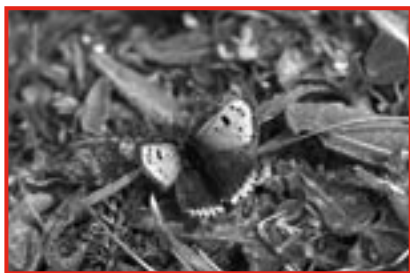
Each dome conceals a honeycomb of passages and chambers which is home to up to 25 000 ants! The mounds are the breeding centres for a colony and link with other passages that spread into soil and turf beyond.

A queen ant, who spends her time laying eggs, rules each ant nest. All of the worker ants are female and males are only hatched at breeding time and die as soon as they have mated.

Butterflies

There are many butterflies associated with wildflower meadows and pastures.

They include the small and large skipper, small copper, gatekeeper, meadow brown and small blue.



A small copper butterfly

The small copper butterfly is a beautiful species that can be found in unimproved grasslands. Keep your eyes open for a sub-species that has vibrant blue spots on its hind wing.

Butterflies have complex interactions with the other wildlife of meadows and can be good indicators of the condition of a site. Butterflies depend on the plants and flowers for food as caterpillars, and nectar as adults. They are also prey to birds, frogs, toads and a number of mammals. With the disappearance of wildflower meadows many butterflies have gone as well.

Birds

The seeds of flowers and grasses in meadows provide food for birds. Some, like lapwings, curlews and yellow wagtails, then build their nests and hatch their eggs on the ground using the plants for shelter and protection from predators. Other birds that can be seen in meadows and pastures are green



woodpeckers, which look for ants, and fieldfares and redwings that visit during the winter. Kestrels are also associated with meadows and pastures, and can often be seen hovering overhead looking for small mammals.



A curlew sitting in the meadow

Mammals

Mammals can be found in old meadows and pastures too, some living in them and some just using them as feeding grounds. Badgers spend much time foraging in the fields for two of their most important food types, earthworms and beetles.



Badgers find food in meadows and pastures

Moles also feed on worms and insects in the soil and create molehills, which are characteristic of meadows and pastures. Field voles build systems of tunnels through the grass roots and build nests in the tussocks. They are an important food source for predators like weasels.

Rabbits and hares commonly live in meadows and pastures, as they have a large supply of food available and like the nesting birds, are protected from predators by the plant coverage.

MINI MEADOWS

As farming methods have changed over the years, the presence of meadows and pastures has become more and more rare. This has had a

negative effect on the populations of the wildlife associated with this type of habitat.

As a result alternative habitats such as roadside verges have become important refuges for many plants, insects and animals. These sites have many of the same characteristics as meadows and pastures and can therefore be used by wildlife as a substitute.



A roadside verge with wildflowers blooming

Many farmers deliberately leave field margins uncultivated and these areas as well as field corners where the plough and combine harvester cannot reach survive as unimproved grassland areas for wildlife to live in.

LOOKING TO THE FUTURE

Now you have read this booklet you can get out in the open and start recording the countryside and the wildlife that it is home to. Completing the survey form at the back of this booklet is a great way of helping local conservationists to identify and conserve remaining wildflower meadows.

Local Wildlife Sites are important areas of rare, local and declining species and are the best examples of typical habitats in Leicestershire and Rutland. Once a site has been identified as a Wildlife Site it receives protection in local plans against unsuitable development. An unimproved grassland site can be identified as an important Local Wildlife Site if a certain number of indicator species can be found in it. These indicator species vary according to the type of grassland e.g. neutral, acidic, limestone or wet.



An area of unimproved grassland is an important Local Wildlife Site if it meets the following criteria:

Neutral grassland

- Area of grassland at least 2500 square metres or 200 metres of linear habitat
- At least 10 species from the following list present:

Agrimony
Autumn hawkbit
Betony
Bulbous buttercup
Burnet saxifrage
Birdsfoot trefoil
Devil's-bit scabious
Field scabious
Field woodrush
Great burnet
Harebell
Knapweed
Lady's bedstraw
Lady's mantle
Meadow buttercup
Meadow saxifrage
Meadow sweet
Meadow vetchling
Ox-eye daisy
Pepper saxifrage
Primrose
Red clover

