Hazeley Heath

Attachment 8

This is a background paper for those who would like more detailed information on management issues at Hazeley Heath. It complements a leaflet which gives a summary of the issues and is accompanied by a questionnaire on which you can record your views and comments. Details of where to get further information and send your comments are at the end of this paper.

Hazeley Heath is an area of heathland, woodland, grassland and bog. It was once used by commoners to graze livestock and to gather firewood, bracken for bedding, heather for thatching and turves for burning. Now t is mainly used for quiet recreation, such as walking, dog walking and horse riding, by local residents. The site is also a refuge for wildlife, supporting rare of heathland birds and typical heathland plants.

The origins of heathland

Most lowland heathland in Britain was formed around 3000 years ago. Early farmers cleared the woodland that covered much of the country and used the land for grazing domestic livestock. On areas with poor soils on sand and gravels, this caused the loss of nutrients and an increase in acidity in the soil, creating conditions that particularly suited heathland plants such as gorse and heather. Heathland vegetation expanded to cover large areas of southern England and in doing so, provided homes for specialist plants and invertebrates and heathland birds, notably Nightjar, Woodlark and Dartford Warbler.

With the heaths unsuitable for cultivation because of the poverty of the soil, an agricultural economy evolved that integrated the use of the infertile heathlands for grazing with adjoining areas on better soils for arable crops, a system that persisted into the mid-19th Century. In addition to grazing their livestock on the heaths, local people used them for cutting bracken for bedding, heather for thatch and brooms, gorse to fuel bread ovens and for gathering firewood. In addition, many heathlands had small gravel, sand and clay pits, where materials were extracted for building. However, changes in land management practices from the second half of the 18th Century onwards led to the breakdown of these traditional uses that had developed over many centuries. Heathlands were cultivated and fertilised, and many of those that remained were afforested, set aside for military use or built on (a practice that continued into the 1980s). About 85% of the heathland in existence in 1800 has been lost. The fragments that remained fell out of use, and natural succession led to the development of secondary pine and birch woodland on drier heathland, while the associated bogs became choked with coarse grass that crowded out the specialist plants and invertebrates or they reverted to wet willow woodland.

Hazeley Heath today

Hazeley Heath is a small remnant of what was once a much larger heathland landscape. Luckily it escaped agricultural "improvement" or development, but it is no longer used in the traditional way. For example, none of the existing commoners graze animals on the common, although the rights recorded in the 1970s were for grazing by cattle and horses and collection of firewood. The last record of bracken cutting for bedding is from the 1950s. As a result, the open vistas seen in postcards of the site from the 1920 have been replaced by woodland, gorse and bracken, and some typical heathland species are just clinging on. Hazeley Heath has also experienced non-agricultural land uses. One of the large gravel pits was used as a refuse tip until the 1970s; it has since been capped and now supports an open area of grassland. The site also has a long history of military use, which extended into the 20th Century. Old aerial photographs show how tank testing and training during the 1940s resulted in the complete loss of vegetation across much of the site. However, heavy use and disturbance, although usually of a more localised nature, has always been a feature of heathlands, and for the heathland species this episode in the history of Hazeley Heath was ultimately less damaging than its agricultural abandonment.

Today, Hazeley Heath is valued in other ways. Although much has been lost, the remaining heathland and bog (or 'valley mire') supports rare heathland birds and specialist plants, such as the insectivorous Round-leaved Sundew. The importance of the site was recognised in the designation of Hazeley Heath as a protected site (a Site of Special Scientific Interest – SSSI) in 1979 and more recently as part of the Thames Basin Heaths Special Protection Area (a European designation aimed at protecting the habitat of endangered birds). In addition to Woodlark, Dartford warbler and Nightjar, Hazeley Heath supports reptiles such as Adder, Common Lizard and Grass Snake, and a wide range of invertebrates including the beautiful Silver-studded Blue butterfly, the nationally scarce Bog Bush-cricket, and several scarce spiders, ground bugs, beetles and flies.

