

Information Sheet on Ramsar Wetlands (RIS) 2009-2012 version

Available for download from http://www.ramsar.org/ris/key_ris_index.htm.

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes 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. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

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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: 10/12/2012

3. Country:

UK (England/Wales)

4. Name of the Ramsar site:

The Dee Estuary

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

The Ramsar site boundary and site area are unchanged:

or

If the site boundary has changed:

i) the boundary has been delineated more accurately ; or

ii) the boundary has been extended ; or

iii) the boundary has been restricted**

and/or

If the site area has changed:

i) the area has been measured more accurately ; or

ii) the area has been extended ; or

iii) the area has been reduced**

** **Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

(1) Additions

i. Dee Estuary/Aber Afon Dyfrdwy Site of Special Scientific Interest (SSSI) (England/Wales) additional area of SSSI within the Ramsar = 631.1ha.

The Ramsar site has been extended to include virtually all the land which was included in the revised SSSI, when this was renotified in 1998. This includes additional areas of intertidal habitat as well as areas of coastal grassland, mainly in Wales. The coastal grassland is important as it contributes towards maintaining the International populations of certain key individual waterfowl species (and the overall total waterfowl assemblage). They are particularly important for curlew, oystercatcher, redshank and black-tailed godwit.

ii. Inner Marsh Farm SSSI (22.44ha) (England/Wales)

This SSSI is managed as a nature reserve by RSPB. It is important for species such as black-tailed godwit (at all periods of the year including a non-breeding summering flock) and overwintering pintail and teal. It is also important in supporting populations of other birds for which the estuary is classified and also contributes to the overall wintering waterfowl assemblage

iii. Shotton Lagoons and Reedbeds SSSI (11.9ha) (Wales)

This SSSI supports a large and increasing population of breeding common terns, the largest in Wales and its Phragmites reedbeds. These reedbeds are also important for locally uncommon breeding species such as reed warblers. Wildfowl from the nearby estuary use the site in winter and the site contributes therefore to the overall wintering waterfowl assemblage of the Dee Estuary

iv. Gronant Dunes and Talacre Warren SSSI (518.8ha) (Wales)

This SSSI supports a range of sand dune habitats and associated flora and fauna including many rare and uncommon plant and animal species as well as shingle, swamp and saltmarsh habitats. This contiguous piece of sand dune habitat, wide sandy foreshore and its associated habitats adds to the wetland interest already found within the existing site. Both natterjack toad and sand lizard have been reintroduced to this dune system in recent years and are both now well established.

The site also supports the only breeding population of little tern in Wales and the shingle feature used by the breeding terns also provides a high tide overwintering roost location for the Dee Estuary waterfowl populations. The roost is predominantly of waders especially the smaller species such as sanderling. Cormorant also use this roost and also roost in large numbers at the low water mark. Terns including Sandwich and common, also aggregate on the foreshore during late summer passage.

v. Red Rocks SSSI (11.38ha) (England)

Red Rocks SSSI supports sand dune, swamp particularly reedbed and saltmarsh vegetation. Where sand is accreting to seaward within the adjacent Dee Estuary SSSI, the sandhill rustic moth occurs. Natterjack toad has been reintroduced to this dune system in recent years and now successfully breeds within the site

(2) Deletions

14 small deletions from the original site boundary have been made in Wales. All these areas were removed from the SSSI boundary in 1998. These are regarded as falling within Resolution viii.21 'Defining Ramsar site boundaries more accurately in Ramsar Information Sheets.' They are all minor changes and fall within category 9 (a) 'the site boundary has been incorrectly drawn and there has been a genuine error or category 9(c) 'technology allows for a higher resolution and more accurate definition of the site boundary than was available at the time of listing'.

The changes do not substantially affect the fundamental objectives for which the site was listed and are a result of inaccuracies in the original mapping of the Dee Estuary SSSI boundary in 1983, which was used as the basis of the 1985 classification of the Ramsar Site.

i) Total area of deletions from whole site is 9.6ha.

