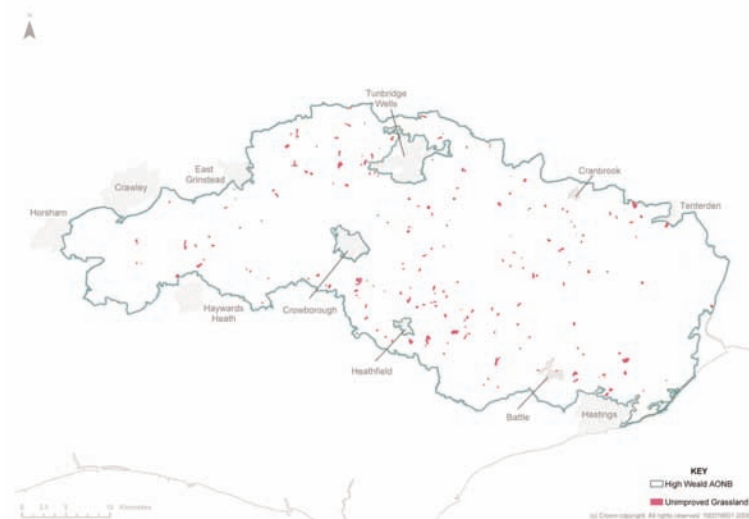


Meadow Grassland in the High Weald Landscape

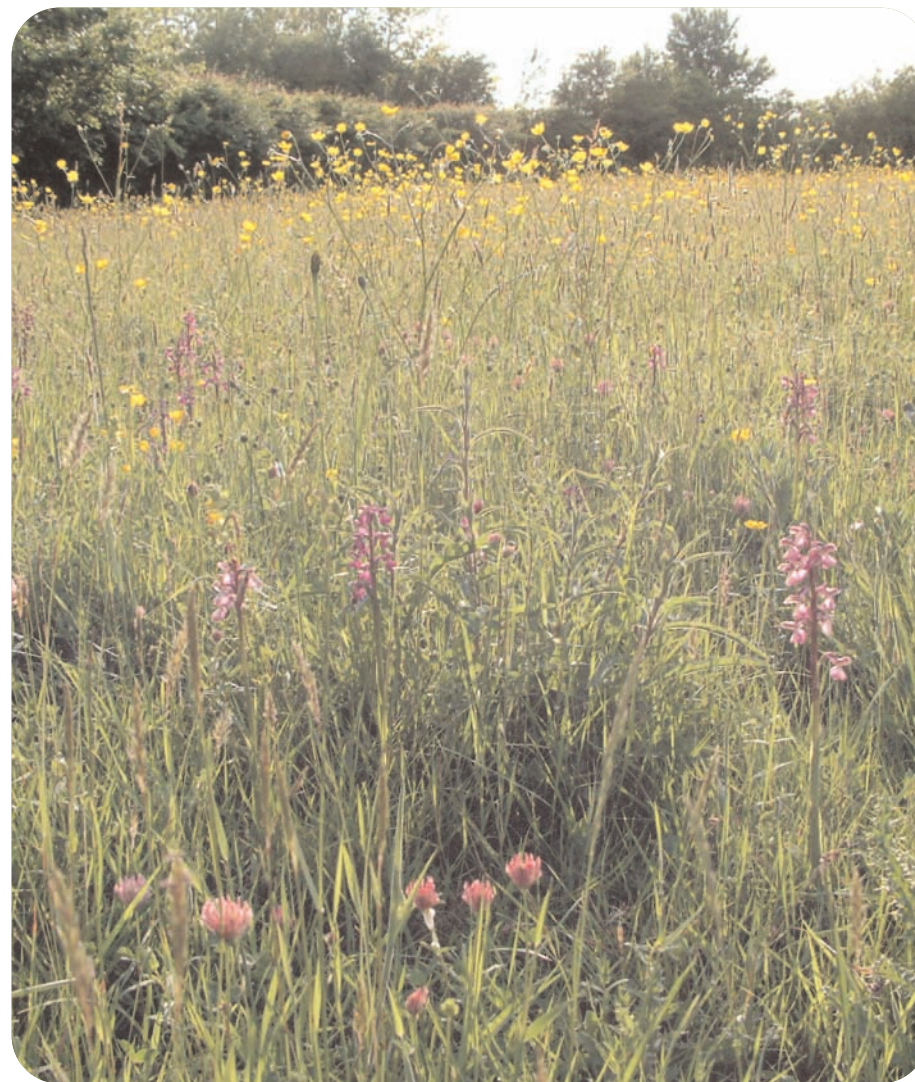
Grassland covers more than half of the High Weald it is its sheer abundance that clothes the area in green all year round. A small percentage of these grasslands are 'unimproved' or wildflower grasslands and are glorious places in summer, alive with colourful flowers and butterflies and literally buzzing with the activity of bees, grasshoppers and other creatures. These grasslands represent an irreplaceable and vanishing aspect of the Weald's heritage.

