

**CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES**

**CORE MANAGEMENT PLAN
INCLUDING CONSERVATION OBJECTIVES**

FOR

CORS FOCHNO SAC

Version: 18

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Approved by: Charlotte Gjerlov

**More detailed maps of management units can be provided on request.
A Welsh version of all or part of this document can be made available on request.**



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PREFACE

This document provides the main elements of CCW's management plan for the site named. It sets out what needs to be achieved on the site, the results of monitoring and advice on the action required. This document is made available through CCW's web site and may be revised in response to changing circumstances or new information. This is a technical document that supplements summary information on the web site.

One of the key functions of this document is to provide CCW's statement of the Conservation Objectives for the relevant Natura 2000 site. This is required to implement the Conservation (Natural Habitats, &c.) Regulations 1994, as amended (Section 4). As a matter of Welsh Assembly Government Policy, the provisions of those regulations are also to be applied to Ramsar sites in Wales.

1. VISION FOR THE SITE

This is a descriptive overview of what needs to be achieved for conservation on the site. It brings together and summarises the Conservation Objectives (part 4) into a single, integrated statement about the site.

This plan covers the 653 ha of Cors Fochno SAC which is part of the larger Dyfi SSSI (3792ha). The management plan for the remainder of Dyfi SSSI is currently being developed.

CCW's vision for Cors Fochno will encompass both biological (the flora and fauna) and geological features (the peat deposit archive) the condition of which, are highly dependent upon each other, and upon the surrounding hydrological conditions.

On the active raised bog and where possible on the degraded raised bog the peat, both surface and subsurface layers will be restored, and maintained in waterlogged, anoxic condition thereby: protecting the unique record of post-glacial environmental development and enabling its continued development; and, improving the site carbon balance by enhancing peat growth and reducing oxidation. Additionally, and importantly, re-hydration of the peat body will enable the raised bog vegetation to attain and maintain good condition, increase its robustness in the face of environmental change and reduce the requirement for future management intervention.

The central, uncut area of the bog will display a shallow domed profile, with a spongy surface, capable of responding to variable rainfall patterns by small adjustments in surface elevation. Prominent in the vegetation will be a typical range of raised bog *Sphagnum* mosses, which together will contribute a ground cover of at least 25% across the primary bog surface. Across the greater part of the central dome the vegetation will exhibit a patterned micro-topography, with quaking hollows interspersed with bog moss lawns and hummocks. Carpets of the scarce, oceanic bog moss, *Sphagnum pulchrum* will be common in hollows and lawns, along with white beak-sedge and greater sundew. Bog rosemary will be present throughout the central dome, which will also support healthy populations of two nationally scarce hummock mosses *Sphagnum fuscum* and *S. austinii*. Locally, and especially towards the margins of the uncut dome, the vegetation will contain a higher proportion of hare's-tail cottongrass, heathers and bog myrtle, but the vegetation will be substantially free from tree species and purple moor grass.

The greater part of the old peat cuttings will have vegetation very similar to that of the central dome. The cuttings will support bog pool and hollow vegetation, and the baulks will be sufficiently wet to support 20% or more bog mosses cover. Vegetation dominated by purple moor grass and/or bog myrtle and/or common reed will occur around the degraded bog margins but will not be encroaching on the sphagnum bog communities. Bog mosses will have frequent occurrence in these other communities and tree encroachment will be absent or at a low level. Woodland habitat will not be increasing in extent.

Assemblages of key plant and animal species characteristic of the diverse range of mire and associated wetland communities of the bog margins and transitions will be maintaining favourable populations, while species intolerant of surface waterlogging such as bracken and most grass species will be absent or rare throughout the site, as will alien invasive species such as rhododendron.

In some areas of the bog periphery subject to past or present salt-water influence there will be examples of salt-influenced vegetation typified by the presence of sea rush and black bog rush. There will also be some areas showing transitions from peat to mineral soils which

support freshwater lagg-fen or lagg swamp vegetation.

Stakeholders will value the site for its exceptional natural qualities and the range of ecosystem services it provides. They will recognise for example the important function of the peatland for carbon capture and storage (see link below), and they will support wise use of the peatland ecosystem. New approaches to hydrological and flood-risk management are likely to be required.