For additional information please see the A3 map provided which shows the possible extensions and possible deletions.

ii) Three deletions are referred to on Page 13 of the Montreux Record under 'C. recommendations with wider implications' are:

(a) **Mostyn** - these are referred to in the RIS 6.1 and on Montreux report;

(b) **Point of Ayr** –these are referred to in the RIS 6.1 and on Montreux report;

(c) **West Kirby Marine Lake (WKML)** – this is not listed in Section 6 of RIS because the area is retained within the site. WKML boating park was extended in the 1980's before the Habitats Directive came into force and therefore also before the requirement to consider areas of compensation. Although the marine lake extension is retained within the site boundary and the water continues to overlay the area, there has been a loss of some intertidal habitat where the concrete base and retaining wall were extended. This is not referred to in Section 6 of the RIS as the area is not deleted from within the site boundary and is shown on the map within the Ramsar site.

(b) Area

The area of the Ramsar site is now 14303.02 ha. This is a net increase in area of 1217.17 ha from the 1985 classification. Most of the extended areas occur in Wales

**** Important note:** If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

i. Addition of Criterion 2, for *Epidalea calamita*, Natterjack Toad.

Following the decline and loss of the species in the early 1990's at Red Rock SSSI, the species was successfully reintroduced utilising spawn strings from the nearby Sefton coast and the site now

supports a breeding population of the species. In addition, the species has also been successfully reintroduced to the Talacre Warren and Gronant Dunes SSSI in Wales.

ii. Bird Data

The bird data has been reassessed based on the 5 year period from 1994/5 up to 1998/9 specifically for areas within The Dee Estuary Ramsar Site, as the Dee Estuary WeBS (Wetland Bird Survey) count areas include other areas currently outside the Ramsar Site boundary, mainly in England. It also now excludes species such as turnstone which never occurred in internationally important numbers within the boundary of the original Dee Estuary Ramsar Site. Its main resort was along the North Wirral coast and into the mouth of the Mersey estuary.

iii. Ecological Changes

Implementation of various Ramsar Mission Recommendations - see last updated report on Montreux Record.

7. Map of site included:

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

a) A map of the site, with clearly delineated boundaries, is included as:

- i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ;
- ii) **an electronic format** (e.g. a JPEG or ArcView image) *Yes*
- iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary includes five existing protected areas, all of which are designated as SSSI.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

53° 18' 08'' N 03° 12' 56'' W

9. 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, in England and the Flintshire estuarine coastline of north-east Wales. The site also includes the open coast westwards in Wales from the Point of Ayr in Flintshire to Prestatyn in Denbighshire

Administrative region: Cheshire West and Chester; Sir y Fflint/ Flintshire; Sir Ddinbich/Denbighshire; Wirral Metropolitan Borough Council

10. Elevation (average and/or max. & min.) (metres):	11. Area (hectares):	14302.02
Min.	-17	
Max.	15	
Mean	0	

12. General overview of the site:

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 ten 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 sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. 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.

13. 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, 2, 5, 6

14. Justification for the application of each Criterion listed in 13 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 maritima*)
- 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

Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, *Epidalea calamita*
See also JNCC UK Priority species information: http://jncc.defra.gov.uk/_speciespages/173.pdf

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:

Non-breeding season regularly supports 120,726 individual waterbirds (5 year peak mean 1994/5 – 1998/9).

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:

Redshank , *Tringa totanus*, **8,795 individuals, representing an average of 3.5% of the Eastern Atlantic population (5 year peak mean 1994/95 - 1998/99)**

Species with peak counts in winter:

Teal , *Anas crecca*, NW Europe **5,251 individuals, representing an average of 1.05% of the population (5 year peak mean 1994/95 - 1998/99)**

Shelduck , *Tadorna tadorna*, NW Europe **7,725 individuals, representing an average of 2.6% of the population (5 year peak mean 1994/95 - 1998/99)**

Oystercatcher, *Haematopus ostralegus*, Europe & W Africa **22,677 individuals, representing an average of 2.2% of the population (5 year peak mean 1994/95 - 1998/99)**

Curlew , *Numenius arquata* Europe/NW Africa **3,899 individuals, representing an average of 1.1% of the Europe population (5 year peak mean 1994/95 - 1998/99)**

Pintail , *Anas acuta*, NW Europe **5,407 individuals, representing an average of 9.0% of the population (5 year peak mean 1994/95 - 1998/99)**

Grey plover , *Pluvialis squatarola*, E Atlantic **1,643 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1994/95 - 1998/99)**

Knot , *Calidris canutus islandica*, W Europe/ Canada **12,394 individuals, representing an average of 2.75% of the W Europe population(5 year peak mean 1994/95 - 1998/99)**

