



Scottish Natural Heritage
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SANDS OF FORVIE AND YTHAN ESTUARY
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 1404

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Purpose



This is a public statement prepared by SNH for other owners and occupiers of the SSSI. It outlines the reasons it is designated as an SSSI and provides guidance on how its special natural features should be conserved or enhanced. This Statement does not affect or form part of the statutory notification and does not remove the need to apply for consent for operations requiring consent.

We welcome your views on this statement.

Description of the site

The Sands of Forvie is a large sand dune system linked to the Ythan estuary, lying at the northern end of the 20km arc of soft coastline, known as Aberdeen Bay, which stretches from Aberdeen to Rockend, Forvie. The development of the dune system is closely associated with that in the adjacent Foveran Links SSSI (south Forvie and Foveran together form one geological site). The sand dune system, part of the 5th largest in Britain, and possibly the least disturbed, comprises shifting dunes and a unique series of sand dune ridges. These support a wide range of sand dune habitats including several of European importance in their own right as well as nationally important populations of breeding birds. The Ythan estuary is itself one of the least modified in Scotland and the most extensive in North-East Scotland, with extensive intertidal flats and saltmarsh. Further information on the biological and geological interest of Forvie is detailed in Appendix 1.

Natural features of Sands of Forvie and Ythan Estuary SSSI	Feature condition (date monitored)	Other relevant designations
Coastal Geomorphology of Scotland	Favourable, maintained (October 2001)	
Sand dune	Favourable, maintained (September 2000)	SAC
Estuary	Not yet assessed	
Saltmarsh	Not yet assessed	
Vascular plant assemblage	Not yet assessed	
Breeding bird assemblage	Favourable, maintained (July 2002)	
Arctic tern, breeding	Not yet assessed	
Common tern, breeding	Unfavourable, declining (August 2008)	SPA

Little tern, breeding	Favourable, maintained (June 2008)	SPA
Sandwich tern, breeding	Favourable, maintained (May 2008)	SPA
Eider, breeding	Favourable, maintained (June 2002)	
Waterfowl assemblage, non-breeding	Favourable, maintained (January 1999).	SPA
Eider, non-breeding	Favourable, maintained (January 2002)	SPA
Pink-footed goose, non-breeding	Unfavourable, declining (March 2005)	SPA

Features of overlapping Natura sites that are not notified as SSSI natural features	Feature condition (date monitored)	SPA or SAC
Shifting dunes	Favourable, maintained (September 2000)	SAC
Shifting dunes with marram	Favourable, maintained (September 2000)	SAC
Humid dune slacks	Favourable, maintained (September 2000)	SAC
Lime-deficient dune heathland with crowberry	Favourable, maintained (September 2000)	SAC
Lapwing, non-breeding	Favourable, maintained (September 2007)	SPA
Redshank, non-breeding	Favourable, maintained (January 2002)	SPA

According to site condition monitoring (SCM) carried out since 1999 all but two of the site's natural features have been recorded as being in favourable condition. Whereas two of the three species of tern that were monitored are in favourable condition, one species, common tern, is below former levels and is thus not in favourable condition. Counts for SCM carried out in the SSSI in 2005 recorded numbers of pink-footed geese below former levels, though numbers in the wider SPA are being maintained.

Recently, survey work has indicated that rosebay willowherb may have increased in abundance in the south of the site, in particular on the fixed dune by the track to Rockend.

Past and present management

In the past Sands of Forvie was extensively cultivated and grazed, as is witnessed by historical records and the still visible cultivation rigs. It has been suggested that overgrazing and over-cultivation may have been contributory factors in the major sand influx and inundation of Forvie Kirk and surrounding village in the 15th century. In recent decades north Forvie has been largely stable, while the dunes of south Forvie have continued to experience natural sand movements. Sheep and cattle grazed the dunes until 1959 but no stock have grazed since then, other than on a very small area behind Mains of Collieston. Drains were dug on the moorland but these have generally fallen into disuse and become in-filled, apart from those by access tracks and the drain from Cotehill Loch which has been occasionally maintained. Muirburn for grazing and latterly for grouse management continued until the late 1980's but does not now take place. Salmon netting took place for over 100 years but was recently bought out by the local salmon fishery board.

The site was used for military training during World War Two, with some unexploded incendiary devices remaining on the site. Army training vehicles may be responsible for the vehicle tracks on the raised beaches.

The site is primarily owned and managed by SNH as a National Nature Reserve (NNR) and is very popular for recreation, particularly for walkers and birdwatchers, with an estimated minimum 15,000 visitor days per year. To the north of the SSSI lies the Stevenson Forvie Centre which explains the interest of the site to visitors. The Centre is used for environmental education with school children and other groups. Additional car parks and a picnic place are provided along the A975 by the estuary, including at Waterside, and there is a bird hide at Waulkmill.

The estuary is a popular place for both shore and boat fishing. The estuary is available for public wildfowling from 1 September until 20 February annually. The estuary is also used by wind-surfers and bait-diggers.

