

Heathland in the Kent Downs landscape

Heathland is an internationally protected habitat that has declined dramatically since the 1800s. Only occurring in Northern and Western Europe, the 20% remaining in Britain is a significant amount and needs appropriate management to maintain it and reduce its fragility. Heathland is dominated by heather or gorse which is often found in upland areas (above 300m on unfertile soils which receive regular rainfall). However, heather is also found in small fragmented patches in lowland southern areas including Kent, referred to as lowland heath. 70% of Kent's 145ha of heathland occurs on just four sites – Dartford Heath, Blean Woods, Bedgebury Woods and Hothfield Common.

Over 80% of Britain's heathland has been lost in the last 200 years due to agricultural intensification, increasing urban development and afforestation. It is important that the valuable areas in Kent are retained and enhanced. Traditionally, heathland had a significant cultural value with traditional management such as livestock grazing, using gorse for firewood and cutting bracken for use as bedding for animals.

This active and appropriate management ensured heathland thrived benefiting a range of wildlife and vegetation. It is one of the most valuable habitats for wildlife particularly birds including the nightjar.

The importance of heathland for conservation and landscape has been recognised on an international level however a lack of appropriate and traditional management continues to contribute its decline.



Covert Wood, South Canterbury. Restoration of heathland by conifer removal

How do I know if I have heathland?

Heathland is a very valuable habitat offering a place for nesting, foraging and breeding for a variety of wildlife. It is generally found in lowland areas on acidic soils with low nutrients and a regular supply of rainfall. Due to these harsh growing conditions, only vegetation that has adapted to these conditions will survive. Heather is often the dominant and most common vegetation type, although some areas can be dominated by acid grassland. A well-managed heathland will have a mosaic of different vegetation including heather, acid grassland, bare ground, gorse and scrub. Many existing areas are often dominated by one of these types of vegetation due to a lack of traditional and appropriate management.

Current factors affecting heathland

- Encroachment by scrub and invasive plants e.g. bracken, rhododendron.
- Abandonment and neglect.
- Increasing urban development and sprawl.
- Increasing recreational pressure.
- Increasing acidity of the soil.
- Decline in traditional management techniques e.g. grazing.
- Inappropriate management.
- Agricultural intensification e.g. application of fertilisers.

An important note about SSSIs

You will have been notified by Natural England if part or all of your land is within a Site of Special Scientific Interest (SSSI). Owners of SSSIs must give Natural England written notice if anything listed in the original notification are likely to damage the features of special interest. Contact details for Natural England can be found in the Appendix.



Why manage heathland?

Heathland is a constantly evolving habitat which needs management to maintain it. Without management, vegetation such as gorse, bracken and scrub will engulf an area losing the valuable species on the site. Eventually larger trees invade with heathland vegetation disappearing and woodland taking over. As many areas of heathland have either not been managed or been overgrazed, much is now in an unfavourable condition with vegetation such as bracken and scrub dominating. Heathland in this state requires restoration to return it to a favourable state for wildlife, conservation and landscape. Traditionally, heathland was managed by grazing livestock and by cutting with hand tools. The specific management required will vary from site to site with each type of vegetation needing management. These guidance sheets will help you to decide the type of management your heathland needs and whether restoration management is needed.

Heathland management

Elements of heathland

Heather

Ling heather is usually the most dominant vegetation found on the dry heaths of Kent. Different ages of heather are important for different wildlife, therefore maintaining a mosaic is the crucial objective of any management. Heather begins to degenerate when it reaches between 25-40 years old, becoming less valuable for wildlife. As heather degenerates, invasive plants such as rhododendron and bracken will often take over.

Acid grassland

Acid grassland is a nationally protected habitat often found mixed among heathland. It is becoming increasingly rare in lowland areas due to agricultural intensification and lack of grazing. It consists of a range of plants such as grasses, herbs and lichens that thrive in acidic soils. Most remaining areas are unfortunately small and fragmented.

Gorse

A spiky plant displaying bright yellow flowers, gorse is very valuable for wildlife. Heathland nesting birds such as the Dartford Warbler and Yellowhammer rely on gorse to provide refuge from harsh weather. The long flowering period of gorse from early spring to early winter provides an important nectar source for many insects. Gorse can spread very quickly if left unmanaged and old gorse can pose a fire risk.