<http://www.unep.org/Documents/Multilingual/Default.asp?DocumentID=523&ArticleID=5723&l=en>

2. SITE DESCRIPTION

2.1 Area and Designations Covered by this Plan

Grid reference: **SN631913**

Unitary authority: Ceredigion

Area (hectares): 652.71

Designations covered:

Cors Fochno SAC The plan covers the whole of the SAC

Dyfi SSSI (Cors Fochno SAC is part of the larger SSSI) An additional management plan is being developed to cover the remainder of the Dyfi SSSI)

Dyfi NNR (covers part of Cors Fochno SAC and part of the wider SSSI)

Ramsar site (as for NNR)

Dyfi Biosphere Area(SAC comprises core conservation zone of BA)

Detailed maps of the designated sites are available through CCW's web site:

<http://www.ccw.gov.uk/interactive-maps/protected-areas-map.aspx>

For a summary map showing the coverage of this document see attached Unit Map.

2.2 Outline Description

The peatland complex of Cors Fochno lies on the southern flank of the Afon Dyfi, within the estuarine floodplain. It is a rare and striking landscape feature, and considered to be the 'locus typicus' for estuarine raised mire in the UK. Although reduced in size by drainage and reclamation, the remaining expanse at Borth comprises one of the largest actively growing raised bogs in the lowlands of Britain, and accounts for around 4% (200ha) of the total British resource of primary surface (i.e. uncut) raised mire.

Cors Fochno is a site of national geological importance containing a 7m deep peat archive, continuously developed over 5000 years and storing information on sea level, climate and other environmental change. This, together with the site being one of only a handful in the UK considered representative of active northern peatland complexes make the site highly valued for research, particularly relating to climate change. The bog also contains important archaeological remains including the best example of a medieval timber trackway known in Wales.

The intact central dome of the bog has a gently undulating mosaic of hummocks and hollows supporting classic oceanic raised bog vegetation, in which *Sphagnum pulchrum* and bog myrtle *Myrica gale* are prominent. Other rare sphagna include *Sphagnum austini* and *Sphagnum fuscum*, while all three species of British sundews *Drosera* spp. are present, and brown beaked sedge *Rhynchospora fusca* occurs in old peat cuttings. A wide range of habitat including poor-fen, reedswamp and carr woodland occur around the modified margins of the bog, supporting a diverse flora which includes uncommon species such as royal fern *Osmunda regalis* and lesser butterfly orchid *Platanthera bifolia*. In areas of saline influence transitional communities typified by the presence of black bog rush *Schoenus nigricans* are a notable feature.

The invertebrate assemblages are of great interest and include a wide range of nationally scarce species, such as large heath butterfly *Coenonympha tullia*, bog bush-cricket *Metrioptera bracyptera* and small red damselfly *Ceriagrion tenellum*. The rosy marsh moth *Eugraphe subrosea* has its major British stronghold here. Also present at its only locality in England and Wales is *Heliophanus dampfi*, a spider found only on a small number of highest quality raised bogs.

The site also supports regionally important breeding and wintering bird assemblages. Amongst the former are teal, curlew, grasshopper warbler, skylark and reed bunting, whilst wintering species include hen harrier and merlin. Mammal populations include resident otter. The reptile assemblage includes a strong population of adder.

2.3 Outline of Past and Current Management

Past management

Drainage & reclamation

Prior to c.1750 Cors Fochno had a predominantly natural drainage system with raised mire covering a significantly greater area of the Dyfi flats, and with natural transitions into saltmarsh and lagg fen.

Major drainage/reclamation works affecting the mire were the construction of the Dyfi floodbank (mostly co-incident with the Cambrian Coast Railway embankment), and around 1820-30, canalisation and embanking of the Dyfi tributaries (Leri, Clettwr, Ddu and Einion) together with enhancement of the Pwll du drain. Additionally, maps of 1830 show ditches cut to the heart of the raised bog, evidently aimed at draining two large bog pools still extant at the time, but lost by 1880. Thus by c1830 the western bog extremities at Aberleri/Morfa Borth were cut off from the main bog. The southern margins were drained by the Pwll Du ditch, and the road across the bog from Taliesin to Ynyslas effectively separated the main mire unit (Borth bog) from the eastern half of the original Cors Fochno. Transformation of the partially drained mire and marsh in this eastern sector to archaic bog, has mostly taken place since 1945.

Drainage efforts around the western expanse (Borth bog), primarily for agricultural purposes, continued up until 1970 and the beginnings of statutory protection. In the 1960's much of the bog was in the ownership of a Lincolnshire based arable consortium with plans for comprehensive drainage and reclamation. Only after three deep, 1km long ditches running east from the Leri were excavated, were these plans abandoned.

