

RADNOR FOREST SITE OF SPECIAL SCIENTIFIC INTEREST



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YOUR SPECIAL SITE AND ITS FUTURE

‘Your Special Site and its Future’ is part of our commitment to improve the way we work with Site of Special Scientific Interest (SSSI) owners and occupiers. In it, we explain what is special about the wildlife on your site, and what care is needed to look after its wildlife into the future.

All SSSIs are considered to be of national importance and we recognise the crucial role that owners and occupiers play in their management and protection. We need you to share your views and knowledge of this site with us, to help safeguard it.

We hope that you will find ‘Your Special Site and its Future’ interesting and helpful. Please contact us if there is anything about the site and its management that you would like to discuss.

What is ‘special’ about the wildlife at Radnor Forest SSSI?

Radnor Forest has several special features:

- **Upland Habitats & Species**

There are extensive areas of upland habitats at this site. Those that are considered to be of particular interest include dry heath, blanket bog and rocks supporting a variety of mosses and liverworts that are typical of less acidic conditions, including several scarce species. The site also supports some locally rare plants and a variety of typical upland breeding birds.

As well as the features listed above, Radnor Forest has other habitats that contribute to the special wildlife interest. These include upland acid grassland, degraded bog, acidic springs and flushes, mountain streams and dense bracken. This mixture of habitats is important for much of the wildlife and except where it is specified below, management of this site should aim to look after these habitats and species as well as those listed above.

What do we want Radnor Forest SSSI to look like?

The following is a description of how we would like to see the features at this site:

Areas with poor drainage on the top of the Forest support blanket bog and wet heath vegetation. Heather and hare’s-tail cottongrass are the dominant plants here, but crowberry, cross-leaved heath, deer-grass and bog-mosses are frequent in places. The distribution of these different habitats is dictated by depth of peat and extent of water logging. Large areas of bare eroding peat are generally absent.

The better-drained hilltops and steep hill slopes support large areas of dry heath. Mixtures of heather and bilberry are dominant here, along with crowberry, cowberry, mosses and lichens. The heathland has a varied age structure, such that there is a mosaic of young, mature and degenerate heath. Invasive bracken is generally absent from these heathy areas, although dense stands are present in the valley bottoms and on the lower slopes, in association with acidic grassland and scrub.

Cliffs, rock outcrops and scree are found throughout the site. They are formed from mildly calcareous shales and support a variety of typical mosses and liverworts, including several uncommon species, such as long fringe-moss, bristle-leaf, fringed extinguisher moss, least crystalwort, hatcher’s pawwort and rough ear-wort. Locally rare higher plants found in these areas include rock stonecrop, stone bramble and mossy saxifrage.

A variety of typical upland breeding birds are present, including raptors, red grouse, whinchat, stonechat, wheatear and dipper.

In general, for each habitat of particular interest, the area of that habitat is stable or increasing and its quality is maintained, typical plants and animals are thriving and the factors that may affect the habitat are under control. For each plant or animal of

particular interest the population is stable or increasing and is sustainable in the long term, the range is not contracting, sufficient habitat exists to support the species, and the factors that may affect the species or its habitat are under control.



Mossy saxifrage © Ray Woods, CCW

What management is needed on Radnor Forest SSSI and why?

Although Radnor Forest is an excellent place for wildlife, it will only remain so if the necessary management continues. CCW's priority is to work with you to ensure that this management is carried out.

What does this mean in practice?

There are a number of different factors that could damage the special features at Radnor Forest if they are not properly managed. These are the ones we regard as the most important:

- **Burning/cutting**

Although much of the heath may be left with minimal intervention (particularly where it can regenerate by layering) burning can be a useful management tool, helping to maintain a varied structure within mature dry heathland areas and providing suitable habitat for birds, such as red grouse, provided that it is carried out in an appropriate way, preferably as part of an approved management plan. However, blanket bog should not normally be burnt, as this is likely to damage important plant and animal species. Past burning practice may be partly responsible for the scarcity of bog mosses and the dominance of heather and hare's-tail cottongrass on some areas of bog on the site.

Burning on the steeper slopes, rocky and scrubby areas should be avoided and, in combination with intense grazing, can also result in the loss of those dwarf shrub species that give the vegetation its characteristic appearance.

Cutting is an alternative to burning, and can also be used to create firebreaks. If cutting is carried out, the resultant litter may need to be removed, in order to reduce the risk of fire and avoid inhibiting seedling germination. Machinery must not damage fragile peat soils.

Sites suitable for burning and/or cutting should be chosen carefully and management reviewed regularly. Areas rich in lichens should not generally be burnt or cut and such management should not encourage the spread of bracken, gorse or grasses.

In the past accidental fires in the summer months have damaged the bog and heath vegetation and reduced the depth of underlying peat. Use of the Harley Valley for testing explosives and ammunition poses an ongoing risk. Consequently, firebreaks should be maintained in this area and the range should be operated in a way that minimises the risk of uncontrolled fires.

- **Drainage**

Bogs and wet heath are dependent on a high water table and are vulnerable to drying out as a result of drainage. The existing natural drainage pattern of the site should be maintained. No drainage work should be undertaken on the hilltops and any existing drainage ditches should not be maintained. It may be also desirable to block some existing drainage channels to restore water levels and encourage peat formation in certain places.

- **Scrub and bracken encroachment**

Around the fringes of the open hill areas, trees and scrub are a valued part of the upland habitat mosaic and should be seen as a benefit to wildlife rather than a problem. However, the spread of woody growth on to open heath and bog areas can be damaging, as it will shade the vegetation and tend to dry out the peat. In the open moorland areas, scrub invasion should be prevented by the correct combination of grazing and burning and cutting. Ideally, scrub and woodland will

spread into poor habitats such as dense bracken at the fringes of the hill land. In areas with virtually no grazing, saplings and invasive conifers may need to be cut and removed periodically.