Silver-studded blue

Hazeley Heath is an attractive natural area, and people come to enjoy the tranquillity of the site and its wildlife and landscape. It is used mainly for quiet recreation, including walking, dog walking, horse riding and wildlife watching. There is open access to the heath for pedestrians and horse riders and there are also a number of footpaths (including public rights of way) and a bridleway running across the heath. There is no formal car park, but there are several laybys along the B1105 with room for a few cars.

Problems facing the site managers

Today, Hazeley Heath is managed by Hart District Council (the southern end) and RSPB (the northern end) with the aim of maintaining it as a haven for wildlife and a place of peace and tranquillity for the enjoyment of visitors. Overall, the site is classified as 'unfavourable' for wildlife, mainly because of the amount of woodland, scrub, gorse and bracken, and the low cover of heathers and other heathland species. Most of the areas that are currently open heathland rather than woodland or scrub are, however, considered to be in good condition, and this is due to the management undertaken by HDC and RSPB.

The Government's Biodiversity 2020 strategy set targets for ensuring that SSSIs are in favourable condition, and HDC and RSPB need to undertake restoration work in addition to continuing management of the existing heathland, which currently covers about one fifth of the site. To restore heathland, some trees and scrub need to be removed and the area managed appropriately to encourage the return of heathland species. The cutting and removal of birch, pine and other scrub species must be sensitively done to retain sufficient scattered trees and scrub to enhance the biodiversity and landscape value of the site. European Gorse is also widespread. Although important for wildlife such as Dartford Warbler, gorse shades out heathland plants and spreads readily, and so needs to be managed judiciously. Bracken is also dominant in some areas, and needs be controlled to allow heathland to regenerate.

Without some form of intervention, the existing areas of open heathland will also be colonised by gorse, bracken and eventually trees and the heathland species will be lost. In addition, the growth of Purple Moor-grass, which readily becomes dominant in damper conditions without management, will need to be suppressed.

Airborne nitrogen arising from the burning of fossil fuels in industry, traffic, shipping, aviation and agriculture poses one of the greatest threats to heathland in Europe. Many characteristic heathland species only thrive on acid heathland soils with low nitrogen availability. The addition of nutrients in rain or dust particles increases the nitrogen in the vegetation, litter and upper soil layers, and this builds up over time.

Nitrogen compounds also increase acidification in soils. Although heather can initially benefit from inputs of nitrogen, it also causes more rapid ageing of the plants and greater susceptibility to drought, frost and damage from Heather Beetle. Where the heather is weakened or removed, for example by fire, then grasses gain a competitive advantage both from the higher nutrient levels and from the increase in light and this triggers a conversion from heather to grass-dominated vegetation with the loss of specialist species associated with heather-dominated heaths.

One of the grass species involved, Purple Moor-grass, is widespread on Hazeley Heath. It is a tussocky grass that sheds its leaves in winter, so a thick thatch of dead material builds up. Purple Moor-grass swards form hummocks that are difficult and often hazardous to walk through, pose a big fire risk and are poor for wildlife. This grass is resistant to fire and recovers quickly after burning.

Research has revealed a decline in heather and an increase in the dominance of Purple Moor-grass on many heaths across Europe, and suggests that that the harmful effects of nitrogen inputs (such as conversion to grass) are one of the causes.

One of the main aims of management is therefore to reduce the levels of nitrogen already present in the soils and vegetation and to counter the annual inputs which are still occurring.

To maintain the wildlife interest and reduce nutrient levels in the mire and heathland habitats, management is needed to encourage heathland plants and suppress competition from Purple Moor-grass.

Various management actions are appropriate for heathland restoration and subsequent maintenance. Their suitability depends on the circumstances, and they are not mutually exclusive – generally a combination is required. A consultation process on the management of Hazeley heath began in 2006 and led to the grazing trial that ran between 2009 and 2014. Following this, Hart District Council and RSPB now need to consider the best ongoing management options for the site.