It is estimated that around two thirds of the original 4500 hectares of bog and tidal marsh which comprised Cors Fochno pre-reclamation have been converted to farmland.

Peat cutting

The practice of peat cutting, by hand, on Cors Fochno is believed to date back many centuries, though no precise date of origin is known. The extent of exploitation, ringing the uncut dome, is best seen from aerial photographs. The cuttings, which were solely the result of traditional hand-cutting methods, are shallow and usually run with the slope towards a peripheral ditch to aid the drainage process. Peat cutting was normally preceded by draining in the year prior to cutting in order to 'dry-off' the upper layers of peat, hence the system of drains associated with the cut-over peripheries of the main dome. Peat cutting was last carried out in the 1950's. Today many old cuttings are re-colonised by bog vegetation but large areas have become dominated by species-poor *Molinia* mire, reedswamp and scrub woodland.

Grazing & burning

The bog appears to have been subject to regular use for rough grazing up until about 20 years ago. Cattle were the principal stock used, and the grazing was largely confined to peripheral secondary bog where drainage had encouraged a prevalence of *Molinia*. Grazing was often accompanied by burning of *Molinia* thatch and litter in order to produce a spring bite, prevent scrub invasion, and reduce cover for foxes. Burning of peripheral areas appears to have been a more or less annual practice in the early 1900's and continued up until 1986. Frequently, as in 1986 burning of the modified bog fields resulted in flames spreading across the central dome, often affecting large areas of the primary mire.

Nature Reserve establishment.

The acquisition of various parcels of the bog as a National Nature Reserve (NNR) commenced in 1967, but it was 1981 before this encompassed the whole of the primary bog dome. Further areas of the modified bog margins have subsequently been acquired and added to the Reserve.

Current management

Ditch blocking

All of the major internal ditches within the NNR associated with past drainage reclamation and peat cutting have now been blocked, this work being centred on the northern and north-western sections of the site where the problem was greatest. There is an on-going project to block all of the smaller drainage ditches and peat cuttings across the NNR.

Bunding

A peat bund 1200 m long was constructed in 1992/3 along a part of the southern periphery of the site, to reduce water loss into the Pwll Du ditch. This is viewed as a short-term measure and no further bunding is planned pending further assessment of this and other possible re-wetting strategies.

Scrub clearance

A programme of willow and birch scrub removal and control is in progress and will need to be continued until such a time as further invasion is prevented by the restoration of conditions favouring raised mire vegetation. Attempts to eradicate *Rhododendron* from degenerate parts of the mire have so far met with limited success and will need to be pursued for a considerable time yet.

Grazing & mowing

Grazing with native Welsh Mountain ponies and mowing are being employed on some peripheral bog areas modified by past drainage and agricultural use, in order to reduce the dominance of purple moor grass and encourage re-colonisation of characteristic bog species.

2.4 Management Units

The plan area has been divided into management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based mainly on tenure, but also with reference to conservation features and land management requirements.

The following table confirms the relationships between the management units and the designations covered:

Unit Number	Ramsar	SAC	NNR	CCW owned	SSSI	Common land	Private land
1 Primary bog	✓	✓	✓	✓	✓		
2 Western & southern bog	✓	✓	✓	✓	✓		
3 Pant-y-dwn		✓	✓	✓	✓		
4 Gors Wen		✓	✓	✓	✓		
5 Gwynfryn wood		✓	✓	✓	✓		
6 Gwynfryn bog		✓	✓	✓	✓		
7. Llain barial	✓	✓	✓	✓	✓		
8. Llancynfelin - Taliesin Common	✓	✓			✓	✓	
9. Genau'r glyn Common	✓	✓			✓	✓	
10 Lerry fields	✓	✓			✓		✓
11. Ynyscapel fields	✓	✓			✓		✓

