

COUNTY: SHROPSHIRE

SITE NAME: SWEAT MERE & CROSE MERE

DISTRICT: NORTH SHROPSHIRE

SITE REF: 15WJQ

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

Local Planning Authority: SHROPSHIRE COUNTY COUNCIL, North Shropshire District Council

National Grid Reference: SJ 434304

Area: 38.58 (ha.)

Ordnance Survey Sheet 1:50,000: 126

1:10,000: SJ 43 SW

Date Notified (Under 1949 Act): 1953

Date of Last Revision: 1963

Date Notified (Under 1981 Act): 1986

Date of Last Revision: 8 November 1994

#### Other Information:

A nationally important site listed in 'A Nature Conservation' edited by D A Ratcliffe, Cambridge University Press, 1977.

Proposed for inclusion in the Midlands Meres and Mosses Ramsar site.

Site notified for biological and geological interests.

#### Description and Reasons for Notification:

The Meres and Mosses of the Clwyd-Shropshire-Cheshire-Staffordshire plain form a nationally and internationally important series of open water and peatland sites. These have developed in natural depressions in the glacial drift left by the ice sheets which covered this plain some 15,000 years ago. The majority lie in Cheshire and north Shropshire, with a small number of outlying sites in adjacent parts of Staffordshire and Clwyd.

The origin of most of the hollows can be accounted for by glaciation but a small number have been formed at least in part by more recent subsidence resulting from the removal in solution of underlying salt deposits.

There are more than 60 open water bodies known as 'meres' or 'pools' and a smaller number of peatland sites or mires known as 'mosses'. The meres range in depth from about one metre to 27 metres and have areas varying between less than a hectare to 70 hectares.

Although the majority of the meres are nutrient rich (eutrophic), the water chemistry is very variable reflecting the heterogeneous nature of the surrounding drift deposits. Associated fringing habitats such as reedswamp, fen, carr and damp pasture add to the value of the meres. The development of these habitats is associated with peat accumulation which in some cases has led to the complete infilling of the basin. During this process the nutrient status of the peat surface changes and typically becomes nutrient poor (oligotrophic) and acidic thus allowing species such as the bog mosses *Sphagnum* spp. to colonise it. The resulting peat bogs are the 'mosses'. In a few cases colonisation of the water surface by floating vegetation has resulted in the formation of a quaking bog known as a 'schwingmoor'.

Sweat Mere and Crose Mere are two dissimilar meres constituting a site of exceptional importance. They are the remnants of a once considerably larger wetland complex which included Whattall Moss, which in historic times was an acid peat bog but now is almost entirely affected. The meres and their surrounds form a complex of open water, reedswamp, fen and woodland habitats unrivalled in Shropshire for the variety of natural features of special scientific interest. Both meres have been subject to detailed research and intensive study. In particular the phytoplankton and the pollen stratigraphy of Crose Mere are very well documented.

### Biology

Sweat Mere is unique as an example of a hydrosere since the succession from open water to alder carr is remarkably well displayed. It was described in Tansley's influential book 'The British Islands and their Vegetation' (1939), following an account by Clapham. The small area of open water which remains is surrounded by extensive floating reedswamp, composed mainly of lesser reedmace *Typha angustifolia* but also comprising an area of common reed *Phragmites australis*. Adjacent to this is a zone of fen dominated by greater tussock-sedge *Carex paniculata*, which is surrounded by grey willow *Salix cinerea* and alder *Alnus glutinosa* carr. There is also an area of pedunculate oak *Quercus robur* and downy birch *Betula pubescens* woodland on dry peat. The fen and carr zones have a rich flora which includes several uncommon species, such as elongated sedge *Carex elongata*, marsh fern *Thelypteris thelypteroides*, greater spearwort *Ranunculus lingua* and alder buckthorn *Frangula alnus*.

The fen and carr zones at Sweat Mere are also of importance for the diverse snail fauna which they support which includes the uncommon snail *Vertigo moulinsiana* found here at its only known Midlands locality.

Croze Mere is an eutrophic mere with narrow marginal zones of reedswamp and fen. Much of the swamp is dominated by lesser reedmace, which appears to be replacing the formerly more abundant common reed. Great fen-sedge *Cladium mariscus*, which is rare in the West Midlands, is locally dominant and bulrush *Schoenoplectus lacustris* spp. *lacustris* occurs in places. Small areas of fen pasture around Croze Mere are exceptionally rich and have a flora which includes several rare species, for example grass-of-Parnassus *Parnassia palustris* which is believed to occur at only one other site in Shropshire, marsh helleborine *Epipactis palustris*, long-stalked yellow-sedge *Carex lepidocarpa*, blunt-flowered rush *Juncus subnodulosus* and knotted pearlwort *Sagina nodosa*. There is evidence that floating and submerged aquatic plants have declined in abundance and variety in recent years.

### Geology

Croze Mere is important for reconstructing Devensian late-glacial and Flandrian vegetation and environmental history in the north Midlands. It has been studied in some detail, including pollen analysis. This type of pollen analysis is an important means of environmental reconstruction, whereby information on flora and vegetation allows inferences about other aspects of ecosystems such as climate, soil and human impact. Eleven radiocarbon dates provide important geochronological control on the pollen analysis, and these highlight some of the problems in estimating pollen deposition rates. The radiocarbon-dated profile from Croze Mere provides important comparisons both regionally and nationally. The pattern of vegetation changes at Croze Mere shows close similarities with that from the lowlands of north-west England.