Number, distribution and loss

Species-rich grasslands occur on the area's neutral and acid soils. There are approximately 305 unimproved meadows sites (655ha) and 317 semi-improved grasslands sites (443ha) scattered throughout the High Weald. The largest complex of unimproved meadows is 26.3ha, the smallest unimproved grassland less than 0.2ha. Nationally, over the last 50 years, 97% of unimproved grasslands have been lost. Those that have survived tend to be small, fragmented and hard to access (a factor contributing to their survival).



Distribution map of unimproved grassland across the High Weald



Meadow Grassland

Use and management

Species-rich grasslands have evolved from ancient origins and been maintained by a continuity of traditional low intensity grazing (pastures) or hay making (meadows) by generations of High Weald farmers – traditionally managing small, mixed, livestock enterprises – a reflection of the generally poor quality of the land and the humble origins of the farms.

Today much of the High Weald grassland has been improved through ploughing and reseeded or the use of fertilisers and herbicides. This 'improved' grassland typically contains about six grass and flower species, 'semi-improved' grassland may contain around 10-15 species whereas unimproved, flower-rich grassland can support up to 50 grass and flower species. In the last 20 years there has been an enthusiasm for creating new wildflower grasslands. If establishment is successful they are classified as 'semi-improved' and typically contain up to 10-15 species.

Beef, sheep and dairy cattle are the main products sustaining the grassland mosaic of the High Weald. Most modern breeds do not survive well on the unimproved grasslands. However native breeds of sheep and cattle can still be found within the Weald, and many are making a come-back. The most common are the conker-coloured Sussex Cattle, South Downs sheep (now classified as a rare breed) and Romney Marsh sheep. Many of these, as well as providing tasty meat, are also important conservation graziers. Unlike fussier newer breeds which require intensive feeding regimes, traditional breeds are happy to graze and thrive on the poorer vegetation which characterize unimproved grassland.

Biodiversity value and current threats

Unimproved grasslands are ancient habitats that include scarce and attractive 'indicator' species such as Dyer's Greenweed, Pepper Saxifrage, Green-winged Orchid, Betony, and Sneezewort. Semi-improved grasslands still retain a good number of grasses and valuable wildflowers such as Red Clover, Bird's-foot Trefoil, Ox-eye Daisy and Knapweed – species that are important for Bumblebees and many other insects. Under traditional management semi-improved and newly-created grasslands have the potential for supporting more species.

Tussocky grassland suits Barn owls as it is home to their favourite food, the field vole and is particularly valuable if there is a hollow tree or barn nearby for the owls to nest in.



Meadow grassland in the High Weald

The current threat to the survival of wildflower grasslands is the lack of traditional management - grazing, if used as pasture, or hay-making if they are meadows. Unmanaged wildflower grassland, like heathland, soon reverts to scrub. Inappropriate grazing e.g. by horses leads to poaching and weed problems. With the recent decline in farm incomes hitting small farms particularly hard, farming as a way of life is disappearing. Land sales and farm fragmentation have become commonplace. Many grasslands are no longer part of a farmed system, instead they are owned and managed by non-farmers with a key threat being not just the difficult economics but a lack of understanding and skills to maintain management.