3. THE SPECIAL FEATURES

3.1 Confirmation of Special Features

<i>Designated feature</i>	<i>Relationships, nomenclature etc</i>	<i>Conservation Objective in part 4</i>
<i>SAC features</i>		
<i>Annex 1 habitats that are a primary reason for selection of this site</i> 1. Active raised bogs (EU Habitat Code: 7110) * priority feature		1
2. Degraded raised bogs still capable of natural regeneration (EU Habitat Code: 7120)		2
<i>Annex 1 habitats present as a qualifying feature, but not a primary reason for selection of this site</i> 3. Depressions on peat substrates of the <i>Rhynchosporion</i> (EU Habitat Code: 7150)	This habitat is an intimately related part of 'active raised bogs' and will be addressed as part of that feature in the conservation objectives.	1
<i>SPA features</i>		
Not applicable		
<i>Ramsar features</i>		
4. Estuarine raised bog	This feature equates to a combination of the 3 Annex 1 SAC features	1 & 2
<i>SSSI features</i>		
5. Raised bog – ombrogenous	This feature equates to a combination of the 3 Annex 1 SAC features. It includes areas mapped as raised bog and swamp vegetation in the phase I habitat survey.	1 & 2
6. <i>Tringa tetanus</i> Redshank	The site supports a proportion (<10%) of the Dyfi SSSI breeding population (the largest breeding concentration in Wales).	
7. <i>Numenius arquata</i> Curlew	The site supports the entire Dyfi SSSI breeding population	
8. <i>Gallinago gallinago</i> Common snipe	The site supports a proportion (c20%) of the Dyfi SSSI breeding population.	
9. <i>Lutra lutra</i> Otter	Strong resident population.	
10. <i>Coenophila subrosea</i> Rosy marsh moth	RDB3. Largest population of few (c6) in UK.	
11. <i>Coenonympha tullia</i> Large heath butterfly	Schedule 5 species. Strong population.	
12. <i>Metrioptera bracyptera</i> Bog bush-cricket	Strong population at one of few sites in Wales.	
13. <i>Heliophanus dampfi</i> – a jumping	RDB. Only known site in Wales &	

spider	England	
14. Assemblage of RDB and/or Nationally scarce and/or Atlantic-Western British bryophytes	Includes 3 nationally scarce bog mosses <i>Sphagnum pulchrum</i> , <i>S.fuscum</i> and <i>S. austinii</i> ; and the nationally scarce liverwort <i>Pallavicinia lyelli</i>	
15. Assemblage of RDB and/or Nationally scarce vascular plants	Includes nationally scarce <i>Rhynchospora fusca</i> at one of few Wales locations.	
16. Breeding bird assemblage of lowland open waters and their margins	Part of Dyfi SSSI assemblage	
17. Reptile assemblage	Part of Dyfi SSSI assemblage	
18. Peatland invertebrate assemblage	Includes a range of RDB, nationally and locally scarce species additional to those which qualify individually.	
19. Quaternary geology of Wales	Nationally important peat archive	

3.2 Special Features and Management Units

This section sets out the relationship between the special features and each management unit. This is intended to provide a clear statement about what each unit should be managed for, taking into account the varied needs of the different special features. All special features are allocated to one of seven classes in each management unit. These classes are:

Key Features

KH - a 'Key Habitat' in the management unit, i.e. the habitat that is the main driver of management and focus of monitoring effort, perhaps because of the dependence of a key species (see KS below). There will usually only be one Key Habitat in a unit but there can be more, especially with large units.

KS – a 'Key Species' in the management unit, often driving both the selection and management of a Key Habitat.

Geo – an earth science feature that is the main driver of management and focus of monitoring effort in a unit.

Other Features

Sym - habitats, species and earth science features that are of importance in a unit but are not the main drivers of management or focus of monitoring. These features will benefit from management for the key feature(s) identified in the unit. These may be classed as 'Sym' features because:

- a) they are present in the unit but may be of less conservation importance than the key feature; and/or
- b) they are present in the unit but in small areas/numbers, with the bulk of the feature in other units of the site; and/or
- c) their requirements are broader than and compatible with the management needs of the key feature(s), e.g. a mobile species that uses large parts of the site and surrounding areas.

Nm - an infrequently used category where features are at risk of decline within a unit as a result of meeting the management needs of the key feature(s), i.e. under Negative Management. These cases will usually be compensated for by management elsewhere in the plan, and can be used where minor occurrences of a feature would otherwise lead to apparent conflict with another key feature in a unit.

Mn - Management units that are essential for the management of features elsewhere on a site e.g. livestock over-wintering area included within designation boundaries, buffer zones around water bodies, etc.

x – Features not known to be present in the management unit.

