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:

FOR OFFICE USE ONLY.

DD MM YY

Designation date | Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 08 June 1993

3. Country:

UK (Wales)

4. Name of the Ramsar site:

Crymlyn Bog

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):

51 38 08 N 03 53 16 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: Swansea

Crymlyn Bog lies within a south Wales industrial and urban landscape between Swansea and Neath, 1 km inland of the coast.

Administrative region: Abertawe/ Swansea; Castell-Nedd a Porth Talbot/ Neath and Port Talbot

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 264.18

Min. 7
Max. 9
Mean 8

12. General overview of the site:

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

Crymlyn Bog comprises a floodplain-valley mire located within a lowland coastal context and is the most extensive wetland of its type in Wales. The mire features a complex mosaic of vegetation types, supporting examples of swamp, tall herb fen, fen meadow and carr communities. The site supports an exceptionally wide range of rich and poor fen communities, some of which bear a close floristic affinity to certain floodplain mires in East Anglia. The presence of significant areas of saw sedge *Cladium mariscus* swamp is notable in extensive stands of this uncommon vegetation type, occurring at only three other sites in Wales. Crymlyn Bog is part of a larger inter-estuarine complex which includes the adjacent Pant y Sais fen.

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, 3

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

Largest example of valley floodplain topogenous mire in South Wales, and one of the largest surviving fens in the west of Britain. Very few other sites are known to support a comparable complexity and diversity of vegetation. Habitats Directive Annex I features present on the SAC include:

H7140 Transition mires and quaking bogs

H7210 Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*

H91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*

Ramsar criterion 2

Supports a substantial population of the nationally-rare slender cotton-grass *Eriophorum gracile*, and a rich invertebrate fauna including many rare and highly localised species.

Ramsar criterion 3

The site supports 199 vascular plant species including 17 regionally-uncommon and one nationally-rare.

See Sections 21/22 for details of noteworthy species

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	mud, clay, peat, nutrient-poor
Geomorphology and landscape	lowland, floodplain, pools
Nutrient status	eutrophic, highly eutrophic, mesotrophic, oligotrophic
pH	acidic, alkaline, strongly acidic
Salinity	fresh
Soil	mainly organic
Water permanence	usually permanent
Summary of main climatic features	Annual averages (Cardiff, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/cardiff.html) Max. daily temperature: 14.3° C Min. daily temperature: 6.8° C Days of air frost: 33.0 Rainfall: 1111.7 mm Hrs. of sunshine: 1518.0

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).

Crymlyn Bog has been described as a natural oasis in a densely industrial landscape. The bog at Crymlyn is surrounded by a major oil refinery, a waste disposal tip and large housing estates. Earlier, industries used its water to establish a transport system, and the remains of a 19th century canal network are still evident today.

The bog is the most extensive area of lowland fen in Wales, and it lies in the flood plain of the Neath river estuary. The plants here are more typical of East Anglia. The habitats include swamps, meadows, tall reed beds, and waterlogged scrub, mainly of willow, where the wetter areas merge with woodland.

18. Hydrological values:

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

No special values known, Water supply

19. Wetland types:

Human-made wetland, Inland wetland

Code	Name	% Area
U	Peatlands (including peat bogs swamps, fens)	79.9
W	Shrub-dominated wetlands	9.8
Other	Other	9.2
9	Canals and drainage channels	0.7
Tp	Freshwater marshes / pools: permanent	0.4

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.

This site embraces the more acid range of variation of the Calcareous fens with *Cladium mariscus* habitat type and is relatively species-poor. It is one of the largest sites for *Cladium* spp in south Wales. There are large stands of *Cladium* spp, with transitions to a highly distinctive suite of tall-herb fen communities, often dominated to varying degrees by *Phragmites australis*. The area is also important for the occurrence of a substantial population of the nationally-rare cotton-grass *Eriophorum gracile*.

Plant communities grade from *Sphagnum* dominated poor fen with *Narthecium ossifragum* and *Utricularia vulgaris* to more eutrophic associations with *Typha angustifolia, Typha latifolia, Cladium mariscus* and *Carex elata. Molinia caerulea* is dominant in drier areas, with stands of pure *Phragmites australis* reedswamp where conditions are wettest. Willow-birch and alder carr woodland with *Carex paniculata* occur on the eastern margins.

The site supports an exceptionally wide range of rich- and poor-fen communities, some of which bear a close floristic resemblance to certain floodplain mires in East Anglia, including S2 *Cladium mariscus* swamp and sedge-beds, and *Cladio-molinietum* communities which are in the central part of the bog.

A key feature concerns the presence of tall herb fen communities transitional between swamp and fen, with sedge beds dominated by *Cladium mariscus* being of particular importance.

Also of international significance is the Transition Mire and Quaking Bog community, characterised by the presence of *Carex rostrata*, *Menyanthes trifoliata*, *Carex limosa* and supporting good stands of the nationally important *Eriophorum gracile*.

Ecosystem services

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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.

Eriophorum gracile.

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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 Information

Nationally important species occurring on the site.

Invertebrates.