How do I know if I have meadow grassland?

Meadow grassland is a type of semi-natural grassland that forms on a relatively heavy soil that is neither too wet or too dry. A meadow is grassland cut for hay and generally grazed after the hay has been removed. The productive soil conditions account for the tall vegetation often associated with meadow grasslands compared to low-lying vegetation on chalk and acid grasslands (where the soil is poorer). Meadow grassland is often found in valley bottoms and within enclosed field systems, but can include overgrazed horse pasture, lush fields and even lawns!

Meadow Grassland Management

What type of meadow do I have?



Traditional unimproved meadow grassland

'Unimproved' meadow grassland is grassland that has not had significant amounts of fertiliser added but has been subject to traditional management such as being cut annually for hay. It is characterised by a colourful mix of finer grasses and wildflowers and has become a rare and fragmented habitat. Any area of 'unimproved' meadow grassland is considered rare and it is important to continue to manage it sympathetically.



Improved meadow grassland

'Improved' meadow grassland is where the land has been sown for agricultural or recreational purposes and fertilisers applied. It normally has a poor variety of species, often dominated by ryegrass, and possesses dominant grass species. It is much more common than 'unimproved' grassland. If left uncut or ungrazed it appears as thick lush growth of a deep green colour during the summer. During the winter it will remain a deep green but looks uniform, sometimes with thick tussocky growth even if grazed or cut.

'Semi improved'

Semi-improved grassland is in-between improved and unimproved! It may have been ploughed in the past and had some artificial fertiliser added. They have reduced species diversity but retain a number of native grasses and wildflowers and can therefore still be of high conservation value.



Scrubbed grassland

Scrub can give an unkempt look and is normally a sign of under grazing. It can however be extremely valuable for wildlife but is not as valuable as the rare unimproved grasslands. Clumps of scrubby growth are most obvious during the summer, thickening over the years to form young woodland. It is often associated with tall grass growth, but may sometimes be found on heavily grazed grassland where the shrubs have become too big for animals to graze.



Marshy grassland

Often found close to a river, but can be found anywhere where the High Weald's abundant springs come to the surface or there is poor drainage. Grassland may not appear marshy during the summer, but with high rainfall in the winter, conditions may become wet underfoot, and standing water may sometimes be seen. Can be extremely valuable for wildlife, and may also signify the site of an historic water meadow.



Horse Paddock

Horse paddocks are typically grazed with close cropped grassland, and often bare earth. Scrub and trees often remain, but with no low growth. Problem species such as nettles, docks and ragwort can sometimes survive, and give the appearance of a very degraded landscape if the land is not sympathetically managed. Horse grazing, with suitable stocking rates can be a valuable grassland management tool.



Lawns

Lawns vary considerably in nature. Many recently laid lawns are of one of two species of grass, and are of little interest for biodiversity (see below) or landscape. However, older lawns can often hide a considerable population of wildflowers despite regular cutting. Those that have been converted from old meadows can often have a show of sometimes uncommon meadow plants if left uncut for a few weeks.

What is biodiversity?

Abbreviated from biological diversity, Biodiversity is a term now widely used to describe the variety of all life forms (plants and animals) and the interactions between them and the area they live in.

How do I decide what is the best type of management for my meadow?

The management of grassland is essential, otherwise over time, coarser vegetation will grow and the more fragile species will disappear. In a process called succession, this will lead to scrub dominating and a loss of the traditional grassland. The following pages will help you manage and enhance your meadow grassland.

An important note about SSSIs

Natural England will have notified you if part or all of your land is within a Site of Special Scientific Interest (SSSI). Owners of SSSIs must give Natural England (contact in www.highweald.org [guidance]) written notice if any operations listed in the original notification are likely to damage the features of special interest.



c Countryside Agency - Peter Greenhalf

Caring For and Maintaining Meadow Grassland

What factors should I consider before I decide on the best management for my grassland?

