

County: Hampshire/Wiltshire **Site Name:** New Forest SSSI

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

Local Planning Authority: Hampshire County Council, New Forest District Council, Wiltshire County Council, Salisbury District Council, Test Valley Borough Council

National Grid Reference: SU 298081

Ordnance Survey Sheet 1:50,000: 195, 196 **1:25,000:** SU 10, 11, 20, 21, 30, 31, 40, SZ 29, 39

Area:28,947.37 (ha) 71,528.95 (ac)

Date Notified (Under 1949 Act): 1959, 1971, 1974 **Date of Last Revision:** 1979

Date Notified (Under 1981 Act): 7 May 1987 **Date of Previous Revision:** 1987

Date of Last Revision: 28 February 1996 **Date Confirmed:** 14 November 1996

Other Information:

The New Forest is classified as a Grade 1 site in “A Nature Conservation Review” edited by D. A. Ratcliffe (Cambridge University Press, 1977) and includes seven Geological Conservation Review sites. The major part of the site has been designated as a Special Protection Area under the EC Directive 79/409 on the Conservation of Wild Birds and as a Ramsar Site under the Ramsar Convention on Wetlands of International Importance. The site is mainly Crown Land together with the manorial wastes of Plaitford, Furzley, Half Moon, Cadnam, Hale Purlieu and Hightown Commons belonging to the National Trust; Hyde and Gorley Commons and parts of Rockford and Ibsley owned by Hampshire County Council; the rest of Rockford and Ibsley Commons, Minstead Manor, Kingston Great Common, Bisterne Common, West Wellow and Copythorne Common and most of the unimproved meadows are privately owned. Part of Kingston Great Common is a National Nature Reserve and there are three reserves managed by the Hampshire Wildlife Trust at Bagnum, Long Alder Moor and Holmsley. The Crown Land is managed by the Forestry Commission on behalf of the Minister of Agriculture. The Court of Verderers have statutory powers within the Forest although they own very little land and no domestic stock. The Forestry Commission, along with the Verderers, and English Nature have signed a Minute of Intent which provides for the participation of English Nature in the preparation of management plans and consultation over annual management programmes. Selected areas were notified in 1959 and a much larger area in 1971. Further additions were made in 1974, 1979 and 1987.

Reasons for Notification:

The New Forest embraces the largest area of “unsown” vegetation in lowland England and includes the representation on a large scale of habitat formations formerly common but now fragmented and rare in lowland western Europe. They include lowland heath, valley and seepage step mire, or fen, and ancient pasture woodland, including riparian and bog woodland. Nowhere else do these habitats occur in combination and on so large a scale. There are about 4,600 hectares of pasture woodland and scrub dominated by oak, beech and holly; 11,800 hectares of heathland and associated grassland; 3,300 hectares of wet heath and valley mire-fen and also 8,400 hectares of plantations dating from various periods since the early 18th century. Within this matrix of habitats are a range of acid to neutral grasslands where the vegetation

owes much to the local geology and continuous grazing, a situation which is uncommon in lowland England. Scattered around the New Forest and throughout the small pockets of enclosed farmland are a series of unimproved meadows which have similarities with these Open Forest grasslands.

A network of small streams draining the system form an unusual community which results from the combination of nutrient-poor, acid waters and outcrops of neutral enriched soils. There are many ponds of varying sizes and water chemistry including several ephemeral ponds. This wide range of habitats support an assemblage of nationally rare and scarce plants and a nationally important assemblage of rare and scarce invertebrates. The area supports internationally important breeding populations of certain bird species and the wintering population of another as well as an assemblage of birds associated with specific habitats such as old woodland or wetlands. Within the New Forest there are seven sites which are of special geological or physiographic interest including valley mires, the headwaters of the Highland Water, stream sections with exposures of fossil-bearing strata and a gravel pit rich in palaeolithic artefacts.

The New Forest is probably sufficiently large to ensure the long term survival of the characteristic flora and fauna within the wide range of habitats. Smaller isolated examples of the component habitats are vulnerable to biological impoverishment but here in the New Forest has survived largely because of the persistence of a pastoral economy based on the exercise of common rights of grazing and mast together with protection afforded by Crown ownership. This, and the management of vegetation in the Open Forest through burning and cutting programmes, administered by the Forestry Commission on the Crown Lands, maintains the quality of the grazings, ensures the prevention of natural succession and encourages local diversity in plant communities. The pastoral economy in turn depends on the continued existence of a small community of commoners who make up a discrete social unit and this combination of natural and cultural elements contributes to the maintenance of the New Forest habitats.