The table below sets out the relationship between the special features and management units identified in this plan:

Cors Fochno SAC	Management unit								
	1	2	3	4	5	6	7	8	9
SAC	✓	✓	✓	✓	✓	✓	✓	✓	✓
SSSI	✓	✓	✓	✓	✓	✓	✓	✓	✓
NNR/CCW owned	✓	✓	✓	✓	✓	✓	✓	✓	
SAC features									
1. Active raised bogs	KH	Sym	Sym	Sym	x	Sym	Sym	Sym	Sym
2. Degraded raised bogs still capable of natural regeneration	x	KH	KH	KH	x	KH	KH	KH	KH
3. Depressions on peat substrates of the <i>Rhynchosporion</i>	KH	x	x	x	x	x	x	x	x
Ramsar features									
4. Estuarine raised mire	Sym	Sym	x	x	x	x	x	Sym	Sym
SSSI features									
5. Raised bog – ombrogenous	Sym	Sym	Sym	Sym	x	Sym	Sym	Sym	Sym
6. Redshank <i>Tringa tetanus</i>	Sym	Sym	Sym	x	x	x	x	x	x
7. Curlew <i>Numenius arquata</i>	Sym	Sym	Sym	Sym	x	x	x	Sym	Sym
8. Common snipe <i>Gallinago gallinago</i>	X	Sym	Sym	Sym	x	x	x	x	x
9. Otter <i>Lutra lutra</i>	Sym	Sym	Sym	Sym	x	Sym	Sym	Sym	x
10. Rosy marsh moth <i>Coenophila subrosea</i>	Sym	x	x	x	x	x	x	x	x
11. Large heath butterfly <i>Coenonympha tullia</i>	Sym	Sym	Sym	Sym	x	Sym	Sym	Sym	Sym
12. Bog bush-cricket <i>Metrioptera bracyptera</i>	Sym	Sym	Sym	Sym	x	Sym	Sym	Sym	x
13. <i>Heliophanus dampfi</i>	Sym	x	x	x	x	x	x	x	x
14. Assemblage of RDB and/or Nationally scarce bryophytes	Sym	Sym	x	x	x	x	x	Sym	Sym
15. Assemblage of RDB and/or Nationally scarce vascular plants	x	Sym	Sym	x	x	x	x	Sym	x
16. Breeding bird assemblage of lowland open waters and their margins	Sym	Sym	Sym	Sym	x	x	x	Sym	Sym
17. Reptile assemblage	Sym	Sym	Sym	Sym	x	Sym	Sym	Sym	Sym
18. Peatland invertebrate assemblage	Sym	Sym	Sym	Sym	x	Sym	Sym	Sym	x
19. Quaternary geology of Wales	Sym	Sym	Sym	Sym	x	Sym	Sym	Sym	Sym

Cors Fochno SAC	Management unit		
	10	11	
SAC	✓	✓	
SSSI	✓	✓	
NNR/CCW owned			
SAC features			
1. Active raised bogs	x	x	
2. Degraded raised bogs still capable of natural regeneration	KH	KH	
3. Depressions on peat substrates of the <i>Rhynchosporion</i>	x	x	
Ramsar features			
4. Estuarine raised mire			
SSSI features			
5. Raised bog – ombrogenous	Sym	Sym	
6. Redshank <i>Tringa tetanus</i>	x	x	
7. Curlew <i>Numenius arquata</i>	x	Sym	
8. Common snipe <i>Gallinago gallinago</i>	x	x	
9. Otter <i>Lutra lutra</i>	x	Sym	
10. Rosy marsh moth <i>Coenophila subrosea</i>	x	x	
11. Large heath butterfly <i>Coenonympha tullia</i>	x	x	
12. Bog bush-cricket <i>Metrioptera brachyptera</i>	x	x	
13. <i>Heliophanus dampfi</i>	x	x	
14. Assemblage of RDB and/or Nationally scarce bryophytes	x	x	
15. Assemblage of RDB and/or Nationally scarce vascular plants	x	x	
16. Breeding bird assemblage of lowland open waters and their margins	x	x	
17. Reptile assemblage	x	x	
18. Peatland invertebrate assemblage	x	x	
19. Quaternary geology of Wales	Sym	Sym	

4. CONSERVATION OBJECTIVES

Background to Conservation Objectives:

a. Outline of the legal context and purpose of conservation objectives.

Conservation objectives are required by the 1992 'Habitats' Directive (92/43/EEC). The aim of the Habitats Directives is the maintenance, or where appropriate the restoration of the 'favourable conservation status' of habitats and species features for which SACs and SPAs are designated (see Box 1).