Bare ground

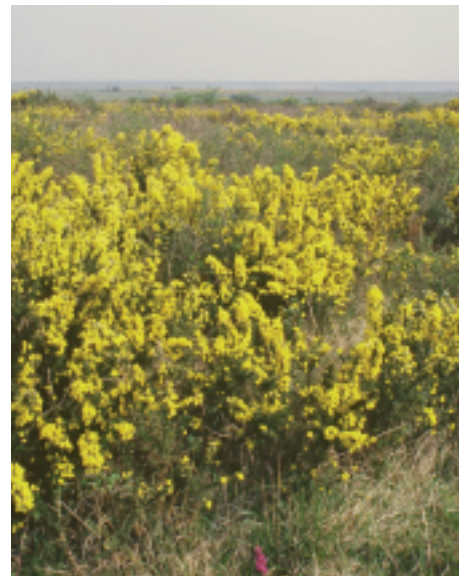
Bare ground can occur for a range of reasons including where vegetation has slipped down a steep slope, as a result of fire, disturbance by animals or due to strong wind. It is a very important part of heathlands as it provides warm areas needed by reptiles, as well as plants being able to seed more readily in these conditions. Bare areas may be maintained by local environmental conditions, such as rainfall or may need mechanical management.



Heather



Acid grassland



Gorse



Bare ground

Scrub

A large area of scrub on heathland can be a result of a lack of management. If left unmanaged, scrub will spread quickly and dominate a site, leading to a loss of valuable heathland vegetation communities such as heather and gorse. However, scrub on heathland can provide a beneficial habitat for specialist insects, birds and reptiles providing the scrub is a small well-managed proportion. Scrub found on the edge of heathland can provide a buffer to sources of pollution and also a wind break.

Birch

Birch trees produce a high abundance of seeds which can spread readily by the wind. Removing birch is an inevitable and necessary part of heathland management to ensure it does not become woodland. However in small amounts birch can be beneficial to heathland wildlife. Birch can be characteristic of the dry heaths in Kent.

Bracken

Naturally found in woodlands, bracken can be very invasive on heathland due to the appropriate soil and temperature conditions for growth. Bracken spreads by rhizomes (root network) and it can be a tough and expensive task to eradicate. Grazing cannot be used to manage bracken due to being unpalatable to livestock. A small proportion of bracken mixed among other vegetation on heathland can be beneficial for wildlife such as the Nightjar. What factors should I consider before I decide on the best management for my heathland?



Scrub



Birch



Bracken

Caring for and maintaining heathland

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

Assessing the current state of site

- Does the site have a good balance of heather, grassland, gorse and scrub or is it dominated by one type of vegetation?
- What percentage of the site is covered by bracken, scrub, rhododendron, birch? These types of vegetation can spread quickly and too much can cause a loss of desired heathland plants such as gorse, heather and grass. If one of these plants covers a large proportion of your site, then restoration management will be needed.
- Are there any rare wildlife species on the site? Kent and Medway Biological Record Centre can provide help here (see Contacts). Management should protect rare species of wildlife or plants.

Past management

- Has the site been managed in the past? Has this been done by grazing or cutting? It is often best to continue management that has been carried out in the past if it has allowed important species to flourish. Plants and wildlife would have adapted to this management.
- Farm records, historical information and aerial photographs could be used to establish information on previous management.

Current management

- Is the site currently being managed? If so, how?
- Grazing practice? What type of grazing animal is used, how many animals and for how long?

Reasons for management

- What are your objectives? Financial, for nature or landscape conservation, for grazing livestock or a combination? This may alter how you manage your land.

Boundaries to the heathland site

- Are there crops or livestock in neighbouring fields? Could fertiliser from these fields be a concern for the site? Heathlands are very low in nutrients and chemicals could increase this fertility, causing invasive plants to dominate.
- Note the location and condition of boundaries such as fences. Secure boundaries are needed for livestock.
- How easy is it to access the site for livestock, people, machinery?

Local conditions

- Is there a water supply to the site? Animals, particularly cattle, need plenty of drinking water.

