Citation

County: **Norfolk and Suffolk** **Site name:** **Breckland Forest**

District: Forest Heath, St Edmundsbury, Breckland, Kings Lynn and West Norfolk

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

Local Planning Authority: Suffolk County Council, Norfolk County Council, Forest Heath District Council, St Edmundsbury Borough Council, Breckland District Council, Kings Lynn and West Norfolk Borough Council

National Grid Reference: TL819839 **Area:** 18,078.70 (ha)

Ordnance Survey Sheet 1: 50 000: 143, 144, 155

Ordnance Survey Sheet 1: 10 000: TF71SE, TF70NE, TF70SE, TF80NW, TF80SW, TL79NE, TL79SE, TL79SW, TL78NE, TL78SE, TL78NW, TL77NW, TL77NE, TL77SW, TL77SE, TL89NW, TL89SW, TL89SE, TL88NW, TL88NE, TL88SW, TL88SE, TL87NW, TL87NE, TL87SW, TL87SE, TL99SW, TL98NW, TL98NE, TL98SW, TL98SE

Date Notified (Under 1949 Act): Not applicable

Date Notified (Under 1981 Act): 15 November 2000

Reasons for Notification:

The clear fell areas and young plantations within Breckland Forest SSSI provide suitable breeding habitat for woodlark *Lullula arborea* and nightjar *Caprimulgus europaeus,* which occur in internationally important numbers.

Breckland Forest supports five vascular plants listed on Schedule 8 of the Wildlife and Countryside Act: perennial knawel *Scleranthus perennis* subsp. *prostratus* (an English endemic restricted to the East Anglian Breckland), red-tipped cudweed *Filago lutescens,* maiden pink *Dianthus armeria,* Breckland mugwort *Artemisia campestris* and spiked speedwell *Veronica spicata* subsp. *spicata,* the last of which was introduced at this site but within the UK is restricted to Breckland. The forest also supports an important assemblage of Nationally Rare and nationally scarce vascular plant species , a number of which are largely restricted to East Anglia and occupy habitats characteristic of Breckland.

Breckland Forest SSSI also supports an exceptionally rich invertebrate fauna with Red Data Book and nationally scarce species across most taxonomic groups that have been studied.

A mammal species associated with the conifer plantations is the red squirrel *Sciurus vulgaris*. Although the population is small it is the only one extant in East Anglia.

Contd/... (page 1 of 4)

Within Breckland Forest SSSI are three important geological areas, formerly notified as separate SSSIs. Warren Hill, High Lodge and Beeches Pit all provide evidence for interpreting and understanding the links between the geography, climate, environment and human history of East Anglia during the Middle Pleistocene.

General Description

Breckland Forest SSSI lies between Bury St Edmunds in Suffolk and Swaffham in Norfolk. The majority of the site is within Thetford Forest Park, the largest commercial forest in lowland England. Breckland is characterised by its climate and its soils. Its climate is described as semi-continental, being the driest region of the British Isles and subject to great extremes of temperature. The soils are complex, but are typically very sandy free-draining mixes of chalk, sand, silt, clay and flints.

Planting of the site with conifers began in 1922. Prior to this the land was mainly Breckland heath, unstable sand dunes and marginal agriculture. Corsican pine *Pinus nigra* subsp. *laricio* is the dominant species comprising over 70% of all plantings. Scots pine *P. sylvestris*, Douglas fir *Pseudotsuga menziesii* and larch *Larix* spp. also feature in the forest and ten percent of the trees are broadleaves. The majority of the initial plantings reached the end of their first rotation in the mid 1970s. Since then the harvesting of these and subsequent plantings has created a continuous supply of clear-felled areas and young plantations which are suitable as breeding territories for woodlark and nightjar, which occur in internationally important numbers.

The SSSI regularly supports small numbers (less than 1% of the GB population) of goshawk *Accipiter gentilis.*

In addition to the important assemblage of Schedule 8 species the SSSI supports a further five Nationally Rare (Red Data Book) and eleven nationally scarce vascular plant species. A number of these are largely restricted to East Anglia and occupy habitats which are characteristic of Breckland. In the forest many of them are confined to field edges and tracksides, on grassy banks and along open rides where remnants of characteristic Breckland grass-heath habitats survive. An example is Breckland thyme *Thymus serpyllum* which occurs in short Breckland grass-heath swards, usually rabbit or sheep grazed. However a few species such as tower mustard *Arabis glabra*, and dense silky-bent *Apera interrupta* colonize open ground within the main plantation blocks following clear-felling or other disturbances. Species such as smooth rupturewort *Herniaria glabra*, mossy stonecrop *Crassula tillaea* and purple-stemmed cat's tail *Phleum phleoides* also favour open, disturbed areas on drought prone sandy or stony soils.