Dunlin , *Calidris alpina alpina* Europe (breeding) **27,769 individuals, representing an average of 2.0% of the population (5 year peak mean 1994/95 - 1998/99)**

Black-tailed godwit , *Limosa limosa islandica*, Iceland (breeding) **1,747 individuals, representing an average of 3.7% of the population (5 year peak mean 1994/95 - 1998/99)**

Bar-tailed godwit , *Limosa lapponica* , W European (wintering) **1,150 individuals, representing an average of 1.2% of the Europe population (5 year peak mean 1994/95 - 1998/99)**

Redshank, *Tringa totanus*, Eastern Atlantic **5,293 individuals representing an average of 2.1% Eastern Atlantic population (5 year peak mean 1994/95 - 1998/99)**

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 22

15. 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

16. 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

17. 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; Llyn Alwen. The River Dee has a number of tributaries including the Afon Tryweryn, Afon Alwen, Afon Ceiriog and Afon Alyn. From Bala Lake, the path of the river trends generally east-south-east until it turns sharply northwards before meandering to Chester. 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. Below Chester, the river flows along a canalised artificial channel for 8 km before entering the estuary.

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 on Halkyn Mountain.

18. 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

19. Wetland types:**Marine/coastal wetland**

Code	Name	% Area
G	Tidal flats	63.9
H	Salt marshes	17.9
F	Estuarine waters	12.8
D	Rocky shores	0.2
E	Sand / shingle shores (including dune systems)	0.6
J	Coastal brackish / saline lagoons	0.0

	Total Habitat Cover	95.4
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Inland Wetlands

Code	Name	% Area
O	Permanent freshwater lakes	0.2
Tp	Permanent freshwater marshes/pools	0.5
W	Shrub-dominated wetlands	0.2
	Total Habitat Cover	0.9

Human-made Wetlands

Code	Name	% Area
4	Seasonally flooded agricultural land	3.5
7	Excavations	0.2
	Total Habitat Cover	3.7

b) dominance:

List the wetland types identified in a) above in order of their dominance (by area) in the Ramsar site, starting with the wetland type with the largest area.

G, H, F, 4, E, Tp, D/O/W/7

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

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 occurs. These are dominated usually by common reed *Phragmites australis* and sea club-rush *Bolboschoenus maritimus*. Uncommon saltmarsh species include saltmarsh flat-sedge, *Blysmus rufus*, a species close to its southern limit in North Wales together with the nationally scarce species, slender hare's-ear, *Bupleurum tenuissimum*, at its northern British limit of occurrence at the head of the estuary in Wales.

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. It also supports some nationally scarce biotopes including honeycomb worm reefs, *Sabellaria alveolata* around Hilbre Island and piddock beds (*Barnea candida*) on Holocene clay banks within the estuary. These invertebrates provide an abundant food source for fish and are of particular importance for waterbirds, with over 120,000 birds overwintering on the estuary.

The saltmarshes themselves support a variety of vegetation communities characteristic of estuaries in northern and western Britain. Part of the estuary is dominated by the non-native common cordgrass *Spartina anglica* although its extent is much less than formerly. 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 in large amounts. 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 subtidal zone of the Dee is believed to provide an important breeding, sheltering and nursery area for coastal fish species. The Dee Estuary also supports a number of migratory fish species including river lamprey, *Lampetra fluviatilis*; sea lamprey, *Petromyzon marinus*; Atlantic salmon, *Salmo salmar*; sea trout, *S. trutta*; twaite shad, *Alosa fallax*; smelt, *Osmerus eperlanus* and eels, *Anguilla anguilla*.

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 sand dune system between the Point of Ayr and Prestatyn supports a range of dune habitats and typical flora and faunal species. This system is the largest remaining areas of a once extensive dune system to be found along the north east coast of Wales. A number of nationally rare species occur including Portland spurge *Euphorbia portlandica*; dune fescue, *Vulpia membranacea*; white horehound, *Marrubium vulgare* and seaside centaury, *Centaurium littorale*. Within the dune slacks the rare liverwort, petalwort, *Petalophyllum ralfsii* occurs. Many nationally scarce invertebrates including a number of Red Data Book species such as the sandhill rustic moth, *Luperina nickerlii gueneei*, the sand wasp, *Podalonia affinis*, and the mining bee, *Colletes cunicularis* also occur. The natterjack toad, *Epidalea calamita* and sand lizard, *Lacerta agilis* have been successfully reintroduced to this system, where they historically occurred. Natterjack toads have also been successfully reintroduced to the smaller dune system at Red Rocks, where they became locally extinct in the early 1990's.