Costs

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

Monitoring

- Consider how you are going to monitor whether your management is working.
- Compare vegetation type, cover and extent of how management is in place to original records prior to management.

Local factors to consider

- Climate (rainfall and temperature). These factors will influence whether the type of livestock you choose is suitable to the local climate.
- 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.
- Land use of adjacent land. Is it likely that fertilisers could drift over from neighbouring fields?
- Size of site. This will influence the cost of grazing and quantity of livestock required.

Heathland management

Grazing

Grazing by livestock is an effective and traditional way of managing heather, the dominant vegetation of heathland. It is a gradual technique, maintaining species richness and diversity and promoting the 'traditional' appearance of heathland in the surrounding landscape.

Grazing can be used to manage many other vegetation types including acid grassland, gorse and scrub. The benefits of grazing are:

- It can help to obtain a mosaic of different types and ages of vegetation.
- It helps to suppress scrub encroachment.
- It can help to remove nutrients, making it harder for invasive plants to establish.

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 financial return? Grazing for conservation and landscape objectives may 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 the site requires restoration management, cutting may be required and then grazing afterwards to suppress any unwanted regrowth.

- **Size of the area to be grazed**

Large sites obviously need more livestock, whereas small sites may be awkward to find a small number of animals for. Larger sites can maybe be split and grazed in rotation.



- **Stock type and availability**

Careful consideration should be given to the type of animal that will graze your heathland, as each has different effects on the vegetation. If you do not have your own animals where can you get some?

Every area of heathland will be different from the next, and therefore professional advice is often needed. However, the above 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 heathland due to varying feeding habits. The table provides guidance on the most effective animal for managing different areas of heathland. However, this table is only a guide and further professional advice is likely to be needed.

The suitability of different livestock in managing areas of heathland

	Cattle	Ponies	Sheep
Controlling deciduous scrub (small trees and shrubs)	Good	Good	OK
Browsing heather	OK	OK	Good
Browsing gorse	OK	OK	OK
Controlling bracken	Not suitable	OK	Not suitable
Controlling dominant grasses	Good	Good	OK
Maintaining acid grassland	Good	OK	Excellent

When should I graze my heathland?

Normally, heathland is grazed over winter. It is important not to graze after April due to the increased risk of disturbing ground nesting birds during the nesting season. Summer grazing is only permissible under agri-environment scheme with special permission or in supporting restoration.

If you are considering re-introducing grazing onto an area of heathland, it is important to firstly consider whether grazing will damage any existing feature on the site. For example, certain wildlife may have adapted to the conditions provided by a lack of grazing therefore reintroducing grazing may change these conditions, possibly resulting in a decline in certain types of wildlife.

If you decide that grazing is the best management for your site after assessing the site and working through the 'factors to consider' table, then you will need to consider stock control and availability of water before you introduce any animals. Fencing is often the most appropriate way to control stock although this can impede on the landscape. Try and

use fencing from a local sustainable source with a sympathetic impact on the landscape such as chestnut post and rail fencing.

How should I graze?

The grazing pattern adopted to manage a site will depend on its size, stocking density and vegetation structure desired. If you want vegetation to be tall in some areas and shorter in others (which is preferable), grazing will be required for a longer period in some areas to obtain shorter vegetation.

Getting the correct balance of grazing on a site to ensure landscape value and species are not negatively affected is crucial to the quality and survival of heathland. It is advisable that livestock introduced on a site for the first time are at a low stocking rate to begin with to allow the site to adjust to management by grazing and to minimise damage to existing features. Overgrazing and undergrazing can both be problematic. Overgrazing leads to the loss of heather and other desired vegetation causing bare patches which become engulfed by invasive plants such as rhododendron and bracken. Undergrazing can be as equally problematic with the potential for domination by vigorous grasses and scrub encroachment which are detrimental to wildlife, landscape and the heathland itself.

Where can I get livestock?

If you do not have your own livestock to use, a neighbouring landowner or farmer may possess stock and be willing to graze them on your heathland. Alternatively, graziers sometimes look for suitable sites for their stock. The RAMSAK Conservation Grazing Scheme is a useful alternative for those that do not have immediate access to livestock (see Contacts).