Current state of site

- Are grasses and flowers struggling to grow, or is growth strong and scrub beginning to take over?
- What are the dominant types of plant including height, thickness and extent of cover? Are weeds such as dock, thistle and bramble a problem? *Strong weed growth is often a sign that management is not right on a site.*
- Are there any rare wildlife species on the site? *Your county Biological Record Centre can provide help (see www.highweald.org [guidance]). Management should aim to maintain any rare species.*

Past management

- How has the site been managed in the past? Has this been done by grazing or cutting? *It is often best to continue previous management. Plants and wildlife are likely to have adapted to this. For example, long term grazing may be suggested by the presence of large ant hills.*
- Is the area 'unimproved' or 'improved' meadow?
- Farm records, historical information and aerial photographs could be used to establish previous management.

Current management

- Is the site currently being managed and what form does this take? *Knowing what the current management is and the current state allows you to make an informed decision on whether to change it.*
- If grazed, what type and how many grazing animals are used, and for how long?
- If cut, when is the grass cut, what machinery is used and is it cut for hay or silage?

Boundaries to the grassland site

- Are there crops or livestock in neighbouring fields? Could fertiliser drift from these fields be a concern for the site? *Problem species can establish if fertiliser gathers in one area.*
- What is the location and condition of the boundaries such as fences or hedgerows? *Secure boundaries are needed for livestock.*
- How easy is it to access the site for livestock and machinery?

Reasons for management

- What are your aims? Financial, for nature or landscape conservation, grazing land or a combination? *This will vary how you manage your land.*
- Ask yourself what you actually want from the land, keeping in mind meadows are irreplaceable habitats.

Costs

- Consider any financial constraints that you may have.
- Do you have access to livestock/machinery?

Monitoring

- How has the changes in management affected your meadow?
- Record any changes in the plants growing over time following changes in management.

Local conditions

- Consider all local conditions.
- Note location of areas of wet ground, ponds, ant hills etc.
- Is there a water supply to the site? *Animals, particularly cattle, need a constant supply of drinking water.*

- Climate (rainfall & temperature). These factors will influence stock to use. Is the area too wet for heavy livestock as muddy ground will result?
- Slope and aspect. Is the site on a slope? Is it possible for livestock to graze this area? *If vegetation growth is greater on a south-facing slope, more livestock may be needed.*
- Drainage. Is drainage on the site good or poor? Does the site become waterlogged?
- Size of site. This will influence the cost of grazing and quantity of livestock required.



Cattle are useful for grassland restoration

I. Meadow Grassland Management by Grazing

Grazing is often the most common and most effective choice of management. It is a gradual process, maintaining species richness and promoting the 'traditional' look of grassland in the surrounding landscape. It can be very useful in restoring neglected areas to meadow or to conserve a site that just requires minimal grazing such as one with archaeological features. Grazing should remove the year's grass growth to ensure the area is maintained as meadow.

Certain factors need to be considered when opting for grazing as a management technique:

- **Aims of grazing:** Are you aiming to conserve wildlife and the landscape or is it for a financial return? Grazing for conservation landscape objectives does not generate as good a financial return due to the reduced stocking densities required. However, grants such as Environmental Stewardship do compensate for this gap and can make grazing for conservation objectives viable financially.
- **Local conditions:** Is grazing suitable for my site? If your site has been traditionally managed for a long period by cutting, changing to grazing could cause many species to be lost and have an adverse effect on the landscape.
- **Size of the area to be grazed:** Larger sites obviously need larger numbers of livestock, whereas it may be awkward to find a small number of animals for small sites. Larger sites can perhaps be split and grazed in rotation.
- **Stock type and availability:** Careful consideration should be given to the type of animal that will graze your meadow, as each has different effects on the vegetation. If you do not have your own animals, where can you get some?
- **Time of grazing:** Now you know what type of plants and wildlife can be found in your meadow, when is the best time to graze it to ensure their populations are maintained?



A stock proof fence is essential for grazing

Every area of meadow grassland will be different from the next, and therefore professional advice is often needed. However, these notes provide a useful starting point before seeking advice.