The Dee Estuary forms part of the complex of estuaries, which provide habitats for migratory waterbirds along the shores of Liverpool Bay, which in turn form part of the chain of such sites along the western coast of the UK. The relatively mild winter weather conditions found here compared to continental Europe can be of additional importance to the survival of wintering waterbirds during periods of severe weather. The Dee Estuary ranks amongst the top ten British estuaries for the size of its wintering waterbird population (Musgrove *et. al.*, 2001). Outside of this period, the Dee Estuary is also of particular importance as a staging area for migratory waterbirds/seabirds on autumn and spring passages. It lies on the East Atlantic Flyway route. The Dee Estuary also supports populations of the breeding seabirds, little tern, *Sterna albifrons* and common tern, *Sterna hirundo* and is used by a number of different tern species on passage. Sandwich tern, *Sterna sandvicensis* occurs in important numbers at this time

21. 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.

Rock Sea - lavender / *Limonium britannicum subspecies celticum*
(endemic)

Portland Spurge / *Euphorbia portlandica*

One-glume Fescue / *Vulpia membranacea*

Seaside Centaury / *Centaurium littorale*

Variiegated Horsetail / *Equisetum variegatum*

Slender Hare's Ear / *Bupleurum tenuissimum*

White or Common Horehound / *Marrubium vulgare*

b. Lower Plants

Petalwort / *Petalophyllum ralfsii*

Other species (invasive and/or non-native species)

Common cord-grass / *Spartina anglica*

Common sea-buckthorn / *Hippophae rhamnoides*

Rugosa rose, Japanese rose, or Ramanas rose / *Rosa rugosa*

Traveller's Joy / *Clematis vitalba*

22. 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 summer:

Little tern, <i>Sterna albifrons</i> E Atlantic	69 pairs breeding, 2.9% of the GB population (5 year peak mean 1995-1999)
Common tern, <i>Sterna hirundo</i> N/E Europe	392 pairs breeding, 3.2% of the GB population (5 year peak mean 1995-1999)
Sandwich tern, <i>Sterna sandvicensis</i> W Europe/W Africa	957 individuals on passage, representing an average of 2.3% of the GB population (5 year peak mean 1995-1999)
Redshank, <i>Tringa totanus</i>	about 200 pairs breeding. Regionally important population not reaching 1% national threshold but included on JNCC advice
Species with peak counts in spring/autumn:	
Ringed plover, <i>Charadrius hiaticula</i>	272 individuals, representing an average of 0.9 % of the GB population (5 year peak mean 1994/5-1998/9)
Species with peak counts in winter:	
Wigeon, <i>Anas penelope</i> , NW Europe	4526 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1994/5-1998/9)
Sanderling, <i>Calidris alba</i> , E Atlantic	502 individuals, representing an average of 2.2% of the GB population (5 year peak mean 1994/5-1998/9)
Cormorant , <i>Phalacrocorax carbo carbo</i> , NW Europe	405 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1994/5-1998/9)
Great Crested Grebe, <i>Podiceps cristatus</i> , NW Europe	114 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1994/5-1998/9)

Species Information

Birds

Birds Directive Annex 1 species which occur in less than 1% of the GB population include-

Leach's petrel *Oceanodroma leucorhoa*; Little egret *Egretta garzetta*; Bewick's swan *Cygnus columbianus bewickii*; Whooper swan *Cygnus cygnus*; Smew *Mergellus albellus*; Hen harrier *Circus cyaneus*; Merlin *Falco columbarius*; Peregrine *Falco peregrinus*; Golden plover *Pluvialis apricaria*; Ruff *Philomachus pugnax*; Wood sandpiper *Tringa glareola*; Short-eared owl *Asio flammeus* and Kingfisher *Alcedo atthis*

Other faunal information

1. Invertebrates including-

(a) terrestrial- the following Red Data Book species occur- sandhill rustic moth *Luperina nickerlii gueneei*; sand wasp, *Podalonia affinis* and the mining bee, *Colletes cunicularis*