The Sleek of Tarty saltmarsh may have been used for grazing in the past but is no longer managed as agricultural land. The adjacent field on the Snub, which is used by geese, is intensively managed agricultural land.

Rabbits and ragwort are controlled to prevent damage to crops on agricultural land neighbouring the site.

Recently, reserve staff have been removing rosebay willowherb from by the Rockend track to prevent spread across into the dune heath.

Oil pipelines cross the estuary at Logie Buchan and concrete structures on either side of the estuary at the Snub are in place to fix a boom in case of oil spill.

A number of bridges cross the Ythan estuary and its tributaries including the A975 road bridge, the Memorial bridge (now pedestrianised) by the Kirkton of Logie Buchan, and the road bridge over the Forvie Burn. Two footbridges over the Foveran Burn provide access to Udney and Foveran Links on the south side of the estuary, and there is also a jetty on this burn.

Objectives for Management (and key factors influencing the condition of natural features)

We wish to work with the other owners of the site to protect the site and to maintain and where necessary enhance its features of special interest. SNH aims to carry out site survey, monitoring and research as appropriate to increase our knowledge and understanding of the site and its natural features and monitor the effectiveness of the management.

The EU Habitats and Birds Directives oblige Government to avoid, in SACs and SPAs, the deterioration of natural habitats and the habitats of species, as well as disturbance of the species for which the areas have been designated, where such disturbance could be significant in relation to the objectives of these Directives. The objectives below have been assessed against these requirements. All authorities proposing to carry out or permit to be carried out operations likely to have a significant effect on the European interests of this SSSI must assess those operations against the relevant Natura conservation objectives (which are listed on our website through the SNHi – SiteLink facility).

1. To allow natural coastal processes to continue to operate and the continued natural evolution of the geomorphological features

Coastal engineering or other activities in Aberdeen Bay could have impacts on the sediment supply which is the driver for much of the dynamics of the beach/dune system.

2. To prevent disturbance of the coastal habitats, including sand dunes, estuary and saltmarsh

Rabbit numbers are kept to a level at which there is no obvious damage in the form of erosion or changes in vegetation composition. Trampling by visitors and the use of mountain bikes and off-road vehicles can cause localised disturbance of the site's habitats.

Further monitoring and management will be required to test the effectiveness of hand removal of rosebay willowherb from the Rockend track.

3. To prevent disturbance to the important bird populations

Predation by foxes and birds and disturbance by humans and their dogs could affect the breeding birds and winter waterfowl. Recreational activities like windsurfing can disturb birds feeding and roosting on the estuary. Overwintering birds are vulnerable to disturbance. SNH carries out targeted control of foxes and crows, and asks people to keep dogs on lead or under close control during the breeding season and along the estuary.

Other factors affecting the natural features of the site

Fish: The tern breeding colonies are largely dependent on the availability of suitable fish for feeding. Any significant decline in fish stocks is likely to have a detrimental effect on the breeding success of the colonies.

Oil pollution: The oil pipelines that cross the estuary and oil-related and other activities offshore have the potential to affect the site through pollution.

Nitrate pollution: Nitrate pollution originating outside the site has accelerated the growth of weed mats in the estuary which potentially threaten the invertebrated food supplies of birds. The extent of weed mats was formerly up to 15% of available habitats but has recently decreased to 5% (2007).

Date last reviewed: 8 September 2011.

Appendix 1

Further Information on the Biological and Geological Interest of Sands of Forvie and Ythan Estuary SSSI

Biological Interest

Habitats and Plant Species

The Sands of Forvie comprises large areas of sandy foreshore, mobile and fixed dunes, coastal heath and dune pasture. The successional development of dune vegetation associated with increasing sand stability is especially well demonstrated. Several of Forvie's sand dune habitats are considered to be of European importance. Embryonic shifting dunes, a rare habitat in the United Kingdom, are present along the upper shore above the high tide line. Shifting dunes receiving large quantities of blown sand are actively growing and being colonised by marram grass. Dune heathland with crowberry, another rare habitat in the United Kingdom, is very extensive, and occurs alongside more open, lichen-rich areas. Humid dune slacks with creeping willow and cross-leaved heath are found in seasonally wet dune hollows. More fixed areas of marram grass and dune grassland are also present.

The Ythan Estuary is one of the least modified in Scotland, and the largest in the north-east. The component habitats of the Ythan Estuary include extensive intertidal flats and saltmarsh, with brackish swamps and reedbeds along the upper estuary. The saltmarsh, the largest in Aberdeenshire, is mainly mid-marsh characterised by red fescue and mud rush, and upper-marsh dominated by couch grass. Smaller areas of low-marsh are marked by common saltmarsh-grass, seablite and glasswort species. The beds of common reed along the upper Ythan are the largest in any estuary in Aberdeenshire. Stands of sea club-rush and bulrush are also found. The Foveran, Tarty and Forvie Burns are included up to their normal tidal limits.