Three factors will influence your grazing system

- Whether grazing is to be rotational or in one area.
- Whether grazing is to be continuous or seasonal.
- Type and intensity of livestock.

Cutting

When should I cut rather than graze my heathland?

Cutting was a traditional part of heathland management with cut heather being used for thatch, animal bedding and fodder. Many of these traditional uses have ceased and cut heather is not needed for these purposes. Although grazing is ultimately the preferred method for managing heathland in the majority of situations, cutting can sometimes be the preference. If an area of heathland has been traditionally managed by cutting, then it is best to continue this management as wildlife and vegetation would have adapted to this form of management. Cutting can be very useful in restoration management to regenerate heather stands.

If you decide that cutting is the preferred option, you are strongly advised to get professional advice first before you undertake any work. Having said this, there are a few points that you can be thinking through before seeking advice. If you decide that cutting using machinery is the best way to manage your heathland, October to February is the most appropriate time to undertake this to minimise disturbance to wildlife and particularly nesting birds. It is often best to cut a different area on rotation each year to encourage a mix of ages of heather.

A mosaic of different aged heather will benefit a wider range of wildlife. However, before you actually cut your heathland, you must consider the following:

- Where exactly am I cutting? It is useful to mark out the area that you are cutting to avoid fragile areas.
- Do I have the correct machinery? It needs to be robust due to thick woody stems and uneven terrain created by the heather. Flails and mowers can be used as long as litter is collected afterwards.
- How am I going to dispose of the cuttings? Cuttings must be removed off of the heather to prevent the forming of a thick layer and suffocating new shoots that are trying to grow.



Cutting gorse by hand

Hand cutting of gorse, scrub and invasive plants such as rhododendron is often necessary on a site even if it is grazed. Livestock can be very selective with their grazing and cutting can be necessary to manage the vegetation that they do not graze. Rhododendron requires cutting as it is poisonous to livestock, and bracken may also require control due to being unpalatable. Further information about cutting can be found under the heathland restoration section.

Management of bare ground

Bare ground is an important element of heathland. It provides an area for wildlife to breed and hunt particularly for species of reptiles, insects and birds such as Woodlark and Lapwing. Plants that are unable to tolerate competition from others rely on bare ground to survive. Bare ground has been lost from heathland areas due to vegetation encroachment. It is now mainly found along tracks and footpaths created by erosion and is often overlooked as an important part of heathland. A 2–3% area of bare ground on an area of heathland is desirable.

If you do not have areas of bare ground, you may want to consider creating some areas (seek professional advice for site specific help).

Methods used for creation depend on:

- Type of substrate – clay, sand, gravel
- Size of the site (the larger the site, the greater the amount of bare ground can be created)
- Financial limitations
- Available resources - machinery, labour
- Consideration of surrounding landscape

Heathland restoration

How do I know if an area of heathland is worth restoring?

Invading birch, scrub and rhododendron are characteristic of unmanaged heathland along with heather being uniformly even-aged. Management, particularly grazing is necessary to maintain a mosaic of heather, scrub, gorse and bare ground on heathland and without it, uniformity of the habitat will occur.



Heathland restoration, Clowes Wood

Using the following key points will help you decide whether restoration could be suitable for a certain site:

- What is the current landscape value of the site? Restoration can initially be a destructive process and the site may have high landscape value in its current state therefore may be best not to restore it to heathland (seek advice from your local CMP if this is the case).
- Assess the current wildlife value of the site. Are there particular species that need conserving and dominant and invasive species that need controlling? Are there rare species present that rely on the habitat as it is 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 will be most suitable for restoring to heathland.
- Can appropriate management such as grazing or cutting be maintained once restoration is complete? Annual management will need to be carried out on the site to ensure it does not revert back to the unmanaged state it was in prior to restoration.

If you have decided that your heathland would benefit from restoration, then there are a few main elements that management may need to focus on. These are likely to include some or all of the following:

- Reducing uniformity of heather age structure
- Gorse management
- Controlling bracken
- Eradicating rhododendron
- Birch encroachment
- Reintroduction of grazing

Any restoration of heathland should take place over several years which will enable wildlife to adapt to the changes. It is very important that management is carried out at the correct time of the year. When deciding on restoration techniques, it is important to consider how you will continue to manage the site in the long term. Annual management such as cutting back scrub, cutting or grazing heather will need to continue to ensure the heathland will be maintained effectively for wildlife and the landscape.