(b) marine- thumbnail crab, *Thia scutellata*; honeycomb worm, *Sabellaria alveolata*; white piddocks, *Barnea candida*

2. Fish including River lamprey *Lampetra fluviatilis*; Sea lamprey *Petromyzon marinus* (Habitats Directive Annex I species)

3. Mammals including Grey seal *Halichoerus grypus* (Habitats Directive Annex II, Annex IV species (S1364))

4. Reptiles including sand lizard *Lacerta agilis* (Habitats Directive Annex IV species)

Other species (invasive and/or non-native species)

Mitten crab *Eriocheir sinensis*

23. Social and cultural values:

Describe if the site has any general social and/or 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

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

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

25. 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	+	+

26. Factors (past, present or potential) 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 exotic animal species	2	The Chinese mitten crab <i>Eriocheir sinensis</i> is an invasive non native species that was found in the Dee Estuary by the Environment Agency in 2006. The crab burrows into river and estuary banks and can cause severe erosion. It has been found upstream in the fluvial sections of the River Dee above Chester Weir too.	+	+	+
Introduction/invasion of non-native plant species	1	A programme of control including alien/alien woody species is currently underway within the Gronant Dunes and Talacre Warren SSSI. This will require ongoing work for a number of years yet	+	+	+
Overfishing	2	Review of existing fisheries byelaws excluding cockle fishery	+	+	+
Pollution – industrial waste	1	Contaminated land sites around the estuary	+	+	+
General disturbance from human activities	1	Dune systems are susceptible to destabilisation if not subject to active management to control recreational pressures from visitors and their activities	+	+	+
Transport infrastructure development	2	1. Port of Mostyn 2. Coastal path (foot/cycle)	+	+	+
Sand dune erosion and accretion along the North Wales open coast	2	Gronant Dunes and Talacre Warren	+	+	+

For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?

Introduction/invasion of exotic animal species.

As yet no plan has been put in place. Data collation is underway through casual sightings but ideally a full scale investigation needs to occur to ascertain how widespread the species is.

Over fishing

Now that the Dee Cockle Regulating Order is in place, the cockle fishery should be managed in a more sustainable manner. However there is a need to review the other sea fisheries byelaws on the Dee Estuary. The Sea Fisheries Committee on the Dee Estuary was the Environment Agency Wales, who have discussed their proposed byelaw revisions with various fishing and conservation groups and had proposed to formally consult on them. This is particularly important for various fish species as there is no minimum landing size stipulated in the byelaws which could be exploited both to the detriment of the fish stocks themselves and those animals feeding on them.

Additionally spawning areas need to be excluded from all fishing effort particularly in the canalised sections of the River Dee, upstream of the estuary. However the passage of the Marine Bill through the UK Parliament has stalled this process for the moment.

Transport Infrastructure Development

1. Port of Mostyn

a. Inshore Channel Dredging within the Dee Estuary

In March 2010 consent was given for maintenance of the navigable channel to the dock for three years to a depth of -4m below Chart Datum (CD) with disposal of dredgings within the estuary at Mostyn Deep to an agreed disposal pattern. This is subject to an agreed monitoring package with an annual review of the findings prepared by the Port and is subject to independent scrutiny by consultants employed by the regulators involved. This depth of dredging was agreed would not cause significant adverse impact on the estuary. The application for the dredge to -4m CD, was subject to detailed Environmental Impact Assessment.

b. Offshore Channel dredging

The Port have indicated previously that they might wish to further deepen the offshore channel along the North Wales coast at some time in the future.

c. Harbour Revision Orders (HRO)

The Port of Mostyn have proposed a Harbour Revision Order (HRO) which would extend their statutory harbour area over a larger area of the estuary than currently and it would include the main shipping channel to the port from offshore at Rhyl too. This will, if approved, give them permitted development powers in respect of their core business over this area. The EAW who are currently responsible for navigation matters on the Dee Estuary have also submitted a HRO covering the whole area of the Dee Estuary over which they are currently responsible. The HROs overlap in part particularly in relation to the Inshore Channel to the Port/Mostyn Deep disposal area. The two HROs were subject to scrutiny at the same public inquiry in November 2005. The result is still awaited.

d. New developments

a. Port of Mostyn, Mostyn, Holywell- Application for a construction license for the modification of an

existing berth (No 1). Food and Environmental Protection Act 1985 Part 2

CCW were consulted on 23rd December 2009, on this application and initially objected to it in our letter of 2 February 2010. The proposal involved the infilling of inter and subtidal land between the existing Mostyn breakwater and the mooring dolphins used currently by Ro-Ro vessels engaged in transshipping the A380 wings from Mostyn to Toulouse. The Port of Mostyn argued that they would need additional quay space to accommodate the number of vessels which would be engaged in construction work in connection with the Gwynt y Mor windfarm.

