

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7, as amended by Resolution VIII.13 of the Conference of the Contracting Parties.

Note for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers are strongly urged to provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of maps.

1. Name and address of the compiler of this form:**Joint Nature Conservation Committee**

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

Designated: 17 July 1985 / updated 12 May 2005

3. Country:

UK (England/Wales)

4. Name of the Ramsar site:

The Dee Estuary

5. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps.

a) hard copy (required for inclusion of site in the Ramsar List): yes -or- no

b) digital (electronic) format (optional): Yes

6. Geographical coordinates (latitude/longitude):

53 18 40 N 03 11 06 W

7. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Birkenhead

The Dee Estuary lies between the Wirral peninsula, England and the Flintshire coastline of north-east Wales. It is adjacent to the Mersey estuary to its east and to the Clwyd estuary to its west.

Administrative region: Cheshire; Clwyd; Merseyside; Sir y Fflint/ Flintshire; Wirral

8. Elevation (average and/or max. & min.) (metres):

Min. -2
Max. 5
Mean 0

9. Area (hectares): 13,131.49
(2005 calculation, no boundary change)

10. Overview:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

The Dee is a large funnel-shaped sheltered estuary and is one of the top five estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland. The site also includes an assemblage of nationally scarce plants and the sandhill rustic moth *Luperina nickerlii gueneei*, a British Red Data Book species. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England.

11. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 5, 6

Secretariat comment: The RIS provides information requiring the application of Criteria 2 and 4. These need to be included in the next update.

12. Justification for the application of each Criterion listed in 11. above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include:

- H1130 Estuaries
- H1140 Mudflats and sandflats not covered by seawater at low tide
- H1210 Annual vegetation of drift lines
- H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts
- H1310 *Salicornia* and other annuals colonising mud and sand
- H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)
- H2110 Embryonic shifting dunes
- H2120 Shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”)
- H2130 Fixed dunes with herbaceous vegetation (“grey dunes”)
- H2190 Humid dune slacks

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:

74230 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):**Species with peak counts in spring/autumn:**

Common shelduck , <i>Tadorna tadorna</i> , NW Europe	9346 individuals, representing an average of 3.1% of the population (5 year peak mean 1998/9-2002/3)
Eurasian oystercatcher , <i>Haematopus ostralegus ostralegus</i> , Europe & NW Africa -wintering	19174 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3)
Eurasian curlew , <i>Numenius arquata arquata</i> , N. a. arquata Europe (breeding)	4195 individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9-2002/3)
Common redshank , <i>Tringa totanus totanus</i> ,	8281 individuals, representing an average of 3.3% of the population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Eurasian teal , <i>Anas crecca</i> , NW Europe	3058 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Northern pintail , <i>Anas acuta</i> , NW Europe	4976 individuals, representing an average of 8.2% of the population (5 year peak mean 1998/9-2002/3)
Grey plover , <i>Pluvialis squatarola</i> , E Atlantic/W Africa -wintering	603 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)
Red knot , <i>Calidris canutus islandica</i> , W & Southern Africa (wintering)	3729 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
Dunlin , <i>Calidris alpina alpina</i> , W Siberia/W Europe	19157 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)
Black-tailed godwit , <i>Limosa limosa islandica</i> , Iceland/W Europe	2791 individuals, representing an average of 7.9% of the population (5 year peak mean 1998/9-2002/3)
Bar-tailed godwit , <i>Limosa lapponica lapponica</i> , W Palearctic	322 individuals, representing an average of 0.5% of the GB population (5 year peak mean 1998/9-2002/3)
Ruddy turnstone , <i>Arenaria interpres interpres</i> , NE Canada, Greenland/W Europe & NW Africa	291 individuals, representing an average of 0.5% of the GB population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.

Details of bird species occurring at levels of National importance are given in Section 20

13. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):
Council Directive 92/43/EEC

14. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	alluvium, clay, mud, neutral, sand, sandstone, sedimentary, shingle
Geomorphology and landscape	cliffs, coastal, estuary, intertidal rock, intertidal sediments (including sandflat/mudflat), island, lagoon, lowland, shingle bar, subtidal sediments (including sandbank/mudbank)
Nutrient status	mesotrophic
pH	circumneutral
Salinity	brackish / mixosaline, saline / euhaline
Soil	mainly mineral, mainly organic
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Blackpool, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/blackpool.html) Max. daily temperature: 12.9° C Min. daily temperature: 6.4° C Days of air frost: 40.3 Rainfall: 871.3 mm Hrs. of sunshine: 1540.3

General description of the Physical Features:

The Dee Estuary is a large, funnel-shaped, sheltered estuary that supports extensive areas of intertidal sandflats, mudflats and saltmarsh. Where agricultural land-claim has not occurred, the saltmarshes grade into transitional brackish and swamp vegetation on the upper shore. The site also includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland and grassland. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England.

15. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The River Dee is 110 km long, rising in Snowdonia, Wales, and has a total catchment area above Chester Weir of approximately 1800 km². Major reservoirs in the catchment include Bala Lake/Llyn Tegid; Llyn Brenig; Llyn Celyn. The path of the river trends generally east-south-east until it turns sharply northwards before meandering to Chester. Below Chester, the river flows along a canalised artificial channel for 8 km before entering the estuary. One of the major tributaries of the Dee, the Afon Alyn, crosses carboniferous limestone with numerous sink-holes, and during the summer months long stretches of the river bed run dry. A significant part of this lost flow re-emerges on the west bank of the Dee estuary from an artificial tunnel originally constructed to drain metal mines in Halkyn Mountain.

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16. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilisation and dissipation of erosive forces, Sediment trapping, Other, Water supply

17. Wetland types

Marine/coastal wetland

Code	Name	% Area
D	Rocky shores	0.4
E	Sand / shingle shores (including dune systems)	0.1
F	Estuarine waters	14.5
G	Tidal flats	68.7
H	Salt marshes	15.7
J	Coastal brackish / saline lagoons	0.08
R	Saline / brackish lakes: seasonal / intermittent	0.3
Other	Other	0.2

18. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site.

The Dee estuary contains extensive areas of intertidal sand and mudflats with large areas of saltmarsh at its head and along part of its north-eastern shore. The saltmarsh vegetation exhibits a complete succession from early pioneer vegetation colonising intertidal flats through lower, middle and upper saltmarsh types to brackish and freshwater transitions at the top of the shore. Although land-claim has led to a loss of many of these natural transitions, there are still a number of areas, particularly on the English shoreline, where transition to swamp vegetation still occur. These are dominated usually by common reed *Phragmites australis* and sea club-rush *Bolboschoenus maritimus*.

The extensive intertidal mudflats and sandflats of the Dee Estuary form the fifth-largest area within an estuary in the UK and contain many invertebrates, including worms, bivalves (e.g. cockles *Cerastoderma* sp.) and amphipods. Much of the upper part of the estuary consists of muddy fine sand dominated by *Hediste diversicolor* and *Macoma balthica*. The sediment flats in the outer estuary also have fine muddy sands but here they are dominated by *Cerastoderma edule* and *Arenicola marina*. Where water movement is greater the sediments tend to be coarser and sandier, with *Nephtys* sp. and *Bathyporeia* sp.

The saltmarsh themselves support a variety of vegetation communities characteristic of estuaries in northern and western Britain. Much of the estuary is dominated by the non-native common cordgrass *Spartina anglica*; its current extent reflects the fact that the estuary continues to accrete following historical land-claim. Species such as glasswort *Salicornia* sp. and annual seablite *Suaeda maritima* are also present. Much of the saltmarsh remains ungrazed and this has allowed extensive stands of species intolerant of grazing, such as sea purslane *Atriplex portulacoides*, to develop.

The three sandstone islands which comprise the Hilbre complex, represent the only natural hard rock coast within the estuary. The coastal cliffs and maritime heathland and grassland on the plateau areas above the cliffs represent the only regional examples of these vegetative types. The sheltered eastern cliffs of Hilbre support common scurvygrass *Cochlearia officinalis* and sea campion *Silene uniflora*. The nationally scarce rock sea-lavender *Limonium britannicum* occurs, together with the regionally scarce sea spleenwort fern *Asplenium marinum*.

The Dee estuary supports a further nationally scarce species, Portland spurge *Euphorbia portlandica* found at Point of Ayr.

19. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Limonium britannicum subspecies *celticum* (endemic)
Euphorbia portlandica
Spartina anglica (invasive non-native species)

20. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species with peak counts in spring/autumn:

Great cormorant , <i>Phalacrocorax carbo carbo</i> , NW Europe	475 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9-2002/3)
Ruff , <i>Philomachus pugnax</i> , Europe/W Africa	10 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)
Whimbrel , <i>Numenius phaeopus</i> , Europe/Western Africa	30 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3 - spring peak)
Common greenshank , <i>Tringa nebularia</i> , Europe/W Africa	52 individuals, representing an average of 8.7% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Spotted redshank , <i>Tringa erythropus</i> , Europe/W Africa	6 individuals, representing an average of 4.4% of the GB population (5 year peak mean 1998/9-2002/3)
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Species Information