In the broadest terms, 'favourable conservation status' means a feature is in satisfactory condition and all the things needed to keep it that way are in place for the foreseeable future. CCW considers that the concept of favourable conservation status provides a practical and legally robust basis for conservation objectives for Natura 2000 and Ramsar sites.

Box 1

Favourable conservation status as defined in Articles 1(e) and 1(i) of the Habitats Directive

“The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The conservation status of a species is the sum of the influences acting on the species that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' when:

- population dynamics data on the species indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.”

Achieving these objectives requires appropriate management and the control of factors that may cause deterioration of habitats or significant disturbance to species.

As well as the overall function of communication, Conservation objectives have a number of specific roles:

- Conservation planning and management.

The conservation objectives guide management of sites, to maintain or restore the habitats and species in favourable condition.

- Assessing plans and projects.

Article 6(3) of the ‘Habitats’ Directive requires appropriate assessment of proposed plans and projects against a site's conservation objectives. Subject to certain exceptions, plans or projects may not proceed unless it is established that they will not adversely affect the integrity of sites. This role for testing plans and projects also applies to the review of existing decisions and consents.

- Monitoring and reporting.

The conservation objectives provide the basis for assessing the condition of a feature and the status of factors that affect it. CCW uses ‘performance indicators’ within the conservation objectives, as the basis for monitoring and reporting. Performance indicators are selected to provide useful information about the condition of a feature and the factors that affect it.

The conservation objectives in this document reflect CCW’s current information and understanding of the site and its features and their importance in an international context. The conservation objectives are subject to review by CCW in light of new knowledge.

b. Format of the conservation objectives

There is one conservation objective for each feature listed in part 3. Each conservation objective is a composite statement representing a site-specific description of what is considered to be the favourable conservation status of the feature. These statements apply to a whole feature as it occurs within the whole plan area, although section 3.2 sets out their relevance to individual management units.

Each conservation objective consists of the following two elements:

1. Vision for the feature
2. Performance indicators

As a result of the general practice developed and agreed within the UK Conservation Agencies, conservation objectives include performance indicators, the selection of which should be informed by JNCC guidance on Common Standards Monitoring¹.

There is a critical need for clarity over the role of performance indicators within the conservation objectives. **A conservation objective, because it includes the vision for the feature, has meaning and substance independently of the performance indicators, and is more than the sum of the performance indicators.** The performance indicators are simply what make the conservation objectives measurable, and are thus part of, not a substitute for, the conservation objectives. Any feature attribute identified in the performance indicators should be represented in the vision for the feature, but not all elements of the vision for the feature will necessarily have corresponding performance indicators.

As well as describing the aspirations for the condition of the feature, the Vision section of each conservation objective contains a statement that the factors necessary to maintain those desired conditions are under control. Subject to technical, practical and resource constraints, factors which have an important influence on the condition of the feature are identified in the performance indicators.

¹ Web link: <http://www.jncc.gov.uk/page-2199>

4.1 Conservation Objective for Feature 1:

Active raised bogs (EU Habitat Code: 7110), incorporating Feature 3 (Depressions on peat substrates of the *Rhynchosporion*)

Vision for feature 1 (and 3)

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- NVC type M18 *Sphagnum papillosum*-*Erica tetralix* raised mire and M2 *Sphagnum cuspidatum* bog pool communities will occupy > 95% of the ‘primary’ (ie uncut) bog area.
- The cover level of characteristic bog mosses (*Sphagnum* species) will be sufficiently high (>25%) to indicate healthy peat growth.
- ‘Hummock and hollow’ patterning will be present across the centre of the bog dome.
- The hollows (ie. *Rhynchosporion* depressions) will usually have greater sundew *Drosera anglica* present and will be increasing or maintaining their extent.
- The following species will be common in the active raised bog: *Sphagnum capillifolium*, *S. papillosum* and *S. magellanicum*, bog rosemary *Andromeda polifolia* and white-beak sedge *Rhynchospora alba*.
- The rare hummock forming bog mosses *Sphagnum austinii* and *S. fuscum* will be have stable or increasing populations.
- Purple moor grass *Molinia caerulea* will be largely absent from the active raised mire
- Scrub species such as willow *Salix* and birch *Betula* will also be largely absent.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for Feature 1