The proposal would involve the loss of 0.43 hectares of inter-tidal and 0.54 hectares of sub-tidal land, a total of 0.97ha. Much of the intertidal land comprised areas of slag waste from historic disposal from Mostyn ironworks and only a comparatively small area was actually inter-tidal mud and sandflats (0.12ha). It would also involve removing 50,000 cubic metres of sand from the estuary to infill the area of intertidal land required for the development. This sand would be derived from areas already consented for existing dredging of the navigation channel.

Apart from the direct loss of habitat, there was concern raised about possible disturbance to birds particularly redshank roosting on the breakwater in the vicinity of the development as well the small loss of intertidal habitat. Whilst the Port offered some mitigation to address possible impacts on bird populations in the vicinity of the development including screening, CCW requested additional mitigation measures including the provision of an additional, or much improved area suitable for bird roosting. Subsequently CCW wrote on 27 May 2010 to Welsh Government with our advice on the mitigation proposals set out in the letter of 19 May 2010 from ABPMer, which supplements and in part replaces the mitigations described in the earlier options report.

We concluded that CCW would remove its objection once it had seen a draft consent that confirms that various conditions necessary to safeguard the Ramsar site, had been included. Approval for the development was subsequently given, although it has not yet been implemented. Subsequently an area suitable for bird roosting was constructed on land owned by the Port away from the development site. This is correct at time of writing, June 2012.

b. Port of Mostyn. Marine Licence Consultation Proposed Pontoon for Wind Farm Service Vessels. Applicants RWEnPower but within Port of Mostyn's Statutory Harbour Area

On 22 February 2012, CCW responded to a consultation for marine licensing from Welsh Government under the Marine and Coastal Access Act 2009 for a pontoon at the Port of Mostyn to service maintenance vessels engaged in wind-farm work. The application was made by RWEnPower. It included an Environmental Statement (ES) as it was deemed to fall under the Marine Works (Environmental Impact Assessment) Regulations 2007 (As amended under Annex II (10) (e) – 'Construction of roads, harbours and port installations, including fishing harbours (projects not included in Annex 1)').

The application would result in the construction of a floating pontoon with walkways to land and would involve the installation of several piles to maintain the structure in situ. The piles would be situated mainly in subtidal areas, although some would be on intertidal land. The overall landtake within the site was small and the impact on coastal process was minimal. The structure would be removed at cessation of its use.

The main concern relating to this development was to a nearby high tide bird roost principally of redshank, a specific feature of the site and whether the development would cause their displacement or disturbance. CCW have not objected to the proposal provided that various recommendations are implemented. A decision on this is still pending. This is correct at time of writing, June 2012.

2. Coastal path

In Wales there has been a proposal for a Dee coastal footpath along the whole length of the Welsh shoreline from

Chester to Gronant prior to recent government announcements about a coastal footpath for Wales and coastal access in England. This was the subject of considerable debate between various interested parties in the 1990's and a number of potential problem areas were identified. These mainly related to locations of roosting bird populations at high tide along the Welsh Dee coast, although some sections of that path did cross habitats of interest too. This route was not progressed at the time as monies were not forthcoming. The route is now being progressed again following Government announcements and funding. Sections of route are being implemented in a piecemeal fashion. This piecemeal approach makes consideration of the overall impact of any route on the Ramsar site difficult.

In addition to the coastal path there is a further proposal for a coastal cyclepath following the whole of the Welsh coastline as above. As with the coastal footpath this is being developed in a piecemeal fashion.

The implications of coastal access in England are currently unclear.

Sand dune erosion and accretion along the North Wales open coast

The Gronant Dunes and Talacre Warren sand dune system shows signs of both accretion and erosion.

