

COUNTY: KENT

SITE NAME: FOLKESTONE WARREN

DISTRICT: DOVER/SHEPWAY

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

Local Planning Authority: DOVER DISTRICT COUNCIL/SHEPWAY DISTRICT COUNCIL

National Grid Reference: TR 276386 **Area:** 299.4 Ha (739.8 acres)

Ordnance Survey Sheet 1:50,000: 179 **1:10,000:** TR 23 NW & NE; TR 34 SW

Date Notified (Under 1949 Act): 1951 **Date of last Revision:** 1981

Date Notified (Under 1981 Act): 1987 **Date of last Revision:** –

Other Information:

Folkestone Warren is listed in 'A Nature Conservation Review'. Three Geological Conservation Review sites fall within the SSSI, and a fourth overlaps with this site and with the Dover to Kingsdown Cliffs SSSI. The SSSI has been slightly extended.

Reasons for Notification:

Folkestone Warren is of considerable biological, geological and physiographical interest. The site spans the coastline between Folkestone and Dover and encompasses the range of marine and terrestrial habitats associated with the chalk cliffs, and with the underlying Gault clay and Lower Greensand exposed at the western end of the site. These habitats support outstanding assemblages of plants and invertebrates, together with individual species which are nationally uncommon.

On the cliff tops and further inland are small areas of chalk grassland, whilst on the chalk cliff ledges and slopes are plant species with a preference for maritime or calcareous habitats. Several are rare nationally and some with mainly continental distribution reach their northernmost point in Great Britain at this site. Their survival on this stretch of coast may be largely attributable to its warm, south facing, sheltered climate, which is comparable to that of regions several degrees latitude to the south. Many rare invertebrates breed within the site, representing several taxonomic groups and also including species with a preference for warm climates. The site is also a major landing place for migrant insects from the continent which may form temporary colonies.

The site contains one of the most Important localities for marine interest between the Isle of Wight and Flamborough Head, by virtue of the combination of intertidal habitats and communities, another rare species which are present. Also of considerable interest are the plant and animal communities of the adjoining sublittoral zone.

Terrestrial Interest

Chalk is exposed for much of the length of the site, the underlying gault clay creates instability in the chalk and landslips occur from time to time resulting in a mosaic of cliff ledges, scree, bare faces and undercliffs, of varying slope and aspect. This configuration is best developed at the eastern end of the site where the cliffs are undefended. The cliff vegetation is predominantly calcareous grassland but scrub is present on the more stable undercliffs, and there is a characteristic assemblage of plant species at the spray-line which includes such national rarities as sea-heath *Frankenia laevis*, curved hard-grass *Parapholis crura* and golden samphire *Inula crithmoides*. Above the sprayline, plant species typical of calcareous grassland and of maritime habitats grow side by side, resulting in plant communities which are considered rare in Europe. Several nationally

scarce plant species are represented here, including wild cabbage *Brassica oleracea* and the Dover variety of Nottingham catchfly *Silene nutans* var. *nutans*, whilst the humid climate favours the growth of species which inland are restricted to woodlands on calcareous soils, such as stinking iris *Iris foetidissima* and wood spurge *Euphorbia amygdaloides*. The clove-scented broomrape *Orobanche caryophyllacea*, in Great Britain only known from five sites in East Kent, is also present.

The areas of chalk grassland on the cliff tops and inland are chiefly dominated by sheep's-fescue *Festuca ovina*, tor-grass *Brachiopodium pinnatum* and upright brome *Bromus erectus*, and a variety of herb species characteristic of chalk soils are present. These include early spider-orchid *Ophrys sphegodes*, and horseshoe vetch *Hippocrepis comosa*, food plant of the larvae of the Adonis blue butterfly, which breeds within the site.

The Gault and Lower Greensand cliffs at the western end of the site are unstable and sparsely vegetated. In the Warren, landslips have given rise to a succession of steep, broken slopes where scrub and woodland is developing and there are several small ponds.

The combination of southerly aspect, chalk substratum and maritime influence of the site provides favourable conditions for a wide diversity of invertebrate species, several of which occur sparsely if at all outside south east England. These include the harvestman *Trogulus tricarinatus* and the millipede *Polydesmus testaceus*. A number of rare Lepidoptera species have bred within the site including the fiery clearwing moth *Bembecia chrysidiformis*, known only from Folkestone Warren in Britain. Regular migrants to the site from the continent include the sub-angled wave moth *Scopula nigropunctata*.

The ornithological interest of the site includes cliff-nesting and wintering bird species and migrants, particularly passerines such as chats and warblers in the autumn, which make landfall in Folkestone Warren and in other areas of scrub. The site contains one of the two cliff-nesting colonies of housemartins in the county and fulmars breed on the cliffs in reasonable numbers for Kent. Small numbers of purple sandpiper overwinter on the rocky foreshore at Copt Point and below Shakespeare Cliff.