Management actions

Scrub and tree clearance

Scrub and tree clearance can be used to restore heathland on areas from which it was lost to tree cover some considerable time before. It may be followed by scraping or disturbance of the litter layer to encourage heathland regeneration. It is an expensive process and so is planned strategically so that it adds area on the margins of existing open heathland.

It is especially valuable if it creates links between formerly isolated open areas. Although scrub and tree clearance has been carried out on Hazeley Heath, there is still considerable potential to increase the open heathland area through restoration from tree cover. Once complete, scrub and tree clearance should not be needed on an ongoing basis provided that subsequent management (see the following sections) is carried out. This is essential if the regeneration of tree and scrub seedlings, which can rapidly turn cleared areas back into scrub and woodland, is to be prevented.

Ongoing gorse management is, however, likely to be needed. Although gorse can grow rapidly and crowd out other heathland vegetation, it is also important for heathland species such as the Dartford Warbler, so areas can be cut and allowed to regenerate on a rotational basis.

Cut and collect mowing

Mowing can be used to maintain open heath by preventing gorse and other scrub from becoming established and rejuvenating heather plants. It also reduces the risk of wildfires (both deliberate and accidental). However, frequent mowing creates an even sward (which provides fewer opportunities for wildlife than one that is more varied) and can encourage grass dominance over dwarf shrubs such as heather. This is because grasses are better adapted to regular cutting or grazing than dwarf shrubs.

Where mowing is proposed in summer, areas need to be checked for ground-nesting birds such as nightjar

Mowing removes the standing vegetation but leaves the lower parts of the vegetation and leaf litter layer intact, so the effect on the accumulated nutrient stores is modest. On acid grassland mowing can maintain a short sward and benefit low-growing plants that need high light levels. Generally mowing should be seen as a restoration measure with subsequent maintenance through grazing, though mowing can be a useful way of maintaining low vegetation for firebreaks.

Mown material must be removed from the site to reduce nutrients, and it can be difficult and expensive to find suitable disposal sites. Studies have found that the amount of nitrogen removed from the system by mowing is equivalent to about five years of atmospheric input and that if the litter layer is also taken off, about 22% of the stored nitrogen, or six to seven years of inputs can be removed. Mowing uses machinery, so is not considered as environmentally sustainable as grazing, and may also cause damaging soil compaction, particularly on wetter ground. The use of machinery also reduces the tranquillity of the site. On some parts of Hazeley Heath, mowing and the removal of cuttings are impractical because of the wet and uneven ground.

Some mowing has been carried out on Hazeley Heath during the period of the previous management plan.

Grazing

Grazing creates structural diversity in vegetation, and this can enhance species-richness. Grazing and trampling prevent the build-up of a dense thatch of vegetation and create a mosaic of micro-habitats, with small areas of short vegetation and bare ground that can be colonised by low-growing, light-demanding plants such as sundews. The resulting vegetation is more natural-looking than that managed by cutting.

Round-leaved sundew

Grazing can play a role in suppressing scrub and bracken, creating bare ground and reducing leaf litter. Generally, light grazing leads to an increase in heather cover and heavy grazing leads to the replacement of heather with grassland species. Light grazing can remove nitrogen at a rate which approximately balances the annual input. Further action would be needed to reduce the stored nitrogen from previous inputs.

The use of grazing requires the control of livestock, for which some form of fencing is needed. Sheep are generally less suitable as they are vulnerable to attacks from dogs, are ineffective grazers of tall vegetation such as Purple Moor-grass and can easily get caught up in thorny vegetation. Grazing by cattle and ponies is more effective for tall vegetation, but breeds must be carefully chosen. Cattle graze many heavily-visited sites and people often enjoy seeing grazing animals in a natural environment. Despite this, some visitors are nervous about visiting areas with stock, especially when accompanied by dogs. Traditional breeds are however generally docile and ignore dogs and people. Horse riders can be wary of free-grazing ponies, and riders and their mounts have special requirements where there are gates. Bulls, young cattle, cows with young calves (less than three months old) and stallions are not generally put out on sites visited by the public.