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

<i>Performance indicators for feature condition</i>		
<i>Attribute</i>	<i>Attribute rationale and other comments</i>	<i>Specified limits</i>
A1. Extent of active raised bog	The lower limit is the extent mapped in 2003	<i>Upper limit:</i> 100% of primary bog surface <i>Lower limit:</i> 166 ha
A2. Condition of active raised bog	A low cover of sphagnum is indicative of degradation including loss of peat forming capacity. Characteristic raised bog sphagna indicating rainfall as the prime source of waterlogging are: <i>Sphagnum cuspidatum</i> , <i>S. pulchrum</i> <i>S. tenellum</i> , <i>S. capillifolium</i> , <i>S. papillosum</i> <i>S. magellanicum</i> , <i>S. subnitens</i> , <i>S. austinii</i> and <i>S. fuscum</i> . Hummock sphagna: <i>S. capillifolium</i> , <i>S. papillosum</i> , <i>S. magellanicum</i> , <i>S. austinii</i> and <i>S. fuscum</i> are important peat builders and good indicators of high quality raised bog. Encroachment of <i>Molinia</i> indicates loss of quality (often due to aerial pollution, drainage, fire or a combination of these.	<i>Upper limit:</i> Not required <i>Lower limit:</i> >50% of sample points in ‘active raised bog’ monitoring plots 3,4,& 7 (established 2003) have: i) 25% or more ground cover of characteristic raised bog <i>Sphagnum</i> species; ii) Presence of one or more hummock-forming <i>Sphagnum</i> species per sample plot; iii) <i>Molinia caerulea</i> is absent <u>And:</u> iv) The <i>Rhynchosporion</i>

	The monitoring plots established in 2003 are considered to give a fair reflection of the overall habitat condition.	depressions on peat substrates of the (see A3.) are above the lower limit for extent/ condition.
Performance indicators for feature condition (cont.d)		
Attribute	Attribute rationale and other comments	Specified limits
A3. Extent and condition of Depressions on peat substrates of the <i>Rhynchosporion</i>	<p>'<i>Rhynchosporion</i>' vegetation is defined as: permanently wet topographic hollows/ depressions in which,</p> <p>a) <i>Sphagnum cuspidatum</i> and/or <i>S. pulchrum</i> form >20% cover;</p> <p>b) <i>Rhynchospora alba</i> is abundant or <i>Drosera anglica</i> is present; and,</p> <p>c) <i>Molinia caerulea</i> and <i>Trichophorum cespitosum</i> are absent</p>	<p><i>Upper limit</i> none set</p> <p><i>Lower limit</i> > 15% sample points in Plots 1,2,5 & 6 are referable to '<i>Rhynchosporion</i> pool' vegetation</p>
Performance indicators for factors affecting the feature		
Factor	Factor rationale and other comments	Operational Limits
F1. Hydrology – water table	Hydrology is probably the single most important condition influencing peatland ecology, development, functions and processes. (Rydin & Jeglum 2006). The water table within active raised bogs normally lies within the range 0-15cm below mean surface level and falls to 30cm or more are rare. Drainage around and internal to the bog is a key determinant of water table residence time within the optimal range.	<p><i>Upper limit:</i> mean bog surface level (at established central dome sample site).</p> <p><i>Lower limit:</i> 90% residence within 30cm of mean surface (at established central dome sample site).</p>
F2. Water chemistry	<p>Raised bogs depend solely on atmospheric deposition to maintain waterlogging, and flooding with sea water (or groundwater) has the potential to destroy the site conservation features.</p> <p>Although gradations from raised bog to saline marsh are a natural feature on the margins of Cors Fochno, past management has exposed a greater part of the site to potential sea-water flooding.</p> <p>A regional flood / drainage management policy which redresses the balance in favour of raised bog development is vital.</p>	<i>Upper limit:</i> surface water chemistry to be free of saline influence across the entire primary bog dome.
F3. Atmospheric deposition of nitrogen (N)	<p>Raised bogs are highly sensitive to pollution from chemical nutrients, notably N and P., which may be deposited as dust or as solutes in rainfall.</p> <p>Inorganic nitrogen derived from agricultural activities and fossil fuel combustion are implicated in the degradation of raised mire mires in Wales, causing increases in Purple moor-grass (<i>Molinia</i>) and birch and a decline in <i>Sphagnum</i> cover (Hughes et al. 2007). Cors Fochno (unlike many other UK raised bogs), has inorganic N loadings below the estimated upper critical threshold of 10kg/ha/yr, (estimated at 8.7kg in 2006 – see APIS database) and this must continue for vegetation condition to be favourable.</p>	<i>Upper limit:</i> 9kg/ha/yr inorganic Nitrogen
F4. Fire	Drainage of raised bogs or their margins makes them highly vulnerable to fire, particularly during drought conditions. Fire is potentially devastating for raised bogs. It destroys the vegetation cover and the microtopography, adversely affecting hydrology, the	Fire will be prevented as far as possible.

