

Information Sheet on Ramsar Wetlands (RIS)

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: 05 January 1976

3. Country:

UK (Wales)

4. Name of the Ramsar site:

Cors Fochno and Dyfi

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:

** 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:

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 is the same as, or falls within, an existing protected area.

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

8. Geographical coordinates (latitude/longitude):

52 32 21 N 03 59 52 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: Aberystwyth

Cors Fochno and Dyfi Ramsar site lies 10 km north of Aberystwyth on the coast of Cardigan Bay in mid Wales.

Administrative region: Ceredigion; Gwynedd; Powys

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 2492.24

| | |
|------|----|
| Min. | -1 |
| Max. | 10 |
| Mean | 1 |

12. General overview of the site:

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

A bar-built estuarine complex, comprising the Dyfi estuary, two calcareous dune systems, and a large raised mire. The Dyfi is one of the best examples in north-west Europe of a small, drying, nutrient-poor estuary, which has been relatively unaffected by industrial development. A wide range of estuarine habitats are present, including rare transitions to peatland. Cors Fochno is of international importance being the type locality for estuarine raised mire and one of the largest active raised mires in the United Kingdom. The geomorphology, flora and invertebrate faunas are of national importance. The site supports the only regular wintering flock of Greenland white-fronted geese in England and Wales, and is a key site in Wales for breeding waders. The site supports significant tourist trade, recreational and educational usage.

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).

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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

The site contains the largest expanse of primary raised mire in lowland Britain; the largest estuarine raised mire, and third-largest `active` raised mire in Britain. Habitats Directive Annex I features present on the SAC include:

- H7110 Active raised bogs
- H7120 Degraded raised bogs still capable of natural regeneration
- H7150 Depressions on peat substrates of the *Rhynchosporion*

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 | acidic, neutral, shingle, sand, mud, peat, nutrient-poor, sedimentary, slate/shale, pebble |
| Geomorphology and landscape | lowland, coastal, shingle bar, intertidal sediments (including sandflat/mudflat), open coast (including bay), estuary, pools |
| Nutrient status | mesotrophic, oligotrophic |
| pH | acidic, circumneutral, strongly acidic |
| Salinity | brackish / mixosaline, fresh, saline / euhaline |
| Soil | mainly mineral, mainly organic |
| Water permanence | usually permanent, usually seasonal / intermittent |
| Summary of main climatic features | Annual averages (Trawscoed, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/trawscoed.html) Max. daily temperature: 13.5° C Min. daily temperature: 5.9° C Days of air frost: 48.2 Rainfall: 1213.9 mm Days of rainfall >= 1 mm: 169.2 |

General description of the Physical Features:
No information available

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 Dyfi estuarine complex is of outstanding physiographic interest. It includes sandbanks, mud-flats, saltmarsh, peatbogs, river channels and creeks, with an extensive sand dune complex across the mouth of the estuary.

Cors Fochno (also known as Borth Bog) lies on the south side of the Dyfi estuary and forms a component part of the Dyfi Biosphere Reserve. Although a substantial part of the former peatland complex has been taken for agriculture, the surviving core area supports the largest expanse of primary near-natural active raised bog in an estuarine context within the UK. Extensive areas of patterned mire support bog-mosses *Sphagnum* spp. with greater sundew *Drosera anglica*, white beak-sedge *Rhynchospora alba* and bog-rosemary *Andromeda polifolia*. The extensive cover of bog-myrtle *Myrica gale* and maritime margins with black bog-rush *Schoenus nigricans* are distinctive features of this site. Areas of domestic peat-cutting peripheral to the dome are now actively regenerating and support a significant area of active bog vegetation.

Degraded raised bog also occurs widely around the periphery of the active core. Included here are a range of vegetation types in which peat formation has been arrested as a consequence of intensive drainage followed in places by peat removal and/or agricultural management. The vegetation cover of these areas is varied and includes grazed and ungrazed *Molinia* – *Myrica* swards, reed *Phragmites* stands, rush *Juncus* pasture, wet woodland and scrub, drier areas of acid grassland and bracken *Pteridium aquilinum*, and improved grassland over archaic deep peat.

