

Date Notified: 28 November 1995

File ref: NX 91/3

**County:** Cumbria      **Site Name:** St Bees Head

**District:** Copeland

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

**Local Planning Authority:** Copeland District Council

**National Grid Reference:** NX 945133

**Area:** 171.52 (ha) 423.7 (ac)

**Ordnance Survey Sheet 1:50,000:** 89

**1:10,000:** NX 91 SE, NX 91 NE,  
NX 91 SW, NX 91 NW

**Date Notified (Under 1949 Act):** 1959

**Date of Last Revision:** 1968, 1984, 1995

**Date Notified (Under 1981 Act):** 1995

**Other Information:**

1. The boundary of this site has been modified by an extension at this revision, to incorporate new geological sites.
2. This site incorporates five Geological Conservation Review sites, locations in Saltom Bay and Fleswick-St Bees Head, St Bees.
3. A large part of the site is managed as a nature reserve by the Royal Society for the Protection of Birds.

**Description and Reasons for Notification:**

St Bees Head is the most westerly point on the Cumbria coast, approximately 1 km south-west of Whitehaven. The SSSI comprises a 8 km stretch of coast between St Bees and Whitehaven and encompasses the sheer cliff face, an area of cliff-top grassland and the shore down to the mean low-water mark. The cliffs reach a height of 90 m in places and expose the St Bees Sandstone, some sections of which are of great geological interest for their sedimentary structures. Further south, the cliffs at St Bees are of considerable importance for interpreting late Devensian glacial events and environmental conditions. Further north, in Saltom Bay the foreshore and adjacent areas provide the best exposure of the Permian rock sequence and marine strata in Cumbria and also the best available exposure of the Whitehaven Sandstone formation.

The *biological* interest of the site is represented in a number of different 'habitats': natural cliff-top grassland and heath, sheer cliff face and cliff-fall rubble, shingle and wave-cut platform. The outstanding interest of this area lies, however, in the sheer cliffs which provide the only breeding site on the coast of Cumbria for a variety of colonial seabirds. These include over 2,000 pairs of guillemots along with lesser numbers of fulmar, kittiwake, razorbill, cormorant, puffin, shag and herring gull. The cliffs are, in addition, the only breeding site on the entire coast of England for black guillemots.

Several other birds are known to use this site regularly for breeding and these include the tawny owl, sparrowhawk, peregrine, raven and rock pipit, which is known to breed in only one other site in Cumbria.

The rugged cliff face supports a diverse flora in the crevices and ledges of the crumbling sandstone. Towards the cliff base, sea pink or thrift *Armeria maritima*, scurvygrass *Cochlearia officinalis* and sea campion *Silene maritima* are commonly found. Sea spleenwort *Asplenium marinum* occurs in damp crevices and rock samphire *Crithmum maritimum* and the rare rock sea lavender *Limonium binervosum* have also been recorded. Towards the top of the cliff, bloody cranesbill *Geranium sanguineum*, wood vetch *Vicia sylvatica* and orpine *Sedum telephium* are found and soft shield-fern *Polystichum setiferum* occurs in several rocky recesses. Along the cliff top, on the dry sandy soils grassland with species such as dyer's greenweed *Genista tinctoria* alternates with patches of western gorse *Ulex gallii*, heather *Calluna vulgaris* and bracken *Pteridium aquilinum*.

The *geological* interest of the site is concentrated in three main areas, between Fleswick and Rottington Beck and the cliffs of St Bees golf course in the south and around Saltom Bay at the North End of the site.

The middle part of the Lower Triassic St Bees Sandstone is magnificently exposed at Fleswick Bay. The succession is dominated by fine to medium grained sandstones bounded by major erosion surfaces. Sedimentary structures include planar-tabular and trough cross-bedding, with minor cross-laminated siltstone and mudrock intervals. The erosion surfaces separate a series of fining-upwards rock units, which are similar to those of modern, sandy, braided-river deposits. Further south the upper St Bees Sandstone is seen. Sedimentary structures such as infraformational conglomerates and major erosion surfaces are well-developed and cross-bedding here indicates fluvial transport towards the north-north-west. An important feature is the presence of soft sediment deformation structures which were produced by water escaping from the sediment after deposition. This is a key site for the demonstration of fluvial environments in rocks and Triassic age.

The cliffs of the St Bees golf course and further south are a site of considerable importance for interpreting Late-Devensian glacial events and Late-glacial environmental conditions in north-west England. Coastal sections in a belt of hummocky deposits have over the years revealed a succession of interbedded tills, sands and gravels. Although interpretations differ in detail, parts of the succession have been referred to a re-advance of Scottish ice on to the Cumbrian coast. The upper part of the succession is also significant in providing lithostratigraphic and biostratigraphic evidence for Late-glacial environmental conditions. Radiocarbon dates, pollen and coleoptera from a sequence of organic deposits together provide complementary evidence for the sequence and timing of environmental change during the Windermere Interstadial and Lock Lomond Stadial. St. Bees is therefore a key site both for assessing the evidence for a re-advance of Scottish ice and for palaeoenvironmental studies.

Some of the foreshore in Saltom Bay and adjacent areas (e.g. disused quarries) provide the best exposure of the Permian rock sequence in West Cumbria. A basal breccia (brockram) rests unconformably on the Whitehaven Sandstone (Carboniferous) and passes upwards into the Saltom Dolomite, an Upper Permian marine carbonate. The overlying St Bees Shales (Upper Permian) are seen at Barrowmouth, and southwards and ascending sequence in the lower part of the St Bees Sandstone shows a variety of sedimentary features typical of a fluvial environment. This is a key locality affording sections showing a variety of Lower and Upper Permian environments and facies.

The northernmost section of foreshore, towards Whitehaven is the best available exposure of the Whitehaven Sandstone Formation, a sequence of red sandstones of middle Westphalian (probably Westphalian C) age. They were originally thought to lie unconformably on the underlying grey Coal Measures, but they are now believed to be conformable. Their reddening is thus probably linked with that of the Etruria Formation in the Midlands coalfields. The sedimentology of these strata have not been studied in detail, which will be essential if the exact relationship of the sandstones to the other British sequences is to be determined; and Saltom Bay provides the best available section for such a study. This is a site of considerable scientific significance.

The coastal section at Barrowmouth is the best exposure of late Permian marine strata in Cumbria. The marine strata are represented by 4.6 m of varied shallow-water dolomite (Saltom Dolomite Formation) that was formed near the eastern edge of the Bakevellia Sea. Barrowmouth Beach is the only GCR site to display marine Permian strata from the eastern margin of the Bakevellia Sea. Common fossils in the sequence include the bivalves *Bakevellia* and *Permophorus*.