	carbon balance, and the peat archive as well as the flora and fauna. Recovery can take several decades and sensitive species may be eliminated.	
Performance indicators for factors affecting the feature (cont.d)		
Factor	Factor rationale and other comments	Operational Limits
F5. Scrub	Scrub or tree species such as birch and willow are not natural components of the active raised bog vegetation at this site (except in the marginal 'lagg' zone), and their presence is indicative of drainage modification. Scrub/ trees affect the nutrient balance, hydrology and ecology of the bog, and without control their impact will intensify and spread to the detriment of the natural raised bog community.	<i>Upper limit:</i> Extent of scrub/ woodland mapped in 2003
F6. Livestock Grazing	Active raised mire vegetation is a natural climax community. Grazing is unnecessary for its maintenance, and would be damaging.	<i>Upper limit:</i> No livestock grazing on active raised bog

4.2 Conservation Objective for Feature 2: Degraded raised bogs still capable of natural regeneration (EU Habitat Code: 7120)

Vision for feature 2

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- 80% of the degraded raised bog resource is restored to active raised bog, with the remainder, being hydrologically compatible with active bog.
- Vegetation corresponding to National Vegetation Classification raised mire communities types M2 and/or M18 will be stable or increasing in extent relative to that mapped in 2003.
- Areas/ stands of M18 vegetation will have a 20% or more cover of bog moss, and tree species and rhododendron will be rare or absent.
- Other non-woodland semi-natural vegetation communities, including poor fen, brackish fen and swamp will have tree species not exceeding their extent in 2003.
- Characteristic plant species of the mire margins and transitions, including alder buckthorn, black bog rush, brown beak-sedge, greater tussock sedge, lesser butterfly orchid, marsh cinquefoil, royal fern and veilwort will have stable or increasing populations.
- Species intolerant of impeded drainage such as bracken and most grass species will be absent or rare throughout the site, together with alien invasive species such as rhododendron.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for Feature 2

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators.

Performance indicators for feature condition		
Attribute	Attribute rationale and other comments	Specified limits
A1. Extent of degraded bog with M18/M2 raised bog vegetation	It is highly desirable that all degraded bog capable of once more sustaining M18/M2 raised bog vegetation should be enabled to do so.	<i>Upper limit:</i> No limit set <i>Lower limit:</i> Extent of degraded bog mapped in 2003.

Performance indicators for feature condition (cont.d)		
Attribute	Attribute rationale and other comments	Specified limits
A2. Condition of degraded bog with M18/M2 raised bog vegetation	Condition sought is as for 'active raised bog', but limits allow for greater variation in vegetation quality.	In plots 1,2,3 and 4 (established in 2003) > 50% of sampling points have: i) 20% or more ground cover of characteristic raised bog <i>Sphagnum</i> species; ii) All tree species and <i>Molinia caerulea</i> are absent
Performance indicators for factors affecting the feature		
Factor	Factor rationale and other comments	Operational Limits
F1. Hydrology - drainage	See F1 in section 4.1 above. JNCC Report No. 365, 2005. 'Characterisation of Hydrological Protection Zones at the Margins of Designated Lowland Raised Bog Sites', is relevant here. Site specific research on this issue is in progress.	<i>Upper limit:</i> N/A <i>Lower limit:</i> limits to be determined.
F2. Hydrology – water table	See F1 in section 4.1 above	<i>Lower limits:</i> Minimum values for representative locations in degraded bog locations to be determined.
F3. Water chemistry	See F2 in section 4.1 above	<i>Upper limit:</i> saline influence restricted to areas of historic tidal flooding, as indicated by the presence of saltmarsh rush <i>Juncus maritimus</i> .
F4. Livestock grazing	Grazing of degraded bog areas with dominant or abundant <i>Molinia</i> grass is required to prevent rank growth, to deter scrub invasion and to enable bog moss re-establishment or expansion. Grazing also reduces the fire hazard of rank growth, and benefits wide a range of species feature components. Livestock grazing is not practical or necessary on all areas of degraded bog, but where it is light grazing by suitable breeds of cattle or ponies is required between May-November.