

# RAMSAR INFORMATION SHEET

## FOR WETLANDS OF INTERNATIONAL IMPORTANCE

Site reference number *7UK121* Date of designation: *16/03/98*

**1** Compilation date Feb 1999  
**2** Country UK (England)  
**3** Name of wetland Duddon Estuary  
**4** Site centre location: Latitude: 54 10 39 N Longitude: 03 15 24 W  
**5** Altitude Not being submitted  
**6** Area (ha) 6806.3

### 7 Overview

Duddon Estuary is formed by the River Duddon and the smaller Kirkby Pool opening into the Irish Sea in south-western Cumbria. Most of the site consists of intertidal sand and mudflats, important for large numbers of wintering and passage waterfowl. A range of grazed and ungrazed saltmarsh habitats occur around the edge of the estuary, especially the sheltered inner section. The site is the most important in Cumbria for sand-dune communities including large areas of calcareous dunes at Sandscale and Haverigg Haws and contrasting acid dunes on North Walney. Artificial habitats include slag banks and a flooded mine working known as Hodbarrow Lagoon, the largest coastal lagoon in northwest England.

**8** Wetland type Marine/coastal wetland

Code	Name	% Area
G	Tidal flats	90.3
H	Salt marshes	8
J	Coastal brackish / saline lagoons	0.2
Tp	Freshwater marshes / pools: permanent	0
Other	Other	1.4

**9** Ramsar Criteria 2a, 2c, 3a, 3c  
**10** Map of the site ✓  
**11** Compiler Joint Nature Conservation Committee  
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### 12 Justification of criteria

#### Ramsar criterion 2a

Supports nationally important numbers of the rare natterjack toad *Bufo Calamita*, near the north-western edge of its range (an estimated 18-24% of the British population). Supports a rich assemblage of wetland plants and invertebrates - at least one nationally scarce plant and at least two British Red Data Book invertebrates.

#### Ramsar criterion 2c

The site supports nationally important numbers of waterfowl during spring and autumn passage.

#### Ramsar criterion 3a

Internationally important waterfowl assemblage (greater than 20,000 birds)

#### Ramsar criterion 3c

Over winter the site regularly supports internationally important populations of: Knot *Calidris canutus*, Pintail *Anas acuta*, Redshank *Tringa totanus*

### 13 General location

Nearest town/city: Barrow-in-Furness

Duddon Estuary is situated in north-west England to the north-west of Morecambe Bay and to the north of Barrow-in-Furness.

**Administrative Region:** Cumbria

### 14 Physical Features

Soil & Geology	acidic, alluvium, basic, limestone, limestone/chalk, metamorphic, mud, mud, sand, sand, sandstone/mudstone, shingle, shingle, slate/shale
Geomorphology and Landscape	barrier beach, coastal, estuary, intertidal sediments (including sandflat/mudflat), lagoon, lowland, open coast (including bay)
Nutrient status	
pH	no information
Salinity	saline / euhaline
Soil	mainly mineral
Water permanence	usually permanent
Summary of main climatic features	Rainy, temperate climate with a mild winter and periodic frost. Mean minimum temperature approximately 7.4°C. Mean maximum temperature approximately 14.4°C. Mean annual precipitation approximately 622.4mm, with a winter maximum.

### 15 Hydrological values

Shoreline stabilisation and dissipation of erosive forces

### 16 Ecological features

The majority of the site consists of intertidal sand and mudflats. These support invertebrate populations important for the large numbers of overwintering wildfowl and waders on the site. The mouth of the estuary forms an extensive flat sandplain, with highly mobile sands dissected by constantly changing tidal channels. More sheltered areas in the inner part of the estuary are composed of finer sands and soft mud.

Extensive areas of saltmarsh occur around the outer edge of the site, especially in the more sheltered inner third of the estuary and around North Walney. There is considerable variation in the saltmarsh communities depending mainly on the intensity of grazing and degree of saltwater inundation.

Pioneer saltmarsh occurs at the seaward edge of the marsh, with species such as *Salicornia europea*, *Suaeda maritima* and *Spartina anglica*. The mid-marsh is dominated by species such as *Puccinellia maritima*, *Festuca rubra* and *Armeria maritima*. *Juncus maritimus* is frequent at the landward side of the marsh. Ungrazed saltmarsh on the east side of North Walney is richer in plant and invertebrate species and is dominated by *Limonium vulgare* and *Atriplex portulacoides*.

The estuary is one of the most important sites in Cumbria for sand dune communities including areas of calcareous dunes at Sandscale and Haverigg Haws, and contrasting acid dunes at North Walney. A full range of dune types is present, from fore-dunes based on highly mobile sand dominated by *Ammophila arenaria*, to more fixed yellow and grey dunes and dune grasslands. The calcareous nature of the sand has given rise to a very diverse flora with species such as *Viola tricolor*, *Thymus praecox*, *Galium verum* and the local *Vulpia membranacea*. On each of the main dune systems there are areas of dune heath, a rare habitat, with *Calluna vulgaris*, *Erica cinerea*, *E. tetralix* and a mosaic of mosses and lichens. The dune slacks support a diverse flora including *Centaurium littorale*, *Epipactis palustris*, *Corallorhiza trifida*. The wetter slacks are important for natterjack toads.