The more significant wetland rarities at Crymlyn Bog include:
Dolomedes plantarius
Crossocerus vagabundus (Panzer) Hymenoptera, Sphecidae
Pteromicra leucopeza (Meigen) Diptera, Sciomyzidae
Cephalops perspicuus (de Meijere) Diptera, Pipunculidae
Gyrinus suffriani (Scriba 1855) Coleoptera, Gyrinidae

The nationally scarce hornet robberfly Asilus crabroniformis *occurs on the drier grassland slopes bordering the fen*

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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
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing

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*
Local authority, municipality etc.	+	+
Private	+	
Public/communal	+	

25. Current land (including water) use:

Activity	*On-site*	*Off-site*
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Fishing: recreational/sport	+	+
Fishing: subsistence	+	+
Livestock watering hole/pond	+	+
Grazing (unspecified)	+	+
Rough or shifting grazing	+	+
Industrial water supply	+	+
Industry		+
Flood control	+	+
Oil/gas production		+
Transport route		+
Urban development		+

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?*
Eutrophication	*1*		+		

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)	+	
Site management statement/plan implemented	+	
Other	+	
Special Area of Conservation (SAC)	+	+
Management plan in preparation	+	

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.

Environment.

A review of the hydrological processes at Crymlyn Bog NNR was completed by the Environmental Consultancy at the University of Sheffield, on contract to CCW in March 1998. Following the announcement by BP/Mobil Llandarcy in November 1997 of the closure of the oil refinery over the next two years, CCW and the Environment Agency continue to worked closely with BP and their consultants regarding the implementation of a comprehensive risk-based strategy to the long-term amelioration of the refinery site and its redevelopment for housing. This includes associated pollutant influences on the adjacent Crymlyn Bog. During 2004 CCW and the Environment Agency worked jointly on a detailed hydrological and nutrient assessment of the site to ascertain the overall nutrient loading on sensitive mire communities (Headley 2004). These studies will also inform CCW's long term aspirations for the restoration of historical water channels. It is proposed to continue with a water quality monitoring programme and further studies will be undertaken in 2005 to inform restoration work on a relict canal and the Crymlyn Brook. A presentation of this recent research was given to the British Hydrological Society in 2004.

Flora.
Annual census of slender cotton-grass Eriophorum gracile.

(no longer current)
Preliminary survey for lichens and bryophytes of the wet woodlands

Fauna.
Monitoring of hornet robberfly, survey for additional populations of the fen raft spider, and moth-trapping.
Bird ringing.

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.

Used by visiting university groups for studies on entomology, peat stratigraphy and fenland communities, used by local school groups for studies relevant to the National Curriculum. Crymlym Visitors Centre is used for school groups and talks. It houses a permanent exhibition and is a focal point for field study groups. Meetings and guided walks, focused on the visitors centre. Annual open days. Long-term partnership with Swansea Environment Centre as educational providers and recent Community Liaison work undertaken through the British Trust for Conservation Volunteers (BTCV) (no longer current). Pant y Sais fen is a Local Nature Reserve and is also used by school groups via boardwalk access.

31. Current recreation and tourism:

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

Activities.

All low-key: walking, dog walking, birdwatching, sport/recreational fishing in relict canal.

Facilities provided.
Car parking, nature trails and interpretative leaflets. There are themed open days, guided walks, on-site interpretative information, and disabled access at Pany-y-Sais.

Seasonality.
Year-round access and use. There is summer wardening April-September.

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

Barber, KE & Hughes, PDH (1995) *Palaeoecology and radiocarbon dating of peat deposits at Crymlyn Bog National Nature Reserve, south Wales*. Report for the Countryside Council for Wales. (Contractor: University of Southampton)

Dumayne-Peaty, L (1998) *Holocene palaeoecology and development of Crymlyn Bog NNR, south Wales. Final report to British Petroleum and Countryside Council for Wales*

Fowles, A (1994) *Invertebrates of Wales: a review of important sites and species*. Joint Nature Conservation Committee, Peterborough

Headley, AD (2004) Substratum enrichment at Crymlyn Bog cSAC, south Wales: an analysis of current and future impacts with particular reference to SAC feature fen communities. *CCW Contract Science Report*, No. **652**

Headley, AD (2005) Investigations of canal sediment and peat chemistry at Crymlyn Bog NNR, south Wales. *CCW Contract Science Report*, No. **721**

Headley, AD, Wheeler, BD & Baker, AJM (1992) The impact of man on the vegetation of Crymlyn Bog. In: *Peatland ecosystems and Man: an impact assessment*, ed. by OM Bragg, PD Hulme, HAP Ingram & RA Robertson, 257-261. University of Dundee, Department of Biological Sciences

Hughes, PDM & Dumayne-Peaty, L (2002) Testing theories of mire development using multiple successions at Crymlyn Bog, West Glamorgan, south Wales, UK. *Journal of Ecology*, **90**(3), 456-471

Jones, PS, Stevens, DP, Blackstock, TH, Burrows, CR & Howe, EA (eds.) (2003) *Priority habitats of Wales: a technical guide*. Countryside Council for Wales, Bangor

McLeod, CR, Yeo, M, Brown, AE, Burn, AJ, Hopkins, JJ & Way, SF (eds.) (2004) *The Habitats Directive: selection of Special Areas of Conservation in the UK*. 2nd edn. Joint Nature Conservation Committee, Peterborough. www.jncc.gov.uk/SACselection

Robertson, J (2000) Reserve focus – Crymlyn Bog NNR, Glamorgan. *British Wildlife*, **12**(1), 22-27

Rosen, D & Dumayne-Peaty, L (2001) Human impact on the vegetation of south Wales during late historical times: palynological and palaeoenvironmental results from Crymlyn Bog NNR, West Glamorgan, Wales, UK. *The Holocene* **11**(1), 11-23

Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**

Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**