Breckland Forest supports an exceptionally rich invertebrate fauna with Red Data Book and Nationally scarce species across most taxonomic groups that have been studied. At least 37 Red Data Book species and 129 nationally scarce species have been recorded from various parts of the forest. They mainly occupy remnants of habitats which have survived afforestation such as dry grassland, wetlands and temporary pools

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Breckland Forest (cont..... page 3 of 4)

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Within Breckland Forest SSSI are three important geological areas, formerly notified as separate SSSIs. Warren Hill, High Lodge and Beeches Pit all provide evidence for interpreting and understanding the links between the geography, climate, environment and human history of East Anglia during the Middle Pleistocene. Between them the three sites provide evidence of conditions prior to and after the Anglian glaciation in this area and contribute to an overall understanding of this period of time in Britain. These sites will continue to be of importance in future research on the Pleistocene of East Anglia.

The sequence at Warren Hill is divided into two units; the Warren Hill Sands and Gravels (of variable thickness) and the Warren Hill sands and silts (over 4.6m thick). Clast lithological analysis is important in the interpretation of the gravels at this site. Early workers interpreted the deposits as being glacial in origin, but the absence of characteristic Anglian lithologies such as *Rhaxella* chert, indicates that the deposits were not laid down under glacial conditions. The presence of quartzite, quartz and Carboniferous chert indicates that the deposits may be the product of the river system that deposited the Ingham sand and gravels to the east. This, coupled with the bedding structures and coarse gravels, lends support to the idea of a larger river flowing from the Midlands, across the present Fen Basin and East Anglia into the North Sea. This was the Bytham, or Ingham River.

High Lodge is a small clearing in Mildenhall Woods about 3km east of Mildenhall. This classic site has been the subject of a number of investigations and is of great importance both for its relevance to the interpretation of the Pleistocene succession of the area and evidence for the presence of man in Britain prior to the Anglian Glaciation. Chronologically, the succession starts with clays containing organic material of lacustrine origin (High Lodge Clayey Silts and High Lodge Sands). These have been deformed by glacial processes. Physically underlying the lacustrine sequence is a lodgement till belonging to the Anglian Glaciation. The lacustrine clays are overlain by sands and gravels of a fluvio-glacial origin (Mildenhall Sands and Gravels) and a till which is lithologically identical to the lodgement till. The lacustrine clays have provided a pollen assemblage indicative of cool-temperate conditions. Evidence from fossil insect faunas complement the pollen evidence._Fossil vertebrate remains from the clays include *Dicerorhynus* and *Palaeotoxodon*. Artifacts recovered from the clay provide evidence for the presence of pre-Anglian humans in Britain. The deformation of the these deposits during the Anglian Glaciation, makes their interpretation controversial, and this remains a key site with much further research potential.

Beeches Pit is a small, disused brick pit situated in a plantation close to the village of West Stow, about 8km northwest of Bury St Edmunds.

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Breckland Forest (cont..... page 4 of 4)

Beeches Pit has been the subject of several excavations. Several metres of sediments are present, and these include tufa, calcareous silts, organic clays and sands. The relationships between these sediments are complicated by rapid lateral changes and the interdigitation of different units, but they rest on a chalky till. A fossil molluscan fauna occurs in the tufa and other sediments. The faunal composition suggests that the tufa formed in a temperate forest with deep water nearby. This fauna is exceptional in being composed of taxa which are either extinct, or whose modern ranges do not overlap today. Fossil vertebrates including fish, amphibians and mammals are present. This fauna is compatible with the environmental interpretation deduced from the molluscs, and the presence of the water vole (*Arvicola cantiana*), the pine vole (*Pytymys subterraneus*) and the auroch (*Bos primigenius*) indicate that the sediments were deposited during the Hoxnian interglacial. A number of artifacts have also been found which date to the Hoxnian interglacial. An uranium- series date indicates that the tufa is over 300,000 years old, and which is consistent with the age indicated by the vertebrates.

Other information

Woodlark and goshawk are specially protected by being listed on Schedule 1 of the Wildlife and Countryside Act 1981(as amended)**.**

Nightjar**,** woodlark and goshawk are included on Annex 1 of the European Communities Directive 79/409/EEC on the Conservation of Wild Birds.

Perennial knawel, Breckland mugwort, maiden pink, red-tipped cudweed and spiked speedwell are specially protected by being listed on Schedule 8 of the Wildlife and Countryside Act 1981(as amended)**.**

Perennial knawel, maiden pink, red-tipped cudweed, tower mustard, red squirrel, nightjar and woodlark are priority species of the UK Biodiversity Action Plan**.**

Warren Hill, High Lodge Mildenhall and Beeches Pit are sites which have been selected by the Geological Conservation Review (GCR)**.**

Beeches Pit SSSI previously notified (under 1981 Act): 1988
High Lodge, Mildenhall SSSI previously notified (under 1949 Act): 1971
(under 1981 Act): 1986
Warren Hill SSSI previously notified (under 1981 Act): 1997