

COUNTY: WILTSHIRE/HAMPSHIRE SITE NAME: SALISBURY PLAIN

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

Local Planning Authorities: WEST WILTSHIRE DISTRICT COUNCIL, Kennet District Council, Salisbury District Council, Wiltshire County Council, Test Valley Borough Council, Hampshire County Council

National Grid References: ST 950480 Area: 19689.91 (ha.) 48655.74 (ac.)
 SU 070500
 SU 200490

Ordnance Survey Sheet 1:50,000: 173, 183, 184

Ordnance Survey Sheet 1:10,000: ST 84 NE ST 85 SE ST 94 NW ST 94 NE ST 94 SW ST 94 SE ST 95 SE ST 95 SW SU 04 NW SU 04 NE SU 04 SW SU 04 SE SU 05 NE SU 05 NW SU 05 SE SU 05 SW SU 14 NW SU 14 NE SU 14 SW SU 14 SE SU 15 SW SU 15 SE SU 15 NE SU 24 SW SU 24 NW SU 25 SW

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

Date Notified (Under 1981 Act): 29 January 1993 Date of Last Revision: –

Other Information:

Grade 1 NCR Site: Bulford Down.

National Trust: White Barrow.

This site includes land which has been proposed for designation as a Special Protection Area under the EC Directive 79/409 on the Conservation of Wild Birds.

Salisbury Plain supports the largest known expanse of unimproved chalk downland in north west Europe, and represents 41% of Britain's remaining area of this rich wildlife habitat. In Britain and north-west Europe the majority of unimproved calcareous grassland has been lost largely through agricultural intensification resulting in chalk grassland becoming an internationally threatened wildlife habitat. Salisbury Plain was acquired by the Ministry of Defence for military training early this century, and this large expanse of lowland grassland has not been subject to intensive farming methods. As a result, 12933 ha. of chalk downland remains which supports 13 species of nationally rare and scarce plants, 67 species of rare and scarce invertebrates and forms a site of international importance for birds. In addition to chalk downland, this site supports scrub and woodland habitats, temporary and permanent pools and the Nine Mile River winterbourne.

The site occupies a plateau of Upper and Middle Chalk which rises in the heart of Wiltshire, and lies between Pewsey Vale to the north and the River Wylye valley to the south. Periglacial activity has created a complex topography of dry river valleys as well as extensive areas of flat land. The Devizes to Salisbury road and the River Avon valley divide the Plain into Western, Central and Eastern blocks. Eocene Reading Beds cap the peaks of Sidbury and Beacon hills, whilst superficial

deposits of valley and river gravel lie along the Nine Mile River to the east and the Imber to Chitterne valley to the west.

A diversity of soil types, slope, aspect and past and present land-use has given rise to various grassland communities. Historical evidence suggests that large areas of grassland are of great antiquity, and areas which were cultivated at the beginning of this century have experienced nearly 100 years of chalk grassland re-colonisation. Parts of East Salisbury Plain and the periphery of Central and West comprise areas of grassland currently managed for grazing pasture and hay-cutting, whilst the middle of Centre and West are ungrazed.

A large proportion of Salisbury Plain supports upright brome *Bromus erectus* species rich grassland, within which a continuous floristic variation is seen. A widespread type on the Plain is characterised by an abundance of red fescue *Festuca rubra*, crested hair-grass *Koeleria macrantha*, salad burnet *Sanguisorba minor*, lady's bedstraw *Galium verum*, rough hawkbit *Leontodon hispidus*, common rock-rose *Helianthemum nummularium* and dropwort *Filipendula vulgaris*. The high constancy of this last species is a distinctive feature of the upright brome grasslands on Salisbury Plain and is otherwise only known from one other site in Hampshire.