Littoral Interest

The range of geological substrata exposed on the shore provides a diversity of intertidal habitats and these are colonised by a wide variety of marine plants and animals in characteristic assemblages. Many species found here are rare in south east England or nationally and reach their eastern limit of distribution in the Eastern Channel at this site.

The chalk shore at Abbots Cliff and Shakespeare Cliff are among the better examples of their type in south east England. They possess full vertical shore zonation and a wide range of plant and animal assemblages characteristic of this soft rock are present on the wave cut platform and chalk boulder habitats, the latter being continually renewed from the unprotected cliff face. The wave exposed headland at Abbots Cliff is animal dominated in contrast to the Shakespeare Cliff site with its luxuriant algal growths.

The clay bands of the Lower Chalk form wave cut intertidal platforms between Shakespeare Cliff and Abbots Cliff, and in East Wear Bay. These clays support characteristic and unusual assemblages of small algal species with many ephemerals and including rarities such as *Scinaia forcillata*, *Sphacellana* spp and *Derbesia tenuissima*, and species well outside their normal limits of distribution, such as *Chorda filum*.

Copt Point, formed principally of hard Lower Greensand, is a unique site in Kent and south east England. It supports algal assemblages more typical of northern and western England including the furoid algae *Pelvetia canaliculata* and *Ascophyllum nodosum*, which are very rare on natural substrata in the south east. The intertidal fauna are a so

unusual for south east England, being particularly species-rich and with some species rarely recorded east of the Isle of Wight.

Sublittoral Interest

Whilst the SSSI boundary follows Mean Low Water Mark, there are also marine communities of interest on the lower shore and in the sublittoral which itself falls into three fairly distinct regions. Off Copt Point Folkestone, the sea-bed is rocky (greensand), but the presence of the sewage outfall has resulted in much of the area becoming dominated by extensive mats of mussels, upon which are feeding large numbers of starfish. Species diversity here is low, although potentially could be high in East Wear. At the sea bed in the shallow sublittoral is predominantly sandy, and supports polychaete worms, bivalve molluscs and many juvenile flat fish.

The most interesting area is off Abbot's Cliff and Shakespeare Cliff where there is an almost continuous belt stretching to around 300 m offshore which consists of chalk bedrock overlain with chalk boulders up to 2m high. In places, clay and marl bands in the Lower Chalk are exposed, so providing a variety of different substrata for the flora and fauna. There are rich growths of algae, including kelps, and animal 'turf', together with a range of larger animals. The sublittoral chalk habitat is scarce in Kent, and the site may mark the eastern limit of distribution along the English Channel of species such as the kelp *Laminaria nyperborea*.

Geological Interest

The coastline between Folkestone and Dover contains two internationally important reference sites for stratigraphic studies of certain stages of the Cretaceous Period in geological history, and the formations present are of importance for the vertebrate and invertebrate fossils which they yield in addition the succession of coastal landslips which has taken place in Folkestone Warren is of considerable geological interest.

The series of cliff sections at the western end of the site, with some 50m of Folkestone Beds and Gault, represents the most important single locality for studying the sedimentology and stratigraphy of these formations in England. The sequence has been the focus of extensive research and represents the historical type section for both the Folkestone Beds and the Gault. This is an historic locality of international importance for stratigraphic and palaeontological studies in the Albian the Cretaceous period. In addition, the East Wear Bay section of the Gault Cliffs has yielded a selection of reptiles from several horizons and is considered to be the best Gault reptile site in Britain. The reptiles are often well localised, and they may be dated by abundant ammonites. The reptiles are mainly marine forms; turtles *Rhinochelys*, ichthyosaurs *Ophthalmosaurus*, plesiosaurs *Cimiliosaurus*, pliosaurs *Polyptychodon*, and pterosaurs *Ornithocheirus*. The East Wear Bay section has produced type specimens of several species, and fresh erosion maintains the potential of the site.

The chalk sections which span this site together with those which fall within the Dover to Kingsdown Cliffs SSSI are an internationally important stratigraphic reference site which provides extensive and near continuous cliff and shore exposures of the Cenomanian, Turonian and Coniacian Stages of the Cretaceous Period (Lower, Middle and early Upper-Chalk). The site is historically very important as many geological principles, such as biostratigraphic zonation were tested here during the early development of geology. Many parts of the succession are fossiliferous and, in particular, the upper parts of the Turonian and lower parts of the Coniacian are rich in *Micraster*, which have contributed, and still are contributing to our knowledge of evolution.

The area of coastal landslides at Folkestone Warren which includes both Chalk and Gault, has probably been more intensively studied than any other of comparable size in Great Britain. This is largely because it is crossed by the main Folkestone-Dover railway

line, which on occasion has been displaced by slipping (notably in 1915), creating an immediate demand for detailed studies and monitoring. The site has suffered twelve major slips since 1765, and is now protected by a complex of coastal defence works whose long-term effect on the movements provides a field of future study.