Geomorphologically the Forest comprises a series of eroded terraces capped with flint gravel, brickearth and other superficial deposits. The terraces are highest and most fragmented by erosion in the north and lowest and most complete in the south. Erosion has exposed the underlying Tertiary strata, in wide valleys and hollows separating the terraces. Soils are mainly acid, poor in nutrients, susceptible to leaching and only slowly permeable. Locally, however, there are enriched areas such as the exposed Headon Beds in the south which support relatively species-rich grassland or mire floras. The Forest streams, mires and abundant wet flushes along slope springlines help to create a humid microclimate which, in the woodlands in particular, provides the right conditions for epiphytic lichens, bryophytes and ferns, a situation which has become rare elsewhere.

The unenclosed woodlands are dominated by oak and beech in varying proportions. Oak is generally dominant on the heavier soils, and some areas comprise nearly monospecific oakwoods, whereas the beech tends to dominate on sandy knolls and well drained terrace edges. Holly is the dominant shrub layer species. The number of tree species is higher in linear riverine woodland where ash is abundant and carr of alder, willow and holly are common. Age structure of the woodland is closely related to past fluctuations in herbivore densities. The oldest generation of trees still standing are oaks and beeches of early 17th century origin. A high proportion of these and later 17th century trees are pollarded. The main younger generations have arisen since about the mid 19th century. Older trees support the richest known woodland lichen flora in lowland Europe, and an exceptionally species-rich deadwood fauna, mainly beetles *Coleoptera*, including the stag beetle *Lucanus cervus* and now rare in

Europe, and flies *Diptera*. The lichen flora includes two rare species, *Catillaria laureri* and *Parmelia minarum* (Sch.8)**. The woods are also rich in fungi that are specific to pasture woodland such as *Hericium erinaceous*, *Mycena picta*, *Creolophus circhatus* and *Flammulaster limulata*. The woodland ground flora varies according to soil type but grazing often gives the impression of it being impoverished. On base-rich soils, however, species diversity increases with grazing whereas on more acid soils the vascular plants may be reduced but bryophytes become more extensive and diverse. Woodland species such as *Dicranum majus*, *Rhitiadelphus loreus* and *Leucobryum juniperoideum* can be common whilst rarer species include *Bassania trilobata* and *Saccogyna viticulosa*. The vascular plants include about 60 species associated with old woodland. These older trees also support a high density of hole-nesting, insectivorous birds, such as redstart *Phoenicurus phoenicurus*, and provide roost sites for several species of bat including the very rare Bechstein's bat *Myotis bechsteini***

The sylvicultural enclosures include 40% broad-leaved trees, mainly oak and beech, which, with the unenclosed woods, comprises the largest tract of native broad-leaved woodland in southern England. The inclosures include many fragments of former pasture woods totalling about 285 hectares and these are relatively unmodified by enclosure. Much of the remaining broad-leaved component comprises mature oak plantation which when in proximity to unenclosed woodland can take on the characteristics of pasture woodland. In South Bentley Inclosure the epiphytic flora has developed with similar species to the adjacent unenclosed Anses Wood. Some of the inclosures have only low grazing pressure and the ground flora then provides food plants for certain invertebrates, such as silver-washed fritillary *Argynnis paphia* and white admiral *Limenitis camilla*.

The heathlands, including grass heaths and acid grasslands comprise a series of plant communities, the composition of which is related to soil structure and permeability and the effects of grazing. Dry heath dominated by heather *Calluna vulgaris* and bell heather *Erica cinerea* and bristle bent *Agrostis curtisii* grades into humid heath in which cross-leaved heath *Erica tetralix* and purple moor-grass *Molinia caerulea* are constant species. The humid heath on slowly permeable and often seasonally waterlogged soils is spatially dominant here although only recognised as a transitional community elsewhere. On the wetter humic soils heather becomes less frequent and typically deer grass *Trichophorum cespitosum*, heath rush *Juncus squarrosus* and the "smaller" *Sphagnum* species *Sphagnum compactum* and *S. tenellum* become frequent. The heathlands have well-developed lichen-rich communities in which a number of *Cladonia* species are present. These include the nationally scarce *C. incrassata* and an abundance of species such as *C. strepsilis* and *Pycnothelia papillaria*. Other lowland plants occur such as the rare dung fungus *Poronia punctata* which grows on pony dung. Within the heathland mosaic, on pockets of richer soils, acid grassland occurs. These areas can change from grass to heath depending on the grazing intensity. They are dominated by bristle bent and purple moor-grass with varying amounts of heather, gorse *Ulex europaeus* and bracken *Pteridium aquilinum*.