Where upright brome is less dominating, plants such as small scabious *Scabiosa columbaria*, clustered bellflower *Campanula glomerata*, dyer's greenweed *Genista tinctoria*, kidney vetch *Anthyllis vulneraria*, sainfoin *Onobrychis viciifolia* and horseshoe vetch *Hippocrepis comosa* are characteristic associates. The rare and notable plants which occur here include burnt orchid *Orchis ustulata*, slender bedstraw *Galium pumilum*, field fleawort *Senecio integrifolius* and the nationally scarce British endemic early gentian *Gentianella anglica*.

Particularly associated with long established turf on thin rendzina soils, and rabbit grazed areas of the eastern and central ranges, are low-growing perennials including squinancy-wort *Asperula cynanchica*, chalk milkwort *Polygala calcarea*, dwarf thistle *Cirsium acaule*, wild thyme *Thymus praecox*, the nationally scarce bastard-toadflax *Thesium humifusum* and purple milk-vetch *Astragalus danicus* in its most southerly British station.

Devil's-bit scabious *Succisa pratensis*, saw-wort *Serratula tinctoria* and betony *Stachys officinalis* are all abundant and exemplify the oceanic character of the chalk grassland on the Plain, a feature which is confined to south-west England. Similarly restricted is a community in which dwarf sedge *Carex humilis* forms a conspicuous component. This type of grassland has its stronghold in Wiltshire and occurs on the less disturbed areas of the central ranges.

Herb diversity is generally lower in the tall upright brome dominated swards, but wild parsnip *Pastinaca sativa*, hogweed *Heracleum sphondylium* and greater knapweed *Centaurea scabiosa* are characteristic. Parasitic on the latter species is knapweed broomrape *Orobanche elatior*, occurring in greater quantity on the Plain than anywhere else in Britain. False-oat grass *Arrhenatherum elatius* grassland is

also widespread, but is particularly a feature of the western ranges, often indicating areas of past cultivation.

On anthills, and in the more disturbed turf that is especially a feature of the impact area, mouse-ear hawkweed *Hieracium pilosella* is abundant together with sheep's-fescue *Festuca ovina* and wild thyme. Annuals are also characteristic of this habitat, including common whitlowgrass *Erophila verna*, rue-leaved saxifrage *Saxifraga tridactylites*, hairy rock-cress *Arabis hirsuta* and the nationally scarce dwarf mouse-ear *Cerastium pumilum* and fine-leaved sandwort *Minuartia hybrida*. A very local community characterised by a lichen-rich turf (*Cladonia* species) and the moss *Dicranum scoparium* is found in some stabilised missile-impaction craters on the central ranges. This vegetation type is found elsewhere only on Porton Down SSSI and on the Brecklands.

Small areas of chalk-heath vegetation occur on superficial clay-with-flints deposits. Here chalk-loving plants such as salad burnet and dropwort co-exist with plants typical of acid soils, including gorse *Ulex europaeus*, heather *Calluna vulgaris* and the uncommon annual knawel *Scleranthus annuus*.

Two Red Data Book (RDB) plants occur on Salisbury Plain. The largest population in Britain of tuberous thistle *Cirsium tuberosum* occurs on the western ranges and is notable for the low incidence of hybridisation with dwarf thistle, a contributory cause of its decline in other localities. Meadow clary *Salvia pratensis* persists as a small colony in tall upright brome grassland.

Salisbury Plain supports a diverse bryophyte flora with seven nationally scarce species which have seen a general decline in other chalk grassland sites, including *Barbula acuta*, *Phascum curvicolle*, *Pleurochaete squarrosa*, *Thuidium abietinum* and *Weissia sterilis*.

Although there is some scrub development on the Plain, it is remarkable that large expanses of the chalk grassland remain open with very little invasion of woody species. Of particular interest are the large stands of juniper *Juniperus communis* on Bulford Downs and Beacon Hill. Both pyramidal and prostrate forms are present and this site, along with Porton Down SSSI to the south, supports the best remaining examples of the lowland type of juniper associated with chalk and mixed scrub in England.

The botanically and structurally diverse grasslands support an outstanding assemblage of rare and uncommon chalk downland invertebrates. Where abundance has been assessed strong populations of national and local importance are present, and the large area of habitat available to them is important in ensuring their survival.