Rest-harrow
Rough hawkbit
Sedge
Sorrel
Tormentil
Yellow rattle



Betony

Wet grassland

- Area of grassland at least 2500 square metres
- Area seasonally flooded
- At least 6 species from the lists above and below present:

Common fleabane
Common meadow rue
Cuckoo flower
Greater birdsfoot trefoil
Lesser spearwort
Marsh arrow-grass
Marsh bedstraw
Marsh marigold
Marsh thistle
Ragged robin
Rush

Sedge
Sneezewort
Tubular water dopwort
Wild angelica



Cuckoo flower, locally known as lady's smock

Acid grassland

- Area of grassland at least 1000 square metres
- At least five of the following species present:

Bilberry
Bitter vetch
Common bent
Cross-leaved heather
Harebell
Heath bedstraw
Heath grass
Heath rush
Heath woodrush
Ling

Mat grass
Sheep's fescue
Sheep's sorrel
Tormantil
Wavy hair-grass



Harebells

Limestone grassland

- Area of grassland at least 2500 square metres or 200 metres of linear habitat
- At least five of the following species present:

Agrimony
Autumn gentian
Bee orchid
Blue fleabane
Burnet saxifrage
Clustered bellflower
Eyebright
Field scabious
Greater knapweed
Hoary plantain
Kidney vetch
Knapweed broomrape
Marjoram



Ploughman's spikenard
Purging flax
Pyramidal orchid
Rest-harrow
Salad burnet
Small scabious
Thyme
Tufted vetch
Viper's bugloss
Yellow-wort



Broomrape

Finally, to cover intermediate or mixed grassland types, a combination of ten species from any of the lists, in an area of 2500 square metres or 200 metres of linear habitat, will also qualify an area as an unimproved grassland Wildlife Site.

STAY SAFE!

Meadows and pastures are private land and should never be entered without permission from the landowner. If you want to carry out a survey of a field you must contact the farmer. If you are not sure how to get in contact with the landowner, the local Parish Council may be able to help and give advice, or you could try the local farmhouse.

REMEMBER:

- Never go out surveying on your own and make sure someone knows where you are.
- If you are taking children with you, be sure to keep them in sight at all times.
- Beware of any livestock that may be near by.
- Do not disturb or remove any of the wildlife that you find.
- Make sure you wear suitable outdoor clothing that will keep you both dry and warm if the weather conditions change.

- Always wash your hands before eating or drinking, after carrying out a survey.

TAKE A CLOSER LOOK

As well as filling in the survey form, you could also record any sites you find in other ways. You could take photos of wildlife which may include wildflowers, insects and animals, or anything that catches your eye. If you enjoy art you could spend some time creating paintings of what you find and you could make a scrapbook of everything you produce. You could also keep a nature diary of a specific meadow or pasture, and record either in words or pictures (or both) the changes that occur throughout the year.

You could find out more about a field or area by visiting your local record office. Here you could look on old maps to see if you can identify your field and find out who the landowners were in the past.

You may also discover that the field has a name connected to a special feature that might still be there today.

If you do make an investigation into the meadows and pastures in your area, your local parish council may be interested in it and you could offer to display any material you produce in the village hall. By showing other people what is special about your parish, you may encourage them to become involved in protecting the wildlife and heritage of your area.



Flowering Fields Survey Form

Your Details:

Name:

Address:

Postcode:

Date of survey:

Grassland Details:

Parish:

OS Grid reference (if known):

General location:

Land owner and details (if known):

Surrounding landuse and habitats:

Tick the box which describes the type of boundary surrounding the area

Hedgerow Fence Wall

Ditch Trees Road

Briefly describe the adjacent land use (e.g. arable field / woodland / farmhouse)

Evidence of management methods

Used for hay making

Grazed by livestock

Other (please specify)

Sketch map of the site:

Wildlife present:

Plants

Number of indicator species form the Wildlife Site identification lists:

Insects

Birds

Other

Any further information:

Thank you for completing this survey. The information you have found will be entered on to our ecological database, which will help us to protect the unimproved grasslands of Leicestershire and Rutland. Feel free to photocopy the form if you wish to carry out further surveys.

Please return the completed survey form to:

**Natural Life Outreach Team
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