Which animals are most suitable for grazing?

Each animal will have a different effect on the grassland due to varying feeding habits. Choice will depend on what you want from your site, financial constraints and availability of livestock.

Remember mixing the type of livestock used could be most feasible for your site. This may assist financially as well as benefiting the site from a landscape and biodiversity point of view. If you are unsure which livestock type would be most suitable for grazing, you can obtain further advice from the organisations listed at www.highweald.org [guidance].

What is a sward?

A sward is simply referred to as 'a grassed area composed of short grasses giving continuous cover, with no trees or shrubs present.' The sward height describes how tall the grass actually is.

Sheep

- Create a very short sward.
- Eat low lying grassy plants but will avoid taller plants.
- Can be used on slopes.
- Easiest of all grazers to manage – need a fence or stock-proof hedgerow.
- Need less water than cattle.
- Not useful for restoration as prefer shorter grassy plants than taller plants.

Horses

- Harder to manage than sheep or cattle.
- Not appropriate for restoration as do not eat plants such as ragwort.
- Dung is dropped in one area leading to weeds.
- Consider grazing horses with sheep or cattle to create a varied sward.
- Create areas of tall vegetation and bare patches.
- Can eliminate some plants and leave others.
- Can cause bare patches leading to weeds such as thistle and dock.

Cattle

- Create areas of tall and short vegetation.
- Eat low lying and taller plants.
- Can be used on slopes.
- Easy to manage using a fence or stock-proof hedgerow.
- Need a lot of drinking water.
- Can be used for restoration.

Goats

- Create a varied sward.
- Prefer scrub and taller vegetation than short grassy plants.
- Difficult to contain on site.
- Very useful for restoration as eat small trees and scrub plants including gorse and hawthorn.

When should I graze my meadow grassland?

The aim of grazing is to remove the grass growth of the year by light grazing. Light grazing over a longer period is favoured rather than heavy grazing over a shorter period, as it ensures that flowers can set seed and that certain species will not be eliminated by intense grazing. Light grazing for at least 10 weeks a year between April and November is recommended, aiming for a mixture of sward heights by the end of the summer. This will encourage a range of species of flora and fauna to inhabit the grassland and also enhance the landscape value of the grassland. The preferred time of year for grazing varies with each site, depending on local conditions and type of vegetation present, but professional advice is recommended.

If wildlife and landscape objectives are the only concern for your meadow grassland, graze the site briefly in spring and allow vegetation to grow, flower and seed during the summer, and follow with further grazing in September and October. If the site is solely to be for livestock production, you may require the site to be grazed all year round. If this is the case a lighter stocking density should be considered to ensure the site does not become over-grazed and lose its landscape value. As a very general rule, meadow grasslands should be grazed at a rate of 1 cattle or 4 sheep per hectare/year but this will vary considerably and further advice will be needed.

Where can I get livestock?

If you do not have your own livestock to use then there are a number of options available for example a neighbouring landowner may possess stock and be willing to graze them on your grassland. The RAMSAK Conservation Grazing Scheme is a useful alternative for those that do not have immediate access to livestock or you can contact “sheepkeep” through the High Weald AONB Unit website. Contact details can be found at www.highweald.org [guidance].

2. Meadow Grassland Management by Cutting

When should I cut rather than graze meadow grassland?

Cutting or mowing can be a very efficient and effective way of managing grassland. However, it has reduced benefits for nature conservation because it is a sudden and unselective form of vegetation removal, resulting in the instant removal of wildlife habitats. Cutting can be preferable where it has been the traditional form of management in the past and the vegetation and wildlife communities have formed around this regular management.

Cutting for hay is often the traditional method of management to produce winter feed for livestock. Cutting 2 – 3 times a year for silage, usually between May to September, has become a more popular choice of management of grassland due to a greater economic return. Cutting for hay or silage will influence the frequency of cutting of grassland with both having different effects on nature conservation and the landscape value of the grassland.