The acid to neutral grasslands are strongly influenced by the underlying geology and by grazing. The naturally infertile soils support herb-rich vegetation communities on the drier brown earths and stagnogleys and a complex range of wet acid grasslands on gleys and peats. The acid grasslands are often quite extensive, relatively species-rich and comprise two main elements: (a) species which benefit from heavy grazing and are mostly prostrate or are able to survive in dwarf form and (b) species which are less palatable. The former includes rosette forming species such as hawkbits *Leontodon*, cat's-ear *Hypochoeris radicata*, mouse-ear hawkweed *Hieracium pilosella* and yarrow *Achillea millefolium* and a profusion of small herbs with low growth forms such as tormentil *Potentilla erecta*, heath bedstraw *Galium saxatile*, lousewort *Pedicularis sylvatica*, self heal *Prunella vulgaris*, eyebrights *Euphrasia*, squirrel-tail fescue

Vulpia bromoides, all-seed *Radiola linoides* and numerous sedges. The less palatable species with a more upright growth form include yellow centaury *Cicendia filiformis* which is nationally scarce, common centaury *Centaureum erythraea*, field gentian *Gentianella campestre* and moonwort *Botrychium lunaria*.

The more neutral grasslands known locally as “lawns” occur as linear features following many of the small streams, roadside verges around settlements – village greens, and as glades in association with pasture woodland. They are influenced by such factors as soils, topography, the nutrient quality of floodwater and frequency of numbers of grazing animals. Typical species on the wetter lawns are velvet bent *Agrostis canina* and an abundance of wetland sedges, rushes and herbs. The drier communities around settlements are dominated by common bent-grass *Agrostis capillaris* with some perennial rye-grass *Lolium perenne*, crested dog’s-tail *Cynosurus cristatus*, daisy *Bellis perennis*, and most distinctively mats of abundant chamomile *Chamaemelum nobilis*, which is nationally rare and declining. Associated with these settlement edge lawns that are seasonally poached and heavily grazed are an assemblage of nationally rare and scarce plants. They include small fleabane *Pulicaria vulgaris* and pennyroyal *Mentha pulegium* both (RDB)* (Sch 8)**. Slender marsh bedstraw *Galium debile* (RDB)* and coral necklace *Illecebrum verticillatum*, which is nationally scarce, also occur. Hampshire purslane *Ludwigia palustris* (RDB)* occurs in the poached muddy pools and is confined in England to the New Forest area.

The unimproved meadows in and around the Forest have similarities with the acid to neutral grasslands within the Open Forest. The frequent spring-lines and infertility of the soils have hindered agricultural improvement and these meadow communities are now rare or scarce in England. The main vegetation types are herb-rich, permanent pastures on the drier brown earths and stagno-gleys and a complex range of wet acid grasslands on gleys and peats. The former could be described as the typical grassland of grazed hay-meadows usually dominated by common bent *Agrostis capillaris* and red fescue *Festuca rubra* but containing a high proportion of herbs. The character of the wet grassland is more complex. Moderately-grazed, rush-dominated stands are mostly dominated by sharp-flowered rush *Juncus acutiflorus* and accompanied by soft rush *Juncus effusus* but the other associates can be quite diverse. Lightly-grazed grassland dominated by *Molinia caerulea* is especially variable with both heathy, fen meadow and mire communities present. Pony-grazed grasslands lack any tall dominants and consist of a species-rich mixture of velvet bent *Agrostis canina* and sedges, much like the wetter Open Forest lawns. Within these vegetation types there are pockets containing diverse herb-rich communities. Very dry soils, for instance, support parched acid-grassland which is typically hard-grazed and disturbed and provides suitable habitat for spring annuals such as subterranean clover *Trifolium subterraneum*. In contrast the wettest parts of spring-lines often support mire communities typical of the Open Forest with *Sphagnum* species dominant and scarce plants present such as brown beak-sedge *Rhynchospora fusca*. Much rarer are the base-rich mire communities which occur in close juxtaposition with acid communities such as the small, marshy flushes at Upper Pennington Common.