Erosion caused by terminal scour impacts of adjacent hard defences at the extreme western end of this system at Prestatyn has been rectified by beach nourishment with rock armour and shingle placed on the beach. Parts of the system to the west of the Prestatyn Gutter outfall onto the beach have been actively accreting such that new shingle bars forming to seaward of the dunes have developed new dune habitat, as sand has accreted on them. Further east however around Point of Ayr Lighthouse the dunes have regressed landward. A beach nourishment trial scheme with sand has slowed this regression in recent years and further nourishment schemes should be considered if suitable material is available.

If this system is to remain and not retreat it is essential that longshore drift along the coast from west to east is not interfered with by coastal defences to the west, by aggregate sand extraction or by offshore developments including channel dredging and windfarms. The second Shoreline Management Plan for cell 11a from the Great Orme to Southport currently being written needs to fully ensure that coastal processes are allowed to continue thereby maintaining the beaches and dunes. The dunes also need to be managed to ensure that they are not further threatened by recreational usage

Is the site subject to adverse ecological change? YES

27. 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)	+	+
Ramsar site	+	+
Special Protection Area (SPA)	+	+
Special Area of Conservation (SAC)	+	
Local Nature Reserve (LNR)	+	
Land owned by a non-governmental organisation for nature conservation	+	+
Other	+	+
Management plan in preparation	+	+

b) Describe any other current management practices:

The management of the site is determined by a formal management plan and through other management planning processes, overseen by the statutory conservation agencies, Natural England (NE) and Countryside Council for Wales. There are various management plans covering parts of the Dee Estuary Ramsar site which are reviewed periodically, approximately at five yearly intervals. In addition the site encompasses local nature reserves/nature reserves and there are management agreements with various parties. The major land owners include RSPB, MOD, Wirral Unitary Authority and the Environment Agency Wales, who manage the areas in their ownership sympathetically.

The Regulation 33 Management Plan is available on CCW & NE's websites (see below). Although the plan requires updating from Regulation 33, to Regulation 35 under the 2010 Habitats Regulations, the management plan measures remain relevant. The plan encompasses the Ramsar, SPA and SAC sites which overlap in this area, and in terms of the Ramsar features includes all those supported below Highest Astronomical Tide (HAT). Draft objectives are in place for those site features supported above HAT (e.g. Natterjack Toad) and these should be formalised in 2012. The combination of measures ensures the majority of the site is managed sympathetically.

<http://www.naturalengland.org.uk/>
<http://www.ccw.gov.uk/>

28. Conservation measures proposed but not yet implemented:

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

See point 26

29. 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; common terns are ringed within the Shotton Lagoons and Reedbeds SSSI at Shotton Steelworks; the little terns are ringed at Gronant Dunes

Survey work carried out by a group of regulators including CCW, Environment Agency Wales (EAW) and the Port of Mostyn on the impacts of dredging around the port and environs are ongoing. They include regular bathymetric surveys of the sandbanks around the dredged area, infaunal transect surveys and a survey of a nationally important marine community (Piddocks (boring bivalves) in Clay) on the outer Salisbury bank.

The EAW are carrying out intertidal surveys to fulfil the requirements of the Water Framework Directive.

As part of their Cockle Regulation Order, EAW undertake cockle stock assessments on at least an annual basis to determine whether the beds should be opened to the fishermen who have permits under the Cockle Regulation Order. The stock assessment takes account of the recommendations made following previous work on 'Modelling Oystercatchers and their Food on the Dee Estuary'

A biotope mapping survey of the Dee Estuary has been carried out by CCW (2002) on the Welsh side and NE (2005) on the English side.

Regular surveys of a number important species occur including natterjack toad; sand lizard; sandhill rustic moth; mining bees;

Other animals

The populations of natterjack toad and sand lizard are monitored annually by the local rangers, the local amphibian and reptile group and other volunteers.

Flora.

Regular surveys of scarce species occur including petalwort

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

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 to all primary and secondary schools around the estuary both in England and Wales.

31. 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)

32. Jurisdiction:

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

International Protected Areas Team, Department for Environment, Food and Rural Affairs, Zone 1/16,
Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN

Head of Marine Branch, Department for Environment and Sustainability, Welsh Assembly
Government, Cathay's Park, Cardiff CF10 3NQ

33. 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, Natural England, 1 East Parade, Sheffield, S1 2ET, UK / Site Safeguard
Officer, International Designations, Countryside Council for Wales, Maes-y-Ffynnon,
Penrhosgarnedd, Bangor, Gwynedd, LL57 2DW

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

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