

Notification Date: 6 February 1990

COUNTY: HEREFORD & WORCESTER SITE NAME: THE MALVERN HILLS

DISTRICT: MALVERN HILLS, FOREST OF DEAN SITE REF: 15 WRP

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority: HEREFORD & WORCESTER COUNTY COUNCIL,
Gloucestershire County Council, Malvern Hills District Council, Forest of Dean District Council

National Grid Reference: SO 766472 to SO 758350 Area: 732.3 (ha.) 1899.6 (ac.)

Ordnance Survey Sheet 1:50,000: 150 1:10,000: SO 73 SE & NE, SO 74 SE & NE

Date Notified (Under 1949 Act): 1954 Date of Last Revision: 1975

Date Notified (Under 1981 Act): 1990 Date of Last Revision: –

Other Information:

Site boundary alteration (extension and deletion). Within the Malvern Hills AONB. Part administered by the Malvern Hills Conservators.

Description and Reasons for Notification:

The Malvern Hills are a spectacular ridge 12 kilometres long rising to over 400 m (1300 ft). They lie to the west of Great Malvern and form part of the border between the old counties of Herefordshire and Worcestershire. The extreme southern end is in Gloucestershire. The site has been selected as it is one of the largest areas of semi-natural vegetation in the West Midlands supporting a mosaic of habitat types. Unimproved acidic grassland covers the top of the ridge which grades into tall herb communities at lower altitudes. Woodland occurs as narrow fringes at the northern end of the site and in more extensive blocks further south and there are smaller areas of other habitats such as heathland, flushes, open water and bare rock faces. The site is also important for a number of uncommon plants, including a nationally rare clubmoss, as well as butterflies and moths, including a nationally rare butterfly, breeding birds and mammals.

The Malvern Hills are also of considerable geological interest with important exposures in several quarries.

Biology

The Malvern Hills support the largest expanse of upland grassland in Hereford and Worcester and Gloucestershire. Most of the upper slopes are covered by unimproved acidic grassland. The dominant grasses are sheep's-fescue *Festuca ovina* and common bent *Agrostis capillaris* with wavy hair-grass *Deschampsia flexuosa*. Characteristic herbs include sheep's sorrel *Rumex acetosella*, heath bedstraw *Galium saxatile* and harebell *Campanula rotundifolia*. In places a base rich grassland occurs with crested hair-grass *Koeleria cristata* and upright brome *Bromus erectus*. This type of grassland contains a wider range of herbs which include wild thyme *Thymus praecox* ssp. *arcticus*, lady's bedstraw *Galium verum* and mouse-ear hawkweed *Hieracium pilosella*. These grasslands contain a number of uncommon plants. The nationally restricted upright chickweed *Moenchia erecta* is widespread in short turf along the summit ridge south of the Herefordshire Beacon. Spring cinquefoil *Potentilla tabernaemontani*, another nationally restricted species, is more localised occurring only where the soil conditions are less acidic. Other locally uncommon species include bird's-foot *Ornithopus perpusillus*, knotted clover *Trifolium striatum* and little mouse-ear *Cerastium semidecandrum*.

A similar vegetation has developed in the numerous disused quarries and in the vicinity of British Camp Reservoir. Here the soils are of more recent origin having developed on sites which have been disturbed in the recent past. A number of uncommon plants occur in these areas. Short turf communities include the nationally restricted fenugreek *Trifolium ornithopodioides* together with buck's-born plantain *Plantago coronopus* and common stork's-bill *Erodium cicutarium*. Vegetated spoil heaps support the nationally restricted white horehound *Marrubium vulgare* and several locally uncommon species such as carline thistle *Carlina vulgaris*, Smith's pepperwort *Lepidium heterophyllum* and common calamint *Calamintha sylvatica* ssp. *ascendens*.

The lower slopes are dominated by bracken *Pteridium aquilinum* and western gorse *Ulex gallii*. The flora under the bracken contains many early flowering species more typical of woodland which bloom before the fronds unfurl. These include bluebell *Hyacinthoides non-scripta*, wood anemone *Anemone nemorosa*, wild strawberry *Fragaria vesca* and common dog-violet *Viola riviniana*. The violet is particularly important as it is the food plant for the larvae of several butterfly species.

Woodland fringes the hills at the northern end and occurs in more extensive blocks further south. Much of the woodland at the southern end is ancient semi-natural and is largely dominated by sessile oak *Quercus petraea*. Several nationally restricted types of woodland occur which are dominated by sessile oak. Where the soils are dry the associated species include silver birch *Betula pendula* and hazel *Corylus avellana*. In moister, richer soils ash *Fraxinus excelsior* is the associate. In places where the ground is flushed wych elm *Ulmus glabra* occurs with the sessile oak. Alder *Alnus glutinosa* is dominant along streams and more extensively in News Wood. Other less common trees on the Malverns include wild service-tree *Sorbus torminalis*, small-leaved lime *Tilia cordata* and the nationally restricted large-leaved lime *T. platyphyllos*.