The Forest contains about 90 clearly separable valley mires, or fen, within about 20 different valley systems. This is thought to be more than survive in the remainder of Britain and Western Europe. This suite of mires sits within a relatively unpolluted catchment and for this reason the greater part of the New Forest has been designated as an internationally important wetland, a Ramsar site. The mires receive the products of leaching from the higher ground and are thus comparatively base-enriched. Structurally they comprise a distinctive sequence of plant communities arranged laterally to the axis and exhibiting increased enrichment from the outer margin to the centre. Similarly, the mires tend to become progressively base-enriched with progress downstream from the valley head, and this also influences the complex

arrangement of plant communities. The zonation from enriched fen along the axes of many mires, to acid mire at the outer margins, gives rise to a great diversity of plant species. The richest mires have in excess of 150 species including many locally distributed and rare plants. Slender cottongrass *Eriophorum gracile* (RDB)* (Sch.8)** is confined in England to sites in the New Forest and one in Surrey. The list of nationally scarce plants found on mires and their heathy margins include pillwort *Pilularia globulifera*, bog orchid *Hammarbya paludosa*, bog hair-grass *Deschampsia setacea*, marsh gentian *Gentiana pneumonanthe*, marsh clubmoss *Lycopodiella inundata*, brown beak-sedge and marsh fern *Thelypteris palustris**

Of the many ponds within the Forest the less acidic ponds support important populations of amphibians, including the rare great crested newt *Triturus cristatus* (Sch.5)**. The wetland habitats collectively form probably the most important single suite of habitats for dragonflies *Odonata* in Britain. Twenty-seven species breed in the New Forest including the rare southern damselfly *Coenagrion mercuriale* (RDB)*. The temporary ponds that dry out in the summer provide ideal conditions for some specially adapted invertebrates including fairy shrimps *Chirocephalus diaphanus* and one such pond is the only known British locality for the tadpole shrimp *Triops cancriformis* both (RDB)* (Sch.5)**.

The plant community associated with the streams is restricted almost exclusively to the New Forest. (The only other stream of this type is the River Fowey on Bodmin Moor.) This is because of the combination of nutrient-poor acid waters and outcrops of neutral-enriched soils. The Lymington River is the largest stream system within the Forest showing all the typical characteristics. The tributary known as the Ober Water is recognised in the Nature Conservation Review as a lowland base-poor stream with a very diverse flora. Surveys of the Forest streams have recorded twenty of the fifty-four British species of fish and a wide variety of invertebrates. Some streams are used by otters, a species which has declined and which is fully protected through Schedule 5**.

The Forest supports populations of nine rare and twenty-five nationally scarce vascular plants*. Of the rare plants five have been mentioned above. Dorset heath *Erica ciliaris* occurs at two locations and the wild gladiolus *Gladiolus illyricus* (Sch.8)**, which is confined to the New Forest in Britain, is present in many of the bracken stands where it is normally associated with bluebells and wood anemones. Heath lobelia *Lobelia urens* is only found at one locality, as is the early gentian *Gentianella anglica* which occurs in association with imported chalk!

The New Forest supports nationally important breeding populations of birds as listed in Annex 1 of the EU Directive on the Conservation of Wild Birds including, nightjar *Caprimulgus europaeus*, woodlark *Lullula arborea*, Dartford warbler *Sylvia undata*, and kingfisher *Alcedo atthis*. The Forest also supports a wintering population of hen harrier *Circus cyaneus* which is also listed on Annex 1. Other breeding birds include an assemblage of waders comprising lapwing *Vanellus vanellus*, redshank *Tringa totanus*, curlew *Numenius arquata*, snipe *Gallinago gallinago* and ringed plover *Charadrius hiaticulata* which all depend to a great extent on the Forest's wetland habitats.

Populations of all Britain's native reptiles are present in the New Forest including sand lizard *Lacerta angilis* (Sch.5)* and smooth snake *Coronella austriaca* (Sch.5), which both occur in suitable localities throughout the heathland.