Reintroducing grazing

This is often the most effective way to restore an area of heathland and can be used for heather, gorse and small scrub management. However, other techniques such as cutting may need to be adopted to tackle rhododendron and bracken as livestock grazing of these types of vegetation is not effective. Best advice is to try and restore grazing on the heathland. Following the advice given on grazing earlier in this section will help to establish grazing on your heathland effectively. A difficulty may be that you do not have stock readily available (see RAMSAK in Contacts).

Gorse

Common (or European) gorse, western and dwarf gorse are the types found in Kent. Gorse flowers for lengthy periods therefore is a good source of food for insects and provides dense shelter favoured by many nesting birds. It requires management to maintain its vigour and create

different aged vegetation which will benefit a greater abundance and diversity of wildlife. If left unmanaged, gorse can be invasive and dominate over heather and other vegetation. Gorse reaches maturity between 7 and 12 years and after this time begins to degenerate. It is less valuable for wildlife in this state, can be a fire hazard and look unsightly in the landscape. Any gorse of this age and in a degenerate state may need restoration management.

Habitat restoration

Habitat restoration may be undertaken over a period of years to minimise the sudden changes and effects on wildlife. However a “big hit” can sometimes more cost effective and it is not recently discouraged on native conservation ground. The size of the site, available resources and area of habitat needing restoring will vary the duration of the restoration process. The process for gorse restoration:

- Cut the old gorse to ground level either by hand, chainsaw or by flailing.
- Rake up and remove cut gorse including litter from the ground. The buried seedbank will be exposed enabling new seeds to germinate.
- Cut stumps will sprout new shoots – a process known as coppicing. Maintenance management is required on a rotational basis.



Gorse – an important food source for insects

Management is required to ensure the gorse does not become invasive or degenerate again and that a mix of ages is maintained. Annual maintenance is relatively straightforward and easy to carry out. The best way to undertake this is by managing the heathland on rotation, cutting between 6.5% and 10% of total amount of gorse every winter (October - March). The selected area is cut to ground level and then new shoots will regrow the following spring (coppicing). By cutting areas on an annual rotation, a mosaic of different aged gorse will provide suitable feeding, nesting and breeding areas for a range of wildlife.

If gorse is not invasive on your site and you are trying to maintain a small amount to benefit wildlife, fencing may be necessary. If you are trying to reduce and control the amount of gorse on your land then fencing is not necessary. Young gorse is susceptible to grazing animals particularly rabbits. If you graze your heathland, keeping livestock away from newly coppiced gorse will maximise its chances of survival. If you have a problem with rabbits, then further action will be required. Erecting rabbit netting around the newly cut gorse will minimise damage caused to it. As fencing is only required for 2 - 3 years until the plants are 30cm tall, the fencing can then be moved to the next area. This will help to minimise fencing costs and ensure the landscape is not detrimentally affected by miles of rabbit fencing.

Bracken

Bracken can grow very invasively on areas of heathland. Traditionally, bracken was cut from heathland and used as stock bedding. If an area is managed effectively by grazing, cutting or a combination of the two, then bracken should not be a problem. Small patches on well-managed sites should not be an issue to heathland vegetation. However, controlling bracken is often a large part of heathland restoration. Bracken growth is very dense casting shade on the ground below, resulting in little growth underneath it. It can also grow very quickly due to the spreading through rhizomes (underground root network) making eradication more difficult.

Controlling bracken

On smaller sites where bracken has become a problem, mechanical cutting is often the most productive method for restoration. Cutting does not kill it but depletes its vigour and energy over time. Cutting when bracken is at maximum growth rate, July to August, will increase the intensity and rate of depletion. It is crucial that the area to be cut is checked for nesting birds prior to work being undertaken. This process should be repeated with two cuts the following year which should have a significant effect on its growth. Collecting and removing cut bracken from the ground is advisable as this will increase the susceptibility of any new shoots to frost.

