

Date Notified: 12 December 1997

File ref: SD 26/2

County: Cumbria **Site Name:** South Walney & Piel Channel Flats

District: Barrow-in-Furness

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

Local Planning Authority: Borough of Barrow-in-Furness

National Grid Reference: SD 220650 **Area:** 2,332.85 (ha) 5,655.71 (ac)

Ordnance Survey Sheet 1:50,000: 96 **1:10,000:** SD 16 NE/SE, SD 26 NW/SE

Date Notified (Under 1949 Act): 1951 **Date of Last Revision:** 1975

Date Notified (Under 1981 Act): 1986 **Date of Last Revision:** 1997

Other Information:

The boundary of the South Walney & Piel Channel SSSI has been modified at this notification to include areas of saltmarsh, intertidal mud and rocky shore adjacent to Jubilee Bridge in the Walney Channel and a section of the open coast on the west side of Walney Island. Areas below Mean Low Water are not included.

The South Walney & Piel Channel Flats are listed as a key site in 'A Nature Conservation Review' edited by D. A. Ratcliffe, published by Cambridge University Press, 1977. The SSSI includes the South Walney part of the Walney Island Geological Conservation Review Site.

The South Walney & Piel Channel SSSI is contiguous with the Duddon Estuary SSSI, within the Walney Channel, and the Morecambe Bay SSSI. The majority of the site forms part of the Morecambe Bay Special Protection Area under the EC Directive on the Conservation of Wild Birds (Directive 79/409/EEC), and a wetland of international importance under the Ramsar Convention.

Description and Reasons for Notification:

South Walney and Piel Channel flats lie directly south of Barrow-in-Furness. The site comprises the southern section of the Walney Channel together with Piel, Roa and Foulney Islands and the southern tip of Walney Island.

The site is of both geological and biological interest and displays a diverse association of maritime habitats which include shingle, sand-dunes, mudflats, saltmarsh, rocky shores and artificial freshwater and brackish lagoons. Extensive areas of shingle around South Walney and Foulney Island support one of the richest shingle beach flora in Britain. In the channel between Walney Island and the mainland extensive intertidal flats have formed, protected from strong wave action. The western side is dominated by saltmarshes, including the largest area of ungrazed saltmarsh in South Cumbria. These saltmarshes also support one of the most diverse assemblages of saltmarsh plant communities on the Cumbria and Lancashire coasts. The extensive intertidal flats range from mud and muddy sand to wave-exposed sands at the entrance to the Walney Channel and include areas of mixed pebble/sediments. These support a

high diversity of marine communities and include beds of two nationally scarce eelgrasses which occur on the eastern side of the channel. A rich marine life is present on the tide-swept scars which lie on the edge of the Walney Channel. The variety of habitats, coupled with the extensive areas of shingle, saltmarsh and mudflats, provide an abundance of feeding, roosting and breeding bird sites for nationally and internationally important numbers of breeding and wintering birds. The site forms an integral part of the much larger series of internationally important maritime habitats which make up Morecambe Bay.

The site is important for studies in coastal geomorphology. Walney Island is a barrier island, a type of large offshore bar. There are few features of this type in Britain, and Walney Island is exceptional in being the produce of erosion and reworking of glacial sediments rather than coastal deposition. The spits at the northern and southern ends of Walney Island represent the ends of the offshore bar. The two spits differ from one another. South End Haws consists of shingle and lacks dunes, whereas North End Haws is constructed from sand and has sand dunes. Both spits are important because they are set in a tidal environment where the tidal range is in excess of four metres.

One of the largest areas of vegetated shingle in Britain, a rare habitat in both Britain and Europe, has formed around South Walney and Foulney Island from marine erosion of the underlying boulder clay. This supports rich pioneer communities, along with grasslands and saltmarsh-influenced habitats. On Foulney, the high organic input from drift seaweed and other organic material enables dense strands of sea beet *Beta vulgaris maritima*, sea-kale *Crambe maritima*, curled dock *Rumex crispus* and sea campion *Silene maritima* to grow on the back of the storm ridge. The spit at the end of South End Haws supports one of the richest shingle beach flora in Britain, influenced by the high input of nutrients from nesting birds. Around the spit the high tide line is marked by oraches *Atriplex* spp. Other plants of the pioneer communities include common scurvy grass *Cochlearia officinalis*, yellow horned-poppay *Glaucium flavum*, mayweeds *Tripleurospermum* spp., sticky groundsel *Senecio viscosus*, sea sandwort *Honkenya peploides* and the local portland spurge *Euphorbia portlandica*. The nationally scarce oyster plant *Mertensia maritima*, a species characteristic of northern shingle beaches, has been recorded.