Salisbury Plain is an important stronghold for declining downland butterflies. A high concentration of colonies of three nationally scarce species, the Adonis Blue (17% of Britain's colonies), Duke of Burgundy (??%) and the largest population of Marsh Fritillary on the chalk, occur. A colony of Brown Hairstreak is present on East Salisbury Plain at one of its two Wiltshire localities. Strong populations of other downland species such as Chalkhill Blue and Dark Green Fritillary are found,

and of note here is the occurrence of Grayling, a butterfly rarely found away from the coast.

An outstanding assemblage of two rare (RDB), 36 nationally scarce and two regionally notable moths are present, most of which are either chalk grassland specialists or are partly dependent on chalk grassland. The RDB species Scarce Forester *Adscita globulariae* is present, and amongst many species of nationally scarce moths are Cistus Forester *A. geryon*, Six-belted Clearwing *Bembecia scopigera*, Oblique Striped *Phibalapteryx virgata*, Pimpernel Pug *Eupithecia pimpinellata*, Shaded Pug *E. subumbrata* and Narrow-bordered Bee Hawk Moth *Hemaris tityus*. Larvae of these moths feed on the chalk grassland plants which are widespread on Salisbury Plain. Other nationally scarce moths such as Orange-tailed Clearwing *Synanthedon anthraciniformis* depend on the associated scrub habitats.

The bee fauna is particularly rich in species which depend on chalk grassland. One of only two British populations of the endangered (RDB) mining bee *Melitta dimidiata* is present on the Plain, and two other RDB species which occur are *Andrena hattorfiana* and its nest parasite the Cuckoo Bee *Nomada armata*. This is a rare inland site for the nationally scarce Tawny Bumble Bee *Bombus humilis*.

The Diptera (flies) include four RDB species which depend on chalk grassland, the picture-wing flies *Chaetorellia loricata*, *Urophora solstitialis* and *Terellia vectensis* and the hover fly *Volucella inflata*.

Recent observations have shown that Salisbury Plain is an important site for the RDB crustacean, the Fairy Shrimp *Chirocephalus diaphanus* which is dependent on temporary pools, a rare and declining habitat. On the Plain this habitat requirement is met by numerous pools created by repeated tank movements along the earth tracks which cross the chalk grassland.

Other nationally scarce invertebrates occur within the Orthoptera (grasshoppers and crickets), Heteroptera (bugs) and Coleoptera (beetles), the latter group including a RDB soldier beetle, *Cantharis fusca*.

The area as a whole is of national and international importance for breeding and wintering birds. It supports seven species listed on Annex 1 of the EC Directive on the Conservation of Wild Birds, populations of six species of Red Data bird and several species of candidate Red Data bird. Amongst the breeding birds three species are particularly noteworthy. Up to 20 pairs of Stone Curlew representing 12% of the British population breed on the Plain. The area accounts for approximately 20% of breeding records for Quail in Britain each year, and numbers of breeding Hobby are thought to exceed 1% of the British population on a regular basis. Other important breeding species include Buzzard, Barn Owl, Long-eared Owl, Nightingale, Stonechat, Whinchat, Wheatear, Corn Bunting and, on occasion, Montagu's Harrier. The overall breeding assemblage is exceptionally diverse for a British dry grassland site.

In winter the Plain is an important area for foraging flocks of thrushes, finches and buntings. These, together with abundant small mammals are prey for wintering Hen

Harrier, Merlin and Short-eared Owl. Hen Harriers occur in nationally significant numbers each winter, and the Plain is an important winter roost for this species in southern England.

Other species of interest on Salisbury Plain include the Great Crested Newt *Triturus cristatus*. This newt occurs in dew ponds across the Plain and in pools along the Nine Mile River, together with smooth newt *T. vulgaris*, common frog *Rana temporaria* and common toad *Bufo bufo*. Grass snake *Natrix natrix* are also often seen near pools, and common lizard *Lacerta vivipara*, slow worm *Anguis fragilis* and adder *Vipera berus* are present.