Sandhill rustic moth *Luperina nickerlii gueneei* [British Red Data Book]
 River lamprey *Lampetra fluviatilis*; sea lamprey *Petromyzon marinus* (Habitats Directive Annex I species)
 Hen harrier *Circus cyaneus*, merlin *Falco columbarius*, peregrine falcon *Falco peregrinus*, short-eared owl *Asio flammeus* (Birds Directive Annex 1 non-wetland birds)
 Grey seal *Halichoerus grypus* (Habitats Directive Annex II, Annex IV species (S1364))

21. Social and cultural values:

e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

- Aesthetic
- Aquatic vegetation (e.g. reeds, willows, seaweed)
- Environmental education/ interpretation
- Fisheries production
- Livestock grazing
- Non-consumptive recreation
- Scientific research

Sport fishing
 Sport hunting
 Tourism
 Transportation/navigation

22. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	+
Private	+	+

23. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Fishing: commercial	+	+
Fishing: recreational/sport	+	+
Gathering of shellfish	+	+
Bait collection	+	+
Arable agriculture (unspecified)		+
Grazing (unspecified)	+	+
Permanent pastoral agriculture	+	+
Hay meadows		+
Hunting: recreational/sport	+	+
Industrial water supply	+	+
Industry		+
Sewage treatment/disposal		+
Harbour/port	+	+
Flood control		+
Mineral exploration (excl. hydrocarbons)		+
Oil/gas production		+
Transport route		+
Urban development		+
Non-urbanised settlements		+
Military activities	+	+

24. Factors adversely affecting the site’s ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Introduction/invasion of non-native plant species	1		+		+
Overfishing	2		+		+
Pollution – industrial waste	1		+	+	
General disturbance from human activities	1		+		+
Transport infrastructure development	2	There is an ongoing situation with dredging at Mostyn Dock which has been deemed likely to cause significant effect to the European Marine Site.	+	+	+

For category 2 factors only.
 What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
 Overfishing - It is recognised that the current management of cockle fishing is not effective and new Regulatory Orders are currently with Defra awaiting public consultation.

Transport infrastructure development - At the Public Inquiry for the Mostyn Dock development it was stated there was a requirement for minimum maintenance dredging. Since then the dredging requirement has increased. Applications to dredge are still being determined and consents may be granted on grounds of overriding public interest, notwithstanding the potential damage to the interest of the site. Compensatory measures are being discussed.

The site was listed on the Montreux Record in 1990, because if these negative existing and potential impacts (Ramsar Convention Bureau 1994, 1995).

Is the site subject to adverse ecological change? YES

25. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	

Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Other	+	
Management plan in preparation	+	

26. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

27. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.

Numbers of migratory and wintering wildfowl and waders are monitored at high tide monthly throughout the year and the results are reported 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. Low-tide counts of migratory and wintering wildfowl and waders are also undertaken periodically.

Bird ringing: On site on Hilbre Island; outside the site at the nearby Shotton Steelworks; and part of Burton Marsh by RSPB.

'Modelling Oystercatchers and their Food on the Dee Estuary' research project is in its final year of field survey. Objectives of the research are to assess the power of existing surveys to detect changes in the cockle population and to recommend improvements, and secondly to determine how each site in the study was used by the population of oystercatchers that roosted there.

A biotope survey of the Dee Estuary is currently being carried out for the English side and will be completed in 2005.

28. Current conservation education:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Both public sector and non-governmental organisations are involved in interpretation and education. An educational CD-ROM has been prepared for use of primary schools around the Dee estuary both in England and Wales (approximately 200 schools). This has been a joint/partnership initiative led by the Dee Estuary Strategy (Estuarine Initiative). A booklet titled '*The Dee Estuary*' provides a general introduction to the site's ecological processes. This booklet was distributed last year to all primary and secondary schools around the estuary both in England and Wales.

29. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

The Dee Estuary is used extensively for both tourism and recreation, e.g. windsurfing*, kitesurfing*, sand-yachting*, sailing.

(* restricted to outside the overwintering bird season)

General public access

Coastal cycle route on Welsh side likely to be linked up to Wirral side in future.

Jet-skiing

Water-skiing

Wildfowling (restricted to parts of the estuary)

30. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs,
European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay,
Bristol, BS1 6EB

Head, Countryside Division, Welsh Assembly Government, Cathays Park, Cardiff, CF1 3NQ

31. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House,
Northminster Road, Peterborough, PE1 1UA, UK / Site Safeguard Officer, International
Designations, Countryside Council for Wales, Maes-y-Ffynnon, Penrhosgarnedd, Bangor,
Gwynedd, LL57 2DW

32. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 13 above), list full reference citation for the scheme.

Site-relevant references

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