Other habitats present in the SSSI include open water, grassland, marsh, flushes, rocky cliffs, rocky, shingle beaches, intertidal shore, and small areas of scrub.

The diversity of vascular plants is high, some 348 species having been recorded. These include a strong representation of northern coastal species including the rare curved sedge and oysterplant, which occurs on shingle. Purple milk-vetch and small adder's-tongue are also found, and in addition northern saltmarsh-grass, seaside centaury, variegated horsetail and creeping lady's-tresses have also been recorded. Other local species on the sand dunes include mountain crowberry¹, at one of its very few coastal sites in Grampian, small-fruited yellow sedge, common twayblade, early purple orchid, frog orchid, heath dog-violet and moonwort. In addition, some southern and western species are found on the cliff, along the estuary and in marshes, for example sea aster and water-dropwort.

The lichens (129 species) are of particular interest amongst the non-vascular plants, with a combination of coastal and upland species. These include two local coastal species: *Caloplaca verruculifera*, associated with maritime rocks, and *Micarea erratica*, which is a shingle specialist. The dunes support species more commonly associated with moorland and upland areas, in particular Iceland moss *Cetraria islandica*, along with *Cladonia uncialis* subsp. *biuncialis* and the nationally scarce *Cladonia zopfii*. The very rare *Cladonia mitis* has also been recorded (but was not found in the most recent lichen survey carried out in 2000).

Sixty-one species of moss and twenty six species of liverwort have been recorded. These include two nationally scarce liverworts, *Riccardia incurvata* and *Haplomitrium hookeri*,

¹ *Empetrum nigrum* ssp. *hermaphroditum*

associated with dune slacks. There are also old records for the Schedule 8 moss *Drepanocladus vernicosus* and the rare liverwort *Scapania curta*. Fungi (140 species) are also of interest.

Fauna

The site provides breeding grounds for numbers of breeding sandwich, common and little terns of European importance, and smaller numbers of arctic tern and black-headed gull, and possibly the largest breeding colony of eider duck in Britain. The intertidal flats support internationally important populations of waterfowl. When combined with the nearby Meikle Loch, the site is of European importance for overwintering pink-footed geese. Other waterfowl include more than 1% of the British winter population of redshank. Inshore waters at the mouth of the estuary are a major moulting and wintering ground for various seaduck and divers. Other breeding birds, associated with the dunes, saltmarsh, freshwater lochs, heaths and seacliffs include shelduck, oystercatcher, redshank, lapwing, snipe, curlew, fulmar, kittiwake and black-headed and herring gulls. Over 225 species of bird have been recorded on this site.

The site has an interesting terrestrial and estuarine invertebrate fauna. Two hundred and thirty eight species of butterfly and moth (Lepidoptera) have been recorded including a small number of species which are rare in North-East Scotland (such as northern brown argus and small pearl-bordered fritillaries), and species which are more typical of upland heathlands but are scarce in the lowlands (e.g. the grey mountain carpet moth). One hundred and forty eight species of beetle have been recorded. One hundred and seven species of spider have been recorded including several that are scarce or local in Scotland. All of these species are likely to have been under recorded.

The estuary supports common mussel beds, reduced salinity bivalve mud communities and a wide range of estuarine fish including flounder, sand goby, three-spined stickleback, common goby, thick-lipped grey mullet and seabass (these latter two species being rare species in northern waters). The River Ythan, upstream of the SSSI, is a spawning ground for small numbers of salmon and sea trout. Otters are found on the Ythan. Badgers are resident on the site as well.

Geology

The Sands of Forvie dune system is of outstanding national importance for the nature, variety and scale of its coastal landforms. A remarkable landform assemblage has developed within the site over at least the last 4 000 years, as part of the development of Aberdeen Bay. The older elements, including abandoned or 'raised' shingle beaches, estuarine terraces and cliffs, provide a highly important relict record of past changes in relative sea level.

South Forvie (together with Foveran Links), is an excellent representative, or 'type example', of the sand dune systems of the north east coast of Scotland, with unique large sand sheets (sometimes called sand domes). A dynamic interchange of sand occurs between the foredunes at Foveran and Forvie, the extensive beaches and the sand bars and spits at the mouth of the Ythan. Research has also shown that the River Ythan forms an integral part of the beach-sand dune system, with the position of the river outlet being of crucial importance in controlling the development of the bars and spits which provide sand to the beach and dunes. The sand sheet at South Forvie contributes to the circulatory sediment system. Dune migration to the west leads to sand losses into the estuary, resulting in sand being recycled by river and tidal flows back to the foreshore and subsequently blown from the beach back onto the sand sheet.

The sand dune complex of North Forvie is unique in a British context, having a complex series of diverse surfaces, including classic parabolic dunes, developed over a plateau of bedrock and glacial deposits which terminates in relatively high sea cliffs.

The exceptional value of the site for research, study and interpretation is enhanced by the availability of extensive research results in other disciplines. These provide much additional and complementary evidence relevant to understanding the development of the coastal landforms in the past, present and future.