



Management of Chalk Grassland



A prime example of chalk grassland – Kent Wildlife Trust’s reserve at Fackenden Down © B.Hukins

This leaflet is designed to give owners of chalk grassland some general recommendations on how to manage their land and assumes that the primary objective is to manage the land for nature conservation purposes.

Chalk grassland, one of Kent’s most threatened habitats

In Kent, there are several types of species-rich grassland, which are closely linked to soil and geology: acid grassland, neutral grassland and chalk grassland. Chalk grassland is found mainly on the North Downs, although occasional patches occur on the East Kent coast. It is one of the richest habitats of Western Europe, containing a great diversity of plants and animals. It is now very rare and fragmented, and is of international conservation importance. Kent holds 5% of the UK resource (there are approximately 1900 hectares in the county (ARCH Kent Habitat Survey 2012)) and the UK holds 50% of the world’s surviving old chalk grassland resource.

Up until the Second World War, traditional grazing practices ensured that grasslands were grazed at a low intensity, wildlife-friendly manner, resulting in habitats which were botanically very diverse – as many as 40 plant species per square metre could build up in the vegetation (or sward, as it is sometimes referred to) over many years or even decades.

From the 1940s onwards, more efficient farming techniques such as better drainage and chemical inputs, together with farming subsidies, all contributed to change the way our grasslands were used: many areas were either ‘improved’, ploughed up for crops, or left un-grazed and gradually taken over by scrub and woodland. Other areas were lost to development, quarrying, road construction and tree planting.

Since then, traditionally managed wildflower-rich grasslands such as neutral, acid and chalk grasslands have declined nationally by 97%; their disappearance is thought to have led to the drastic decline of many species including bumblebees, butterflies, farmland birds and wildflowers.

This advice sheet contains information about the following topics:

- what is chalk grassland and the extent of this habitat in Kent
- flora and fauna associated with this habitat
- choosing a management regime for your site
- increasing the number of plant species
- choosing livestock and finding a suitable grazer
- protected species
- dealing with ragwort and other problem plant species
- management of scrub
- references and further reading
- further advice



Lady’s bedstraw, agrimony and knapweed © Kent Wildlife Trust



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Adonis blue butterfly © Kent Wildlife Trust



Wart-biter bush cricket, declared extinct in 1975, re-introduced by KWT to Lydden TE in 1993 © Stephen Davis



Adder © Dr Lee Brady



Monkey orchid © G.Hitchcock

Flora and fauna associated with chalk grassland

Chalk grassland supports a number of rare plants and animals, many of which have unique associations with this habitat and cannot thrive, or survive, elsewhere. The fragmentation of many areas of grassland has resulted in populations of a number of species being isolated and prone to local extinctions.

The wildflower species listed below provide a rough guide as to plants which are indicative of unimproved, species-rich chalk grassland, but botanical diversity will depend on many factors including past management, drainage, aspect and stocking density.

Grass species include quaking grass, sheep's fescue, meadow-oat grass, crested hair grass, tor-grass, and upright brome.

Wildflower species include betony, bird's-foot trefoil, carline thistle, clustered bellflower, common rock-rose, cowslip, Deptford pink, devil's-bit scabious,

dropwort, eyebright, fairy flax, field scabious, gentians, greater knapweed, hairy violet, harebell, hoary plantain, horseshoe vetch, kidney vetch, lady's bedstraw, marjoram, milkworts, mouse-ear hawkweed, many types of orchid, ox-eye daisy, restharrow, rough/lesser hawkbit, salad burnet, small scabious, squinancywort, stemless thistle, thyme-leaved sandwort, wild basil, wild thyme, yellow-wort and many more.

Other species associated with chalk include juniper, now only found in a few sites in Kent, and also a number of lichens and mosses.

Ground-nesting birds such as skylarks and meadow pipits will use this habitat unless it is too heavily grazed or the site is dominated by trees and tall scrub.