Cutting is often useful in an area that is impossible to fence for livestock. From a nature conservation point of view, cutting for hay is the preferred option. It is better for biodiversity than cutting for silage as there is only a single cut a year. This allows vegetation to flower and set seed, compared to three intensive cuts a year for silage.

Hay should be cut in summer late enough in the year to allow plants to flower and set seed. Cutting after mid July is recommended, but if production of winter feed for livestock is not important then cutting in late August or early September is preferable.

Even with hay cuts an occasional spring cut may reduce the dominance of certain species such as false oat grass.



Meadow cut and hay baled

What is silage?

Silage cut is a fermented plant material that has increased taste and nutritional value for livestock.

What is my aim when cutting meadow grassland?

Ideally, you are primarily aiming to maintain traditional meadow grassland in the landscape of the High Weald AONB, maintaining as wide an array of plant and animal species as possible. This can be achieved by cutting once a year on a rotational basis and is much more favoured than cutting a whole area three times a year (as is the case with silage production). When cutting, leave an uncut area several metres wide along one edge of the meadow. This acts as a refuge for beneficial insects to repopulate the meadow as the vegetation grows again and important for mammals creating a safe corridor.



What type of machinery can be used?

The type of machinery to use will again be influenced by the size of the site, local topography, financial constraints and accessibility to machinery. Tractor mounted machinery can be used to cut the grass and collect the cuttings which is often the most suitable option for larger sites. Flails can be used although

these can be very damaging to mammal and reptile populations and can make collection of cuttings difficult. A strimmer or pedestrian motor scythe is suitable for small areas or ones that are difficult to access by larger machinery. Both are available from tool hire shops.

One option if you do not have access to machinery, is to contact RAMSAK, an agricultural machinery ring in Kent and Sussex (see www.highweald.org [guidance]).

In all cases, cuttings should be removed from a site to prevent the area becoming rich in nutrients. If not, the cuttings decay overtime and allow dominant types of vegetation such as bramble and nettles to develop and engulf the site. This can reduce the landscape value of the site as well as reducing the number of species of flora and fauna found on the site. Removal by machinery is best for larger sites whereas smaller sites can be raked manually.

What should I do with the cuttings?

The disposal of cuttings needs to be considered early on before cutting is undertaken. Cuttings are ideally used as a feed for livestock or taken away and composted, the latter often being the best option on smaller sites. However, disposal on site may be needed. If this is necessary, use a compost area of low biodiversity value and where nutrient accumulation will not cause problems. Although cuttings will decay very quickly, vigorous species such as nettles, docks and thistles will readily establish and may cause problems.



Cutting using a motor scythe

3. Restoring Meadow Grassland

Is it possible to restore my site to meadow grassland?

It is possible to restore an inappropriately managed grassland site, or one that has been left unmanaged for some time. However, it does require a little effort and you should therefore seek specialist advice, particularly if you are considering restoration on a large site.

Key points that will help you decide if restoration could be suitable for your site.

- Assess the current landscape value of the site. Does it fit in with the character of the area (see earlier)?
- Assess the current wildlife value of the site. Are there particular species that need conserving and competitive species that need controlling? Are there rare species present that rely on the current habitat that could be lost if restoration is carried out?
- Look into the history, plants and wildlife of the site and the reasons for it being in its current state. This will indicate the likely success of future management and which technique to use.
- Can appropriate management such as grazing or cutting be maintained once restoration is complete?
- The type of grassland the site may support. Is it neutral, acid or meadow grassland? Is it feasible and worthwhile turning it into meadow grassland or is managing the site for acid or neutral grassland more appropriate? If you attempt to restore a habitat type that is not suitable for the site it is likely to fail.
- Consider neighbouring fields, as fertiliser drifting onto meadow grassland could be an issue for the site.