A grazing scheme was carried out in enclosures at Hazeley between 2010 and 2014. Although this was for a relatively short period for the results of low-intensity, seasonal grazing to be seen, there was a clear indication that grazing had increased the diversity of the heathland plants. Questionnaires carried out on site during the scheme found that the majority (around 75%) were positive about grazing on Hazeley Heath and would be happy to see wider-scale grazing. However, a proportion of the visitors (up to 35%) avoided the grazed areas.

Burning

Winter burning on a 20-25 year rotation is a traditional form of heathland management, helping to control scrub and gorse, rejuvenating the heather and providing fresh young growth for grazing animals in spring. If adopted at Hazeley Heath, it would need careful consideration and preparation and would have to include assessments of the possible impacts on protected species and the effects on areas used by visitors.

Burning can help to remove nitrogen stored in the vegetation and litter. Burning at intervals of ten to fifteen years (the time for vegetation to recover and be suitable for burning) cannot compensate for the inputs of nitrogen during the intervening years, so while burning slows nitrogen build-up, it does not stop it. After burning, free nitrogen can be washed into watercourses and fires can also increase soil acidity. Burning by itself can increase the dominance of Purple Moor-grass and reduce the frequency and dominance of heather. Burning old heather stands can reduce diversity and damage their bryophyte and lichen communities. There can be health and safety issues; mown firebreaks are needed around areas to be burnt which in turn requires good vehicle access and level, dry ground and there are concerns that controlled winter burns might encourage arson at other times. Summer wildfires can be very damaging to wildlife. Burning is not appropriate on peaty substrates, for example on areas of overgrown valley mire, as it will damage the peat. Burning also results in the release of greenhouse gases into the atmosphere.

Turf stripping

Turf-stripping removes the vegetation, leaf litter and organic layers, and depending how low the machinery is set, part of the top layer of the underlying soil. This is an extremely effective way of reducing nutrients, as high levels of nitrogen are stored in the organic layer and top layer of the soil. This has been calculated as removing over 50 years of nitrogen input.

Removing turf can increase species-richness, and can reduce the cover of grasses but can also deplete seed banks, acidify groundwater and cause increases in soil ammonium that can inhibit seed germination and reduce seedling survival.

Turf removal creates patches of bare ground which are early successional habitats and important components of heathland communities as they support a range of rare species, including invertebrates that need bare or open ground, such a field crickets. Turf-stripping is expensive, produces large volumes of material for disposal and can be unsightly and damage surface archaeology unless done sensitively and on a small scale. It would not, of course, be suitable for the area of capped landfill.

Some turf-stripping has been carried out at Hazeley under the previous management plan and resulted in a local increase in species diversity.

The management consultation

With the help of Footprint Ecology, independent consultants with a special knowledge of heathlands and commons, HDC and RSPB are carrying out as wide a consultation as possible on the future management of Hazeley Heath for wildlife and people. With this paper, you will find a questionnaire seeking your views on Hazeley Heath. If you want to add to this with other comments or suggestions, please do.

For further information and copies of this paper and the questionnaire please see www.hart.gov.uk/hazeley-heath. Completed questionnaires or any comments should be returned to Fenella Lewin, Footprint Ecology, Forest Office, Cold Harbour, Wareham, BH20 7PA or e-mailed to Fenella at (commons@footprint-ecology.co.uk

There will also be an open day for you to drop in and discuss the issues with the HDC and RSPB staff and the consultants at the Victoria Hall, Hartley Wintney on Saturday Jan 16th 2016 between 10am and 4pm We hope to complete these consultations by mid February 2016.

Hart DISTRICT COUNCIL

rspb giving nature a home

footprint ECOLOGY