Reptiles such as adder and viviparous lizard are frequently found in this habitat and like to bask on the open, warm ground (areas with short vegetation and patches of bare ground warm up faster than taller grassland areas); however, they also need nearby

cover such as scrub and tall grass for shelter from predators.

Many species of invertebrate lay their eggs on certain species of grass or wildflower: for example, the caterpillars of the chalkhill blue and Adonis blue butterflies only feed on horseshoe vetch, itself only found on chalk grassland. Solitary bees and wasps make use of the bare chalk to create burrows and lay their eggs.

Choosing a management regime for your site

Under-grazing, or no grazing at all, results in grassland becoming dominated by coarse grasses and scrub, with the eventual loss of the characteristic grassland species. Overgrazing also brings its own problems, although very short grassland and bare patches of chalk can add structural diversity to the grassland. Management of these grasslands is therefore very important to maintain their species diversity.

Considerations to bear in mind before you decide on a management regime:

- if you have the option to get the site grazed, then this is preferable to not grazing the site at all or to using mechanical cutting, which creates a very uniform sward
- if your site is very small, you won't



Stemless thistle © Kent Wildlife Trust



Late spider orchid © D.Nicholls



Autumn lady's tresses © Selwyn Dennis



Grazing at Dover Castle © Kent Wildlife Trust

be able to achieve the same diversity of micro-habitats as you would on a larger site, where grazing and cutting can be rotated and cutting heights varied from year to year, thus creating mosaics of short grass, taller grass, and tussocky grass

- find out what species are already on the site: there is no point losing one rare species, such as the black-veined moth (a species which likes tor-grass dominated, herb rich, tall grassland) in order to create habitat for another rare species
- results can vary considerably depending on where your grassland is located: shallow, chalky soils on a steep slope will respond differently to deeper chalk soils in a valley

Grazing:

- where possible, exclude livestock from May to late August. This allows most plants to set seed and invertebrates to complete their lifecycles. Graze from September to December, depending on how wet the land is, and aim for a sward height of 5cm/2 inches (but see comments above regarding micro-habitats). Do not overgraze.
- use spring grazing in April/May where necessary to control scrub and other coarse vegetation: this is the period when the livestock are most likely to tackle bramble and woody

growth. Spring and summer grazing is more important where chalk grassland restoration rather than maintenance grazing is required

- bear in mind that rabbit grazing will have an impact
- early or late flowering species (such as autumn lady's-tresses) will be affected by grazing at different times of year, so rotating the area grazed from year to year can allow these plants to set seed as well

Cutting/mowing:

- do a cut between late July and mid-September (the later you leave it, the more plants will get a chance to set seed); depending on the site, you may be able to get a contractor in to take a hay crop
- ensure all the cuttings are removed annually, or at least every two or three years. This is particularly important if no grazing is taking place, since any dead vegetation will smother any seeds trying to germinate and allow nutrients to build up on site.



Hay cut using a pedestrian mower – only suitable for small sites © Kent Wildlife Trust

- where possible, cut different parts of the grassland at different times of the year to create a more interesting mosaic

Do not apply artificial fertilisers or manure as this will increase nutrient levels, favour more competitive species and therefore damage the botanical interest of the site.

Re-creating chalk grassland

It is possible to re-create chalk grassland from cultivated land, although this is most likely to work where the soils are thin and low in nutrient. Further advice should be sought from Kent Wildlife Trust if this is an option you would like to consider.

Increasing the number of plant species

It can take several years for seed from desirable plant species to come in from adjacent land, assuming that you have species-rich grassland nearby. Should you wish to artificially increase species diversity, then we recommend introducing seed from newly cut hay (green hay). However, if you opt for introducing seed from seed mixes or young plants (plugs), then please ensure that the seed source is of native provenance (see Further reading). For small areas, buying single species seed packs is often cheaper than buying mixes; hand harvesting target species from neighbouring land is another option (with permission from the landowner).