Bracken is unpalatable to livestock so cannot be managed by grazing. If you have an extensive area of bracken that is well-established, treatment with a herbicide may be the most effective option. Please seek professional advice before undertaking this as a restoration option.



Bracken

Bracken maintenance

It is essential that bracken continues to be managed on an annual basis. If management is abandoned, it can re-establish within five to seven years. Following the same management adopted for restoration, is advisable for maintenance management.

Rhododendron eradication

Rhododendron should be eradicated on all areas of heathland as it reduces native vegetation. Subsequently, this causes problems for wildlife and the appearance of a landscape can be dramatically changed. It is an invasive non-native evergreen shrub that grows vigorously on areas including the coast, woodlands and heathlands. No vegetation can grow underneath it because of the density of shade it creates and the vast amounts of water it consumes.

Rhododendron can be difficult to eradicate as it is able to regenerate from root fragments and produces large numbers of seeds. It is not



Rhododendron

possible to graze as it is poisonous to livestock. Begin by cutting the bushes to ground level either mechanically or by hand (choice will depend on scale of the problem and available resources). The arisings should be removed from the ground and stumps then treated with an approved herbicide. For dense stands, herbicide spraying without cutting may be advisable – seek professional guidance.

Rhododendron maintenance

Any new plants should be removed immediately either by hand or machine. Monitoring a site cleared of rhododendron is advisable due the potential seedbank that could have built up. To promote germination of heather seeds, disturbance of the ground may be required to uncover the seeds. In this instance, professional advice should be sought to establish the most effective way of restoring the former heather.

Tree and scrub management

Prevention of tree establishment is a large part of heathland management. Without management, trees can establish and heathland becomes woodland. Light scrub (small trees and shrubs) occurs on heathland and in controlled quantities, can be very beneficial to wildlife such as Nightjar by providing areas to feed and nest beneath. Management is essential to maintain heathland from encroachment by scrub and trees such as birch and pine. Birch can be problematic for heathlands if they are not managed and removed where necessary. Birch can also spread very quickly across heathland due to the large amounts of seeds produced and transported across heathland.

The most appropriate time of year to carry out this management is during the winter between October and early March. Scrub can be treated in much the same way as gorse - cutting at ground level. It is important that the cut trees and scrub are not left on the ground as this will eventually break down adding unwanted nutrients to the soil. Removal of large areas of tree cover should be approached with caution, as restoration of heathland to those areas can be difficult. Following up with grazing helps to prevent regrowth.

Heathland creation

Heathland creation can be a major undertaking and professional advice should be sort at an early stage.

Creating an area of heathland can be very difficult and expert help is vital. Soil, climate and local conditions have to be just right for heather to establish and thrive. Areas of former heathland that due to a lack of management, have become woodland may not revert to heathland if the existing woodland is cut down.

The following factors are an important consideration if you are thinking about creating heathland:

- **Does the seed bank still exist within the soil?**

A healthy mature heather plant can produce up to 120,000 seeds a year. The majority of these lie dormant in the soil and build up over time. Heather seeds can stay dormant in the soil for more than 60 years, meaning that a large seed bank can develop. Buried seeds germinate when they are exposed to light and warmth. If it is possible that a large seed bank could have built up in an area that may have been former heathland, then opportunities for heathland creation will be greatly improved.

- **Local seed provenance**

Seed used to create a heathland must be suitable for the local soil. Using seeds of local provenance (collected from local stock) are preferred rather than using seeds from further afield. Using local seeds will increase the likelihood of successful restoration and maintains the genetic strain of the plants within the area.

- **Appropriateness to the landscape**

If heathland is a feature of the surrounding landscape then creation of heathland will be encouraged. Heathlands are only found today in a handful of areas in the Kent Downs AONB area so heathland creation will only be appropriate in these areas.



Scrub cutting using machinery

- **Helping to reduce fragmentation**

Re-creating heathland could be appropriate if it will help to reduce the fragmentation of heathland in certain areas within the Kent Downs AONB. Linking isolated heathland sites has important benefits for biodiversity as well as re-establishing a lost landscape feature.

- **Costs and grants available**

Grants are available to landowners within the Kent Downs AONB that undertake conservation and landscape management. See Contacts.