Bracken invasion may be more of a problem, particularly on the lower hill slopes. Grazing may not prevent bracken invasion particularly if sheep rather than heavier animals are used and burning can encourage the spread of bracken into heathy areas.

In the Harley Valley range area, bracken litter represents a serious fire risk and so regular bracken management is essential here. Elsewhere, if bracken control is considered to be necessary, there are several options. On open moorland areas cutting, crushing or spraying using a vehicle may be possible in some areas but on rough or steep ground aerial spraying may be the only practical option. All herbicide spraying should avoid bogs, stream courses, flushes, scrub and areas supporting sensitive plants, including other types of fern.

- **Soil fertility / Nutrient Inputs**

Soil fertility at this site is naturally low and the application of any agricultural fertilisers will have a detrimental effect on the upland vegetation. Bogs and heathland are particularly sensitive to nutrient inputs.

Supplementary stock feeding can lead to localised damage to grazing sensitive plants and cause poaching and gradual nutrient enrichment. Feeding within the site should be confined to agriculturally improved land or stands of dense bracken, if necessary.

No agricultural fertilizers, lime or farmyard manure should be spread on the site.

- **Atmospheric pollution/acidification**

Several widespread ongoing human-induced processes are changing the environmental and ecological conditions and are causing concern at Radnor Forest and in other upland areas in Britain. These include acidification of rain and soils due to atmospheric pollution, and nutrient enrichment (especially increased nitrogen and phosphorus), through a combination of atmospheric pollution, excessive sheep-dunging/urination and other inputs from diffuse sources. Heather, mosses, liverworts and lichens are particularly vulnerable to pollution from atmospheric sources.

Much of this atmospheric pollution comes from distant, diffuse sources, such as traffic and domestic emissions, but some can be attributed to large point sources, such as major power stations or industrial processes. If particularly damaging current point sources (or groups of point sources) can be identified, then emissions should be regulated to reduce the impacts at this site. However, it will also be very important for wider measures to be taken, at Government and international levels, to reduce air pollution.

- **Heather Beetle**

These beetles feed on heather plants in the summer and over-winter in the moss and litter layer beneath. They are favoured by warm summers and mild winters, so are generally on the increase as a result of global warming. In such circumstances large areas of old or grazing damaged heather plants may be killed by beetle attack. Regeneration from seed is poor and these areas can easily revert to acid grassland. Younger, well-managed heather plants recover much better from beetle damage.

Where stands of old heather have been completely killed by beetle attack, a thick layer of moss is often present which inhibits the regeneration of heather plants from seed. These areas can then become dominated by grasses. In such circumstances, burning will remove the moss and litter, killing the beetle larvae and stimulating heather seed to germinate. Elsewhere, heather beetle damage must be accepted as a natural part of the heathland cycle.

- **Engineering works and Development**

The site includes the Harley Valley testing area and a communications installation, together with associated access tracks and other structures. These facilities may require periodic repair and maintenance and this work should be carefully planned and undertaken in a sensitive manner, so that there is minimal impact on the habitats and species of interest.

Major new projects, such as roads, pipelines, wind and hydropower schemes and power lines, could have a significant impact and should be carefully assessed in accordance with environmental regulations. Wind turbines may present a collision risk to birds of prey and may cause disturbance to breeding birds.

- **Access and recreational use**

The hill land is subject to right of public access on foot, although the danger area around the testing range has an exclusion for safety purposes, which is subject to periodic review. Generally use by walkers does not appear to be very intensive, although such use should be monitored and any significant damage or disturbance addressed by appropriate access restrictions and exclusions if necessary.

Unauthorised vehicle use is a threat to moorland areas, as bog and heathland vegetation can be easily damaged. Use of the site by off road vehicles should be discouraged and owners and occupiers should co-operate with the police and other statutory bodies to undertake enforcement action where necessary.

In addition some management is essential to conserve the special features and maintain them in their current condition. This includes:

- **Grazing**

The previous history of light to moderate grazing across most of the site has been an important factor in maintaining the special interest.

A certain amount of grazing is needed to prevent the most important heath and bog areas from becoming colonised by trees, shrubs and bracken. Grazing stock can also help maintain a varied age structure in stands of heather, although this could also be achieved through rotational cutting/burning in the drier areas and can develop naturally over time in the damper areas.

Heavy grazing of moorland areas can damage heather and suppress bilberry growth, eventually leading to the establishment of a grass-dominated sward. Bogs are particularly sensitive to grazing damage, which may lead to serious erosion. Grazing in autumn and winter, particularly by sheep, is damaging to the heathy vegetation and should be avoided.

A suitable grazing regime should be maintained across the site, with some mixed grazing if possible. Cattle are good at controlling coarse grasses and bracken and both ponies and cattle do less damage to older heather, although heavy cattle grazing can damage regenerating heather. On hill areas, sheep tend to avoid the wettest areas and will graze the drier heath preferentially, causing localised damage in these areas. However, they are better able to graze on the steeper slopes.

In some areas it may be desirable to spread the grazing pressure more evenly by shepherding or strategic fencing to encourage stock to spend more time on the hilltops and to reduce grazing pressure on the valley sides.

Finally

Our knowledge and understanding of wildlife is continually improving. It is possible that new issues may arise in the future, whilst other issues may disappear. This statement is written with the best information we have now, but may have to change in the future as our understanding improves, in particular, of the possible impact of climate change. Any information you can provide on the wildlife of your site, its management and its conservation would be much appreciated.

If you would like to discuss any aspect of your SSSI, or have any concerns about your SSSI, please contact your local CCW office.

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