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, Recharge and discharge of groundwater, Flood water storage / desynchronisation of flood peaks

19. Wetland types:

Marine/coastal wetland

| Code | Name | % Area |
|------|--|--------|
| G | Tidal flats | 48.7 |
| U | Peatlands (including peat bogs swamps, fens) | 25.4 |
| H | Salt marshes | 22 |
| E | Sand / shingle shores (including dune systems) | 3.9 |

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 Dyfi estuary contains a particularly wide range of intertidal sediment types which support a good diversity of marine biotopes. The tidal flats are bordered by the most extensive saltmarshes in mid-Wales which include a notable expanse of SM18 *Juncus maritimus* saltmarsh and rare transitions to peatland. The shingle/sand spit of Ynyslas lying across the estuary mouth contains a wide range of dune communities including damp slacks. The estuarine raised mire of Cors Fochno contains one of the most extensive tracts of primary and 'active' raised bog in Britain, with abundant M18 *Sphagnum papillosum*-*Erica tetralix* community. The nationally scarce *Sphagnum pulchrum* is dominant in the bryophyte carpet. Extensive areas of modified mire support a wide range of peatland communities including *Sphagnum* bog-pools, *Myrica*-*Molinia* mire, *Phragmites* swamp, rush pasture and carr woodland. Of special note are areas of brackish mire with abundant *Schoenus nigricans*.

Ecosystem services

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.

Lower Plants.

Pallavicinia lyellii, *Bryum calophyllum*, *Bryum warneum*, *Bryum marratii*, *Petalophyllum ralfsii*
(Habitats Directive Annex II feature (S1395)).

- a) Dune slack & shingle bryophyte assemblage, including RDB species *Petalophyllum ralfsii* and *Bryum marratii*
- b) Dune fungal assemblage including around 10 Red list species
- c) Mire bryophyte assemblage including 3 nationally scarce Sphagna and RDB species
Pallavicinia lyellii

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 spring/autumn:**

| | |
|--|---|
| Common greenshank , <i>Tringa nebularia</i> , Europe/W Africa | 8 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9- 2002/3) |
|--|---|

Species Information

Nationally important species occurring on this site.

Mammals

Otter *Lutra lutra* (Habitats Directive Annex II feature (S1355)) - strong resident population

Invertebrates.

Agroeca lusatica, *Baraohyma gowerense*, *Heliophanus dampfi*, *Biblioplectus tenebrosus*,
Eugraphe subrosea, *Pachybrachius simile*, *Coenosia paludis*.

Dune invertebrate populations, including the spider *Agroeca dentigera* (only UK site), and 4 RDB species of aculeate Hymenoptera.

Mire invertebrate assemblage, including a number of RDB and nationally scarce species
Pectenogammarus planicrurus, nationally scarce.

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

Archaeological/historical site

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 | + | |
| Private | + | + |
| Public/communal | + | |

25. Current land (including water) use:

| Activity | On-site | Off-site |
|--------------------------------|---------|----------|
| Nature conservation | + | + |
| Tourism | + | + |
| Recreation | + | + |
| Current scientific research | + | |
| Commercial forestry | | + |
| Fishing: commercial | | + |
| Fishing: recreational/sport | + | |
| Gathering of shellfish | + | |
| Bait collection | + | |
| Grazing (unspecified) | + | + |
| Permanent pastoral agriculture | + | + |
| Hunting: recreational/sport | + | |
| Industry | | + |
| Sewage treatment/disposal | + | |
| Harbour/port | | + |
| Flood control | + | |
| Oil/gas exploration | | + |
| 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? |
|-------------------------|--------------------|--|---------|----------|---------------|
| No factors reported | NA | | | | |
| | | | | | |

For category 2 factors only.

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

Is the site subject to adverse ecological change? NO

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) | + | |
| National Nature Reserve (NNR) | + | |
| Special Protection Area (SPA) | + | |
| Management agreement | + | |
| Site management statement/plan implemented | + | |
| Other | + | |
| Special Area of Conservation (SAC) | + | |

b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

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

No information available

29. Current scientific research and facilities:

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

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.

Monitoring of breeding curlew, lapwing, redshank and snipe populations, breeding bird assemblage; reptile assemblage; invertebrate assemblage; populations of rosy marsh moth, large heath butterfly, small red damselfly, bog bush cricket, *Heliophanus dampfi*, *Colletes cunicularis*.

Long-term changes in the invertebrate fauna of Ynyslas beach.
Fauna of Dyfi estuarine creeks and channels.

Environment.