The wide range of habitats within the New Forest, and its large size, make it an important site for populations of several groups of invertebrates. Of the 2,500 species of British butterflies and moths *Lepidoptera*, nearly half have been recorded from the Forest and over a third of the British species of beetle have been recorded as well as many species from other invertebrate

groups. Many of these species are recorded in the Red Data Book and even more are considered notable. For some of these species, such as the New Forest Cicada *Cicadetta montana*, the New Forest is the only or main centre of distribution in Britain.

The seven sites of special geological or physiographic interest are as follows:

Studley Wood stream section is a prolific Tertiary locality exposing the only complete exposure of the silty Huntingbridge Formation of the Bracklesham Group. This is also the stratotype for the Studley Wood Member of the Formation. This series of units forming the top of the Bracklesham beds is remarkable for its molluscan faunas and the number of species limited to the Formation. Numerous corals, scaphopoda, bivalves and gastropods occur here. This is an outstanding Eocene locality of great interest in studies of Tertiary stratigraphy and palaeontology within the Hampshire Basin and across north western Europe.

Shepherd's Gutter stream section has been known to geologists since at least the middle of the 19th century and this locality is renowned for its rich Tertiary marine faunas. It shows a section through the Selsey Formation of the Bracklesham Group, of Middle Eocene age, and includes several mollusc-rich horizons and one kind of *Nummulites* correlatable with the Isle of Wight and Bracklesham sections. This is a key locality for its correlations faunas. This is a key locality for its correlations faunas between the classic Eocene localities of the Hampshire Basin, and for its prolific molluscan faunas.

Parkhill Enclosure ditch section is the only exposure in England outside the Isle of Wight to show upper middle Headon Bends. The occurrence of a fauna of *Cerithidea ventricosa* and other mollusca in the Headon clays here allows correlation with the type sections of the Isle of Wight. The fauna of well preserved shells and fish remains makes this one of the richest Tertiary faunal localities on the mainland. It is an important site for its palaeontology and for correlations within the Hampshire Tertiary Basin.

Woodgreen gravel pit exposes Pleistocene gravel, deposited by the River Avon, rich in Palaeolithic artefacts. Palaeolithic assemblages provide major evidence for the subdivision of the terrace sequence in The Solent Basin, where they are particularly important owing to a dearth of palaeontological sites. The Woodgreen pit has yielded over 400 artefacts, making it one of the most prolific in The Solent catchment. This is an important site which has significant potential to further elucidate the complex history of the River Avon gravels and the evolution of The Solent river.

Mark Ash Wood is a valley mire complex of considerable importance for palynological and palaeoecological studies. Peat growth at the site dates from the early part of the Devensian late-glacial to the sub-Atlantic period. Mark Ash Wood contains the oldest post-glacial peats in the New Forest area and is exceptional for high accumulation rates during late-glacial times. Macrofossil and pollen analyses have yielded some of the earliest British post-glacial records of bryophytes. Mark Ash Wood is also of importance in tracing the early post-glacial immigration and expansion of plant species, and has been used as a reference site for correlation in southern England.

Cranes Moor is a large mire complex, set in a shallow basin containing significant peat accumulations dating back to Devensian late-glacial times. It is a key reference site for palynological studies in southern England. It is also unusual for the apparently rapid accumulation of peat in the Boreal period, and is therefore particularly important in the study of the early immigration and expansion of flora in post-glacial times. Several studies of vegetational history have been carried out in the post-war period at a number of sub-sites

within the basin including, most recently, an integrated investigation of macrofossils, pollen, and other microfossils, together with radiocarbon correlation of cores.

Highland Water is a unique area demonstrating a combination of low management and low human impact on fluvial processes. It is particularly important on two accounts. First, it provides a valuable opportunity to study the role and influence of vegetation in hydrological and fluvial processes. Second, it is of exceptional value for the study of debris dams which have a significant effect on channel processes, travel times of flood hydrographs, channel roughness and flow resistance. The hydrological and fluvial characteristics of the Highland Water are typical of those that formerly occurred in much of southern England.

- * Nationally rare species are equivalent to those listed in the British Red Data Book which include those considered endangered, vulnerable or rare.
Nationally notable/scarce species are estimated to occur in 16–100 10km grid squares in Britain.

- ** Species as listed under Schedule 5 or Schedule 8 of the Wildlife and Countryside Act, 1981, as amended.