Spreading green hay from another site onto a field which has been freshly cut for hay and then harrowed © Kent Wildlife Trust

Choosing livestock and finding a suitable grazier

If you have not kept livestock before or are considering asking someone else to graze your land, then you are advised to read our leaflet *A brief guide to choosing livestock for conservation grazing*. If you are getting an outside grazier in you may be able to charge a small fee for the grazing. This may depend on the site and how difficult or easy it is to graze; similarly with the hay cut, you may be able to get someone to buy the hay from you and bale it themselves or possibly get it cut for free if you do not need to keep the hay yourself.

Protected species

Some protected species such as breeding birds, great crested newts and reptiles, may use the site and you will need to take this into consideration before undertaking certain management work. If such species are likely to be present, seek advice from Natural England <http://www.naturalengland.org.uk/ourwork/regulation/wildlife/species/>

Dealing with ragwort and other problem plant species

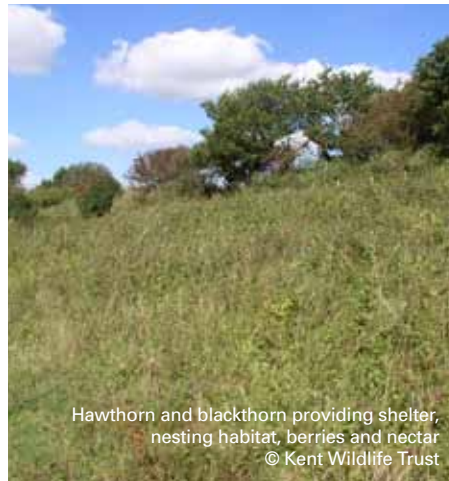
Plants such as ragwort, docks and thistles can be a problem. A major contributing factor to the presence of such species is the amount of bare and disturbed ground.

This often arises from nutrient enrichment, overgrazing, poaching, bonfire sites, or because a site has been reseeded in the past and contains a weed species seed bank (ragwort seed can remain dormant for up to 20 years). It is very important to ensure that there is a closed sward and this can be achieved by encouraging grasses to tiller (send out new plantlets).

- early grazing in spring can control invasive weeds. You can also do some light harrowing and seed with grass species which tiller fast (red fescue, perennial rye-grass, creeping bent, common bent, wavy hair-grass, sheep's fescue).
- do not apply herbicides unless strictly necessary
- see Further Reading

Management of scrub

If the site has not been grazed or cut for a while, scrub can start to take over. Scrub does provide good habitat for wildlife so you should ensure that you leave some blocks scattered about, at least around the edges, as they provide nesting sites for breeding birds, shelter for species such as invertebrates and reptiles, and berries for migrating and over-wintering birds. Please read the Trust's advice sheet *Scrub, its value for wildlife and how to manage it*.



Hawthorn and blackthorn providing shelter, nesting habitat, berries and nectar © Kent Wildlife Trust

Further reading and references

Kent Wildlife Trust Land Management Advice Series

Control of ragwort, thistles and other problem plants;
A brief guide to choosing livestock for conservation grazing;
Scrub, its value for wildlife and how to manage it;
Management of small pastures.

The Grazing Animals Project

(G.A.P.): downloadable publications and the G.A.P. discussion forum (Nibblers) cover a whole range of conservation grazing topics: http://www.grazinganimalsproject.org.uk/nibblers_archive.html

Natural England available to download from www.naturalengland.org.uk

- TIN038 & TIN060-TIN065
Seed sources and sward enhancement methods

Further information about suppliers of British wildflower seed:

- Flora Locale
<http://www.floralocale.org/>
- The Conservation Volunteers
<http://shop.tcv.org.uk/shop/>

Obtaining further advice

For further information, please contact the Trust's Land Management Advice Service by calling 01622 662012 or by emailing info@kentwildlife.org.uk



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