Manual hay raking

Problems with poorly managed grasslands:

- **Thatch build-up:** Partially rotted vegetation creates a mat just above ground level preventing new plants from establishing and growing. Chain harrowing is the answer here. This is effectively large scale raking using a tractor. It can cause damage to small mammals and birds and therefore should not be done during the bird nesting season (March to July).
- **Problem species:** Includes ragwort, creeping thistle, docks and nettles. These species establish very quickly and can dominate an area. Although most weeds can be cut, ragwort needs to be pulled out or chemically treated to prevent regrowth.
- **Scrub encroachment:** As a general rule of thumb, if scrub has become so well established that only bare ground is found beneath, it is not appropriate to restore the site simply by its removal. Problem species such as creeping thistle will become established, and meadow vegetation will not return. Restoration is still possible but you should seek professional advice. If ground under the scrub has low grassy vegetation, converting the site to grassland may be feasible by removing the scrub. This can be undertaken by cutting, or in some areas by digging up the whole plant. It should however only be undertaken in the winter. Do however bear in mind that scrub can be a beneficial habitat in its own right, and there may be situations when it is better to retain some or all of it. For further advice on scrub management see 'The Scrub Management Handbook: Guidance on the management of scrub on nature conservation sites' available on the Natural England Website www.naturalengland.org.uk.
- **Overgrazing:** results in a very short sward and bare patches of ground across the site. Weeds may start to grow here as other plants find the conditions hard to grow. Lowering the number of animals on the site is the initial remedy, but problem species may establish themselves and need to be controlled.



Ragwort

4. Creation and Enhancement of Meadow Grassland

It is possible to re-create meadow grassland on a site but it can be a major undertaking. However, due to the complex nature of this, it is advised that professional advice be sought at an early stage. In all cases, ongoing management by cutting or grazing will be needed (and should be looked into in the initial stages).

The following factors are an important consideration if you are considering creating meadow grassland:

- **Native origin seed.**
Sowing a seed mix suitable for the soil type is essential to obtain the right type of grassland and to get the best establishment. Seeds used should only be from native species and seeds collected from local stock are preferred. Using local seeds will increase the likelihood of successful restoration and maintains the local variation of plants.
- **Helping to reduce fragmentation.**
Re-creating meadow grassland could be appropriate if it links existing meadows in the High Weald.
- **Appropriateness to the landscape.**
It is important to look at the existing resource and is especially beneficial if it links with other meadow grassland.



Weald native origin seed being harvested for creation/enhancement projects.



Meadow grassland in the High Weald

Frequently Asked Questions

How long do I need to manage the grassland for?

Left alone grassland will eventually turn to scrub and so it is important it is managed regularly to maintain its character and species diversity.

How long will it take to restore my site to meadow grassland?

It can take at least 2 years to establish a sward and then annual management for many years before a species rich meadow is established.

How can I tell if my management regime is successful?

By monitoring the composition of the grassland from year to year you can assess whether a diversity of plant species is increasing and whether any enhancements are required or changes in management.

I have just moved into the area and do not know anything about managing land.



Species rich wildflower meadow

Don't worry! The Weald Meadows Initiative and Farming and Wildlife Advisory Group (FWAG) and others have actively been encouraging both farmers and non-farming landowners to enhance and create wildflower grasslands in the High Weald. The organisations listed in www.highweald.org (guidance) are available for further advice on any aspect of land management.

Where can I find more information on meadow grasslands?

There is a lot of literature available on meadow grasslands in books, specialist journals and on the internet. Suggested publications include The "Lowland Grassland Management Handbook" edited by A Crofts and R G Jefferson; and "Farming and Wildlife - A practical management handbook" by John Andrews and Michael Rebane (ISBN 0903138670). The Weald Meadows Initiative pages on the High Weald AONB Unit website can help provide further information on meadow grassland.

Are grants available to help with meadow grassland management?

There are limited grants available to introduce appropriate management of meadow grassland and to encourage their creation:

Environmental Stewardship

Run by Natural England, there are two tiers to the scheme; Higher and Entry Level Scheme with financial payments for work that benefits biodiversity and landscape. For further details please contact Natural England (in www.highweald.org [guidance]).

Natural England (formerly English Nature)

In certain cases, funding may be available from Natural England for management work on SSSIs. Refer to www.highweald.org (guidance) for more details.