The thin organic soils which have developed on interior shingle ridges support a variety of vegetation types, including species-rich red fescue *Festuca rubra* grasslands, and moss-lichen grassland on more stable areas less prone to flooding. Saltmarsh plants including common sea-lavender *Limonium vulgare* and sea purslane *Halimione portulacoides* colonise the lower, silted shingle hooks on Foulney Island with common saltmarsh grass *Puccinellia maritima*-dominated vegetation present on South Walney, and these are significant sites for demonstrating saltmarsh influence on shingle vegetation. Sand and gravel extraction at South Walney has modified a substantial area and created a series of saline and brackish lagoons and shingle areas which provide feeding habitat for waders and wildfowl as well as nesting and roosting sites.

At the tip of South End Haws, behind the shingle ridge, lie a series of sand dunes. In contrast to the lime-rich dunes at Sandscale Haws and North Walney, these dunes are less lime-rich and are significantly modified by gull guano. The foredunes and the main dune ridge are separated by a long grassy hollow susceptible to flooding on highest tides and in which strand-line plants such as sea milkwort *Glaux maritima* and sea sandwort *Honkenya peploides* grow. The foredunes are dominated by marram grass *Ammophila arenaria*, sand couch-grass *Elymus farctus* and lyme-grass *Leymus arenarius*. The main due ridge is more stable with a greater diversity of plants, including wild pansy *Viola tricolor*, sea spurge *Euphorbia paralias* and common restharrow *Ononis repens*. The hollows between the dunes support interesting orchid and small-herb communities which include the nationally scarce dune fescue *Vulpia fasciculata*.

Several nationally scarce moths have been recorded from the dune areas. These include the sand dart *Agrostis ripae* which inhabits sand dunes just above high water mark and whose larvae feed on oraches, the coast dart *Euxoa cursoria* which feeds on various sand dune plants and the shore wainscot *Mythimna litoralis* which feeds upon marram grass. The sand dune and shingle habitats provide support to the largest gull colony in north west England.

Extensive areas of mud and muddy sand flat are present within Walney Channel. These support an abundant invertebrate life, often with dense populations of particular species. The latter include the amphipods *Corophium volutator* and *C. arenarium*, the mud snail *Hydrobia ulvae*, bivalves *Macoma balthica*, *Scrobicularia plana* and *Cerastoderma edule* and polychaete and oligochaete worms. Small beds of the eelgrasses *Zostera angustifolia* and *Z. marina* occur around Roa Island and off Westfield, the only such beds known in north west England. Where there is freshwater influence the green alga *Enteromorpha* spp., occurs extensively. These intertidal flats form important feeding areas for large numbers of waders and wildfowl.

Some small areas of saltmarsh occur along the fringes of Roosecote Sands and at Foulney Island but the most important and largest areas occur along the sheltered eastern shore of South Walney. Tummer Hill saltmarsh is the largest ungrazed saltmarsh in South Cumbria. This is a scarce habitat in north west England where, traditionally, most of the marshes are heavily grazed by sheep and/or cattle. The lack of grazing has allowed a tall species-rich vegetation to develop, with several grazing-sensitive plants present in abundance. The marsh contrasts markedly with the closely cropped, grass-dominated saltmarshes found around much of Morecambe Bay, particularly when the sea-lavender and sea aster are in flower. It has a particularly well-defined structure of creeks and numerous pools. Sea purslane *Halimione portulacoides* dominates the mid-marsh mixed with the uncommon long-bracted sedge *Carex extensa* as well as sea pink *Armeria maritima* and sea aster *Aster tripolium*. Both common sea-lavender *Limonium vulgare* and lax-flowered sea-lavender *L. humile* are abundant. Glasswort *Salicornia* spp. and annual seablite *Suaeda maritima* predominate in the vegetation salt pans. At the top of the marsh sea couch-grass *Elymus pycnanthus*, sea rush *Juncus maritimus* and common reed *Phragmites australis* predominate. Several of the species characteristic of the Walney saltmarshes are close to their northern limits of distribution in Britain, e.g. *Halimione portulacoides*, *Limonium humile* and *Juncus maritimus*. In contrast with Tummer Hill marsh, the marshes to the south are grazed to varying degrees and are dominated by common cord-grass *Spartina anglica* which has spread dramatically since the 1960s, colonising large areas of mudflat.

