

COUNTY: WILTSHIRE/HAMPSHIRE SITE NAME: PORTON DOWN

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

Local Planning Authorities: SALISBURY DISTRICT COUNCIL, Test Valley Borough Council, Wiltshire County Council, Hampshire County Council

National Grid Reference: SU 240365 Area: 1561.84 (ha.)

Ordnance Survey Sheet 1:50,000: 184 1:10,000: SU 13 NE, SU 23 SW,
SU 23 NW, SU 23 SE,
SU 23 NE

Date Notified (Under 1949 Act): 1977

Date Notified (Under 1981 Act): 19 March 1992

Date re-notified (Under 1981 Act): 14 December 1999

Other Information:

Within management of DERA, Defence Evaluation Research Agency.
The site is part of the Salisbury Plain candidate Special Area of Conservation and the Porton Down SPA. (The proposed extension is also proposed for inclusion within these sites.)

Reasons for Notification:

This site is notified for its unimproved calcicolous grassland communities of the following types. Sheep's fescue *Festuca ovina*-*Avenula pratensis* grassland, *Cirsium acaule*-*Asperula cynanchica* typical sub-community, and the *Pseudoscleropodium purum*-*Prunella vulgaris* and *Holcus lanatus*-*Trifolium repens* sub-communities. Upright brome *Bromus erectus* grassland typical sub-community, and the *Festuca rubra*-*festuca arundinacea* sub-community. Downy oat *Avenula pubescens* grassland, *Dactylis glomerata*-*Briza media* and the *Potentilla reptans*-*Tragopon pratensis* sub-communities. Sheep's fescue-thyme grassland, *Koeleria macrantha*, *Cladonia*, *Fragaria vesca*-*Erigeron acer*, *Rumex acetosa*-*Medicago lupulina*, and *Ditrichum flexicaule*-*Diploschistes muscorum* sub-communities. The site is also notified for its outstanding assemblages of lower plants (lichens), vascular plants and invertebrates. The site is also notified for its breeding population of stone curlew, and breeding bird community of grassland, woodland and scrub.

General description

Porton Down is an extensive area of grassland, scrub and woodland on the Wiltshire-Hampshire border. It constitutes one of the largest uninterrupted tracts of semi-natural chalk grassland in Britain, a habitat which has declined by more than 80% in the last 50 years, largely through agricultural intensification. It supports rare grassland and scrub communities, together with significant populations of uncommon plants, invertebrates and birds.

Porton Down occupies a gently undulating plateau of Upper Chalk incorporating several shallow dry valleys, and preserves many features of archaeological significance. Detailed documentary evidence of land-use history indicates that the grasslands range from 40 to over 200 years old, presenting unparalleled opportunities for research into the relationship between wildlife and continuity of habitat.

Four main types of grassland have been identified. Two of the communities are particularly rare in Britain. One, in which red fescue *Festuca rubra* and downy oat-grass *Avenula pubescens* occur as pronounced tussocks with litter-choked channels between, is virtually confined to Porton Down and one site on Salisbury Plain. It has developed on soils which have increased in fertility in the absence of pasturing, and has a structure partly derived from the growth habitat of red fescue, combined with the mound building activities of yellow meadow ant *Lasius flavus*. The second uncommon community is otherwise only known from Breckland. This community, characterised by sheep's-fescue *Festuca ovina*, mouse-ear hawkweed *Hieracium pilosella* and wild thyme *Thymus praecox* has lichens prominent in the sward. In particular *Cladonia rangiformis*, *C. impexa* and *Peltigera furescens* may cover 80% of the ground surface. Other grassland communities include a type characterised by sheep's-fescue and meadow oat-grass *Avenula pratensis*, which has a particularly rich and intimate mixture of grasses and broadleaved herbs, and a type dominated by the coarse grass upright brome *Bromus erectus*, which has fewer herbs and is typical of undergrazed chalk downlands.

The grasses vary in species diversity in conjunction with the current levels of rabbit grazing, depth and type of soil and management history. Younger areas which are less diverse and with few herbs are often dominated by false oat-grass *Arrhenatherum elatius*. In contrast meadow oat-grass *Avenula pratensis* occurs predominantly in the older grassland, as do the herbs squinancywort *Asperula cynanchica*, dropwort *Filipendula vulgaris*, common rock-rose *Helianthemum nummularium* and common milkwort *Polygala vulgaris*. Rarer species include early gentian *Gentianella anglica*, chalk milkwort *Polygala calcarea*, bastard toadflax *Thesium humifusum* and field fleawort *Senecio integrifolius*, all of which are confined to the southern chalk, and dwarf sedge *Carex humilis*, a plant with a British population centered on Wiltshire. Porton Down also supports a colony of the Red Data Book plant, meadow clary *Salvia pratensis*, a species rare as a native in Britain, where it occurs as scattered colonies on chalk and limestone.

Broadleaved, mixed and coniferous plantations form several large blocks, with beech, sycamore and Scots pine widely planted. Semi-natural woodland of oak, ash and some yew occurs locally. Less common plants found in the woodland include yellow birds-nest *Monotropa hypopitys* and bird's-nest orchid *Neottia nidus-avis* both of which derive nourishment from decaying plant materials, and white helleborine *Cephalanthera damasonium*, a species closely affiliated with beechwoods on chalk and limestone.

Scrub and scattered trees are a feature of much of the grassland. Juniper *Juniperus communis* scrub of several age classes is widespread, and constitutes about 20% of

the total southern English population. There is also an area of chalk heath in which heather *Calluna vulgaris* grows alongside juniper.

Porton Down supports a diverse fungal flora. Rare species recorded from the chalk grassland include the brightly coloured *Hygrophoris langei*, whilst rare woodland fungi include the ivory wax cap *H. enurneus* and summer truffle *Tuber aestivum* the last of which is occasionally excavated by badgers.

The size of Porton Down and its range of habitats provide suitable conditions for a wide range of fauna. The spider fauna is of particular interest, with approximately 30% of British species recorded. Rare species include *Typhocrestus simoni* which in Britain is otherwise recorded from only one site in Wales and which has, at Porton, probably the largest European population. Porton Down is also noted for its bee, wasp and ant (hymenoptera) fauna, and a conspicuous feature of the site is the estimated three million ant-hills. Several rare beetles (coleoptera), flies (diptera) and bugs (hemiptera) have also been recorded.

Porton Down supports an outstanding assemblage of butterflies, including a large population of the nationally rare silver spotted skipper *Hesperia comma*, a species which was once widespread on chalk and limestone in Britain, extending as far as Yorkshire, but which has suffered a severe decline during the past 40 years. Other uncommon butterflies include pearl bordered fritillary *Boloria euphrosyne*, Duke of Burgundy *Hamearis lucina* and Adonis blue *Lysandra bellargus* all of which have declined in Britain this century. The moths recorded include six uncommon species, two of which, *Argyresthis praecocella* and *Thera juniperata*, are solely dependent on juniper. The juniper scrub is particularly rich in invertebrates generally, several of which are also confined to juniper.

There is an outstanding breeding bird community, including hobby, buzzard and long-eared owl. Porton Down is an important stronghold for breeding stone curlew with approximately 10% of the British population nesting on the site. Stone curlews are afforded special protection through the Wildlife and Countryside Act 1981 (as amended), and their listing in the European Communities Council Directive of 1979 on the Conservation of Wild Birds.

Of the larger mammals, roe deer and rabbit occur in high numbers. The fluctuating population of rabbits has been a major influence on the vegetation of Porton Down, most of which is ungrazed by domestic stock.