Within the oak woods hazel is the main species in the shrub layer together with field maple *Acer campestre*, dogwood *Cornus sanguinea*, holly *Ilex aquifolium* and hawthorn *Crataegus monogyna*. The ground flora contains a range of typical woodland species such as wood-sorrel *Oxalis acetosella*, yellow archangel *Lamiastrum galeobdolon* and ramsons *Allium ursinum* as well as a number of more local species such as violet helleborine *Epipactis purpurata*, climbing corydalis *Corydalis claviculata* and the nationally restricted narrow-leaved bitter-cress *Cardamine impatiens*.

A few areas of heathland exist. This is an important habitat as it is very scarce in Hereford and Worcester and Gloucestershire. Most areas are of the grass-heath type where dwarf shrubs such as heather *Calluna vulgaris* and bilberry *Vaccinium myrtillus* grow amongst dense wavy hair-grass with *Cladonia* lichens, and mosses. Bilberry is particularly abundant on the Worcestershire Beacon. The nationally rare clubmoss *Diphasiastrum x. issleri* occurs on one fragment of heathland. This is the only extant population of this plant in England and Wales and the only known locality in lowland Britain.

Other less extensive habitats include flushes, open water and rock faces. These support a number of plants not found elsewhere on the Malverns. The flushes occur mostly on Swinyard Hill and are dominated by jointed rush *Juncus articulatus* and include lousewort *Pedicularis sylvatica*, common spike-rush *Eleocharis palustris* and marsh pennywort *Hydrocotyle vulgaris*. Navelwort *Umbilicus rupestris* grows on bare rock outcrops at the northern end of the hills.

The Malvern Hills is one of the best sites in the West Midlands for butterflies, supporting thirty four breeding species. Of particular importance is the colony of the nationally rare high brown fritillary *Argynnis adippe*. This is Britain's most rapidly declining butterfly and the Malvern Hills support one of the two strongest populations in Britain of this most threatened species. The nationally restricted pearl-bordered fritillary *Boloria euphrosyne* and wood white *Leptidea sinapis* occur as well as species that are uncommon in the West

Midlands such as brown argus *Aricia agestis*, grayling *Hipparchia semele* and dark green fritillary *Argynnis aglaja*. A number of nationally scarce moth species occur such as alder kitten *Furcula bicuspis*, triple-spotted pug *Eupithecia trisignaria* and square-spot dart *Euxoa obelisca*. The latter usually inhabits coastal cliffs and occurs on the Malverns at one of its few known inland sites where it has colonised a disused quarry.

The site supports a variety of breeding birds. These are mainly woodland species which include sparrowhawk *Accipiter nisus*, pied flycatcher *Ficedula hypoleuca* and wood warbler *Phylloscopus sibilatrix*. Areas of scrub and scattered trees attract breeding tree pipit *Anthus trivialis* and grasshopper warbler *Locustella naevia* whilst the open grassland supports breeding meadow pipit *A. pratensis*, wheatear *Oenanthe oenanthe* and skylark *Alauda arvensis*.

The extensive and semi-natural nature of the site supports large numbers of the commoner species. Over 50 singing male whitethroats *Sylvia communis* and up to 300 singing male willow warblers *Phylloscopus trochilus* are recorded annually. The site is used as a feeding area by species on passage such as snow bunting *Plectrophenax nivalis* and ring ouzel *Turdus torquatus* and by wintering species such as raven *Corvus corax* and peregrine *Falco peregrinus*.

The site also supports a wide range of mammals including such scarce species as dormouse *Muscardinus avellanarius* and polecat *Mustela putorius*. A disused railway tunnel beneath the Malvern Hills supports one of the largest known winter colonies of the lesser horseshoe bat *Rhinolophus hipposideros* in England.

Geology

Geologically, the Malverns is one of the largest and most important outcrops of Precambrian basement in S. Britain. The excellent exposures have stimulated much original research work, including pioneering petrological and geochemical studies by Rutley and Timms. Interest in the petrography, geochemistry and geophysics of these rocks has flourished throughout this century, particularly with the realisation that the Complex represents the calc-alkaline plutonic roots of an island arc system once active on the south-east flanks of Iapetus. The site also includes the type locality for the Warren House Volcanics which provide an important stratigraphic link between the basement inliers of the Malverns and Shropshire. The exposure of the Malvern Quartzite of the Lower Cambrian (Comley Series, Non-trilobite Zone) at Gullet Pass Pit has been known since the early years of the nineteenth century. Interdigitating conglomerates and quartzites are seen, and these have figured in discussions on the structure and geological history of the Malvern Hills. The site is of palaeontological importance in yielding five species of inarticulate brachiopod and one hyolithid species, a fauna which can be compared to that of the Lower Comley Sandstone of Shropshire, providing a dateable horizon for the onset of Cambrian sedimentation in the Malvern area. Gullet Quarry shows a section through the Wych Formation of the early Silurian, here directly overlying Precambrian strata. This unit, of mid-Telychian age, yields fine acritarch microfloras from its shales and conodonts from its limestones. This is the type locality for a number of microfossils. The formation in addition yields a common brachiopod and trace-fossil assemblage. This is a key site in studies of Llandovery rocks in the Malvern area.