The strandline communities at North Walney and Haverigg Haws support nationally rare shingle vegetation including species such as *Honkenya peploides*, *Cakile maritima*, *Crambe maritima*. There are a variety of artificial habitats within the site including slab banks at Askam Pier and Borwick Rails, which have developed a calcareous flora and are used by breeding tern. Hodbarrow lagoon, a flooded mine working is used as a roost for wildfowl and for breeding birds. Associated habitats include carr, shingle beach, brackish pools and coastal grassland.

## 17 Noteworthy flora

### Assemblage.

The site is internationally important because it contains the following habitats: shallow inlets and bays, *Salicornia* and other annuals colonising mud and sand, Atlantic salt meadows, intertidal mudflats and sandflats and also coastal shingle vegetation out of the reach of waves.

### Nationally important species occurring on the site.

#### Higher Plants.

*Epipactis dunensis*, *Limonium humile*, *Centaurium uatorale*, *Pyrola rotundifolia*, *Equisetum variegatum*, *Corallorhiza trifida*, *Coincya monensis subsp monensis*.

## 18 Noteworthy fauna

### Birds

#### Species occurring at levels of international importance (as identified at designation):

##### Over winter the area regularly supports:

Knot, <i>Calidris canutus</i> (Northeastern Canada/Greenland/Iceland/Northwestern Europe)	4495 individuals, representing an average of 1.3% of the population (5 year peak mean 1991/92-1995/96)
Pintail, <i>Anas acuta</i> (Northwestern Europe)	1636 individuals, representing an average of 2.7% of the population (5 year peak mean 1991/92-1995/96)
Redshank, <i>Tringa totanus</i> (Eastern Atlantic (wintering))	2289 individuals, representing an average of 1.3% of the population (5 year peak mean 1987/8-1991/2)

#### Species currently occurring at levels of national importance:

##### During the breeding season the area regularly supports:

Sandwich Tern, <i>Sterna sandvicensis</i> (Western Europe/Western Africa)	210 pairs, representing an average of 1.5% of the GB population (5 year mean 1988-1992)
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##### On passage the area regularly supports:

Dunlin, <i>Calidris alpina alpina</i> (Northern Siberia/Europe/Western Africa)	2409 individuals, representing an average of 1.2% of the Great Britain wintering population (5 year peak mean, 1987/8-1991/2)
Ringed Plover, <i>Charadrius hiaticula</i> (Europe/Northern Africa (wintering))	381 individuals, representing an average of 1.3% of the Great Britain wintering population (5 year peak mean, 1987/8-1991/2)
Sanderling, <i>Calidris alba</i> (Eastern Atlantic/Western & Southern Africa (wintering))	704 individuals, representing an average of 2.3% of the Great Britain wintering population (5 year peak mean, 1987/8-1981/2)

**Over winter the area regularly supports:**

Curlew, <i>Numenius arquata</i> (Europe (breeding))	2192 individuals, representing an average of 1.9% of the GB population (5 year peak mean 1991/92-1995/96)
Dunlin, <i>Calidris alpina alpina</i> (Northern Siberia/Europe/Western Africa)	11216 individuals, representing an average of 2.1% of the GB population (5 year peak mean 1991/92-1995/96)
Oystercatcher, <i>Haematopus ostralegus</i> (Europe & Northern/Western Africa)	6463 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1991/92-1995/96)
Red-breasted Merganser, <i>Mergus serrator</i> (Northwestern/Central Europe)	342 individuals, representing an average of 3.4% of the GB population (5 year peak mean 1991/92-1995/96)
Sanderling, <i>Calidris alba</i> (Eastern Atlantic/Western & Southern Africa (wintering))	723 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1991/92-1995/96)
Shelduck, <i>Tadorna tadorna</i> (Northwestern Europe)	1108 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1991/92-1995/96)

**Assemblages of international importance:**

**Over winter the area regularly supports:**

31505 waterfowl (5 year peak mean 1991/92-1995/96)

**Nationally important species occurring on the site.**

**Mammals.**

*Lutra lutra.*

**Amphibians.**

*Bufo calamita.*

**Invertebrates.**

*Colletes cucicularius, Psen littoralis, Hypocaccus rugiceps.*

**19 Social and Cultural Values**

- Aesthetic
- Archaeological/historical site
- Conservation education
- Current scientific research
- Fisheries production
- Livestock grazing
- Non-consumptive recreation
- Sport fishing
- Tourism
- Transportation/navigation

**20 Land tenure/ownership**

Ownership category	On-Site	Off-Site
Non-governmental organisation	+	
Local authority, municipality etc.	+	+