Low nutrient status estuaries in Wales: an appraisal of their nutrient and ecological status.
The role of biogenic gas production in raised mire hydrology
The use of remote sensing in determining differing degrees of surface wetness in raised mires
Palaeoecological investigation of recent vegetational changes at Cors Fochno and Cors Caron raised mires

Cors Fochno/Dyfi: hydrological, coastal defence and SSSI boundary requirements (major research project into restoration of Cors Fochno estuarine raised mire).
Geophysical and geochronological assessment of the structure and development of coastal dunes.
Monitoring of water levels at Cors Fochno.

Flora.

Monitoring of saltmarsh and raised mire vegetation.
Dune bryophyte assemblage & population of *Petalophyllum ralfsii*.
Mire bryophyte assemblage & population of two rare *Sphagna* and *Pallavicinia lyellii* and charophytes.
Community ecology of dune annuals.

Completed.

Flora.

Monitoring of sand dune, saltmarsh and raised mire vegetation.

Fauna.

Invertebrates: effects of fire on cursorial fauna of raised mire 1987-96 (Fowles in prep).
Welsh peatlands invertebrate survey (Holmes *et al.* 1991).
Predators and lapwing study - RSPB/CCW
Aculeate Hymenoptera of Ynyslas dunes (Clee 2001)

Flora and Fauna.

Marine Nature Conservation Review Littoral survey of Dyfi estuary (Joint Nature Conservation Committee 1995).
Countryside Council for Wales (1997) CCW Marine Intertidal Phase 1 Study of biotopes in the Dyfi Estuary Monitoring planned 2005

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.

Existing programmes: CCW and RSPB each operate an events programme of guided walks. CCW also run an educational play scheme for children and employ and train four Summer Wardens annually.

Interpretation/education facilities: CCW operate a seasonal centre at Ynyslas dunes with displays, audio visual show, and site interpretation publications and conservation shop. Interpretive panels are provided on the dunes. 6-7000 students visit per annum, c.2000 receiving introductory talks. RSPB run an educational service at Ynys-hir where c.1500 students a year are given guided tours. Ynys-hir also has a centre with interpretive displays and shop. Major research and educational use by University College of Wales, Aberystwyth (as well as other universities).

31. Current recreation and tourism:

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

Activities, Facilities provided and Seasonality.

Walking, dog walking and beach recreation is concentrated on the sandy beaches and dunes at Ynyslas and Aberdyfi. These activities are sustainable only with high levels of visitor/site management input. Birdwatching is the principal activity at RSPB Ynys-hir and also attracts people to Ynyslas and Aberleri.

Water-skiing, jet-skiing, sailing, wind-surfing, canoeing and angling all occur and are concentrated in the lower third of the estuary. Mainly April-September.

Game shooting takes place at Lodge Park. Wildfowling takes place on part of the NNR under the control of CCW and via a local management scheme. A coastal defence scheme for Aberdyfi-Towyn has been proposed involving an area of coastal set-back.

There are caravan parks adjacent to the site at Ynyslas and Borth and moorings at Aberdyfi and Aberleri. A small boat-building business is in operation at Aberleri. Aberdyfi beach car park is undergoing enlargement and there has recently been a harbour development/marina proposal for the town.

'Outward Bound Wales' have a centre at Aberdyfi, and there is a YHA hostel at Borth.

32. Jurisdiction:

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

Head, Countryside Division, Welsh Assembly Government, Cathays Park, Cardiff, CF1 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 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.

Site-relevant references

Bailey, MP (2003) Reserve focus – Cors Fochno (Borth Bog), west Wales. *British Wildlife*, **14**(3), 195-198

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Brazier, DP, Holt, RHF, Murray, E & Nicholls, DM (1999) *Marine Nature Conservation Review Sector 10. Cardigan Bay and north Wales: area summaries*. Joint Nature Conservation Committee, Peterborough (Coasts and seas of the United Kingdom. MNCR series)

Buck, AL (ed.) (1993) *An inventory of UK estuaries. Volume 2. South-west Britain*. Joint Nature Conservation Committee, Peterborough

- Campbell, S & Bowen, DQ (1989) *Quaternary of Wales*. Nature Conservancy Council, Peterborough (Geological Conservation Review Series, No. 2)
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- Fowles, A (1994) *Invertebrates of Wales: a review of important sites and species*. Joint Nature Conservation Committee, Peterborough
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- Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm
- Weighell, AJ, Donnelly, AP & Calder, K (eds.) (2000) *Directory of the Celtic coasts and seas*. Joint Nature Conservation Committee, Peterborough

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