Much of the Walney Channel has been dredged or has training banks, to maintain a navigation channel to the port and shipyard. Where the strong tidal streams sweep past boulder and cobble scars on the edge of this channel, the conditions are suitable for unusually species-rich marine communities to develop. The current supplies food for filter-feeding organisms and reduces the siltation, away from the damaging forces of wave action. Massive growth forms of the sponges *Halichondria panicea* and *Hymeniacidon perleve* dominate the larger boulders with other surfaces densely colonised by barnacles *Elminius modestus* and *Balanus crenatus* and the keelworm *Pomatoceros triqueter*. Where the base of the boulders is clear of silt, rich under-boulder communities develop, dominated by encrusting seamats and sea fans with occasional solitary sea squirts *Asciella scabra* and anemones *Metridium senile*. These species-rich habitats occur on the lower shore boulder and cobble scars at Roa Island and Head Scar, where they extend into the subtidal. Similar habitats are present in the narrow section of channel at Jubilee Bridge although these are not so extensive and grade into a sand mason *Lanice conchilega*-dominated sediment in the lower intertidal. The scars also support a relatively high diversity of red algae, including *Polysiphonia nigrescens*, *Chondrus crispus*, *Mastocarpus stellatus* and red calcareous crusts. These wave-sheltered tide-swept rock habitats have a very

restricted distribution nationally and are particularly rare on the sediment-dominated eastern Irish Sea coast. Brown furoid algal communities, limited in extent in Morecambe Bay generally, occur on mid and upper shore boulders and on jetties and revetments within the site.

Extensive mussel beds form on the rocky scars within and at the entrance to the Walney Channel. On the more wave-exposed lower shores the communities are less stable and settlements of seed mussels may be dislodged by storms. The less exposed and scoured scars support species-rich algal and animal communities. The periwinkles *Littorina littorea* and *L. saxatilis* are common, often forming dense aggregations. Burying within the sediments are lugworm *Arenicola marina*, ragworm *Hediste diversicolor* and the sand mason *Lanice conchilega*. The beds provide important feeding habitat for birds including eider and oystercatcher.

The site forms part of the Morecambe Bay complex, which supports the third highest counts of wintering wildfowl in Britain. However it is of international importance in its own right also, regularly supporting over 20,000 waterfowl in the winter with a considerable interchange between it and Morecambe Bay. The site supports at least 1% of the national wintering populations of dunlin, curlew, grey plover, eider, cormorant and shelduck. It also regularly supports at least 1% of the international wintering populations of redshank, oystercatcher and knot and occasionally shelduck. The area around South End Haws and Foulney Island regularly supports more than 1% of the international population of herring gull over winter and of lesser black-backed gull in late winter. It is also important for passage birds, in particular sanderling. South Walney and Foulney Island are important for colonial breeding birds regularly supporting more than 1% of the national breeding population of eider, lesser black-backed gull, herring gull and arctic tern. The eider colony is the most southerly on the west coast of Britain. The national decline in the herring gull population has been evident at South Walney, where the population has declined by 50% over the last 20 years. In contrast, lesser black-backed gull numbers have increased. Until recently Foulney Island also regularly supported a nationally important breeding population of sandwich tern, occasionally of little tern and a small population of common tern but recently these birds have bred on the adjacent Duddon Estuary SSSI.

Cavendish Dock is one of the largest coastal freshwater sites in north west England and supports a rich growth of aquatic plants including the local beaked tasselweed *Ruppia maritima*. The dock provides a good feeding and roosting area for many species of wildfowl and is the only known moult site for mute swans in Cumbria.