Private	+	
Public/communal	+	

## 21 Current land use

Activity	On-Site	Off-Site	Scale
Nature conservation	+		Large-Scale
Tourism	+	+	Large-Scale
Recreation	+		Large-Scale
Cutting of vegetation (small scale/subsistence)	+		Small-Scale
Fishing: (unspecified)	+		Small-Scale
Fishing: recreational/sport	+		Small-Scale
Gathering of shellfish	+		Small-Scale
Bait collection	+		Large-Scale
Grazing (unspecified)	+		Large-Scale
Hunting: recreational/sport	+		Small-Scale
Industry		+	Large-Scale
Sewage treatment/disposal	+		Large-Scale
Harbour/port	+		Small-Scale
Flood control	+		Large-Scale
Mineral exploration		+	Small-Scale
Oil/gas exploration		+	Small-Scale
Oil/gas production		+	Small-Scale
Urban development		+	Large-Scale

## 22 Adverse factors affecting the ecological character of the site

Activity	On-Site	Off-Site	Scale
Overgrazing by domestic livestock	+		Small-Scale
Erosion	+		Small-Scale
Recreational/tourism disturbance (unspecified)	+		Large-Scale

## 23 Conservation measures taken

Conservation measure	On-site	Off-site
SSSI	+	
NNR	+	
SPA	+	
Candidate SAC	+	
Land owned by a NGO for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Other	+	

## 24 Conservation measures proposed but not yet implemented

see below

### Site vulnerability and management statement

The Duddon Estuary is a diverse estuarine system dependent on the physical processes that dominate the natural system; consequently the vulnerability of habitats is linked to changes in the physical environment. The intertidal zone is being threatened by coastal squeeze as a result of land claim and coastal defence works as well as sea level rise and storm surges. Many of the saltmarshes are grazed by agricultural stock, sometimes at a high level. These issues are being addressed through the

Shoreline Management Plan and more locally, Site Management Statements/Positive Management Schemes.

Waterfowl wintering on estuaries are vulnerable to loss of feeding areas through disturbance, land claim and development. The Duddon Estuary partnership is addressing some of the threats arising from recreational pressure and bait digging. Feasibility studies are being carried out for a bridge across the estuary, any such proposals will be subject to assessment under the Habitats Regulations, 1994. There are various developments for housing, amenity and industry adjacent to the site, however to date there has been no significant effect on the nature conservation interest of the estuary.

## **25 Current scientific research/survey/monitoring and facilities**

### **Contemporary.**

#### **Fauna.**

Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.

Breeding birds: Site managers for the NNR, NT, RSPB reserves carry out monitoring.

Breeding natterjack *Bufo calamita*: Site managers and volunteers carry out monitoring of the breeding success of natterjacks annually.

#### **Habitat.**

Marine survey work currently underway for the marine habitats included within the Morecambe Bay candidate SAC.

#### **Flora.**

Scarce plants: Monitored by site managers on the reserves.

### **Completed.**

#### **Flora.**

Vegetation: Sand dunes have been surveyed to NVC standard. Saltmarshes have been surveyed but not to NVC standard.

#### **Fauna.**

Invertebrates (terrestrial): Entomological records are detailed for parts of the site (Sandscale and North Walney) and less detailed for others.

## **26 Current conservation education**

*Existing Programmes:* The National Trust, RSPB and English Nature wardens lead guided walks onto their respective sites (Sandscale, Hodbarrow, North Walney).

*Interpretation facilities:* The site is provided with fixed interpretation panels at Sandscale (NT) and North Walney NNR. Wardens also lead school visits.

## **27 Current recreation and tourism**

### **Activities, Facilities provided and Seasonality.**

#### **Land-based recreation**

Walking, including dog walking, bathing and beach recreation occurs throughout the site but particularly adjacent to the urban areas of Barrow-in-Furness, Askam, Millom and Haverigg. There is unauthorised mountain bicycle and motorbike access to some of the sand dune areas but particularly North Walney. Bird watchers visit the site but mainly go to the nature reserves and where there is easy access. Adjacent to the SSSI at Barrow, derelict land is being developed for amenity. Most of the golf course at Dunnerholme near Askam is included within the site. All year.

#### **Water based recreation**

A water-skiing development occupies part of Hodbarrow Lagoon. Its operations are controlled. Otherwise power boating, waterskiing, jet-skiing, wind surfing and canoeing are still relatively uncommon. There are several angling clubs activities in the estuary, mainly April to September.

#### **Airborne recreation**

There is a small airstrip used by light aircraft and commercial flights (VSEL/GEC) adjacent to North Walney. At present usage (low) disturbance to waterfowl does not appear to be a problem. All year. Wildfowling

Wildfowling is controlled by private agreement with estates and private owners. Clubs operate under strict rules.

Infrastructure developments

There are a number of caravan sites adjacent to the site at Haverigg and Askam and several non-marina moorings throughout the site, used mainly April to September.

## **28 Functional jurisdiction**

Department of the Environment, Transport and the Regions

## **29 Management authority**

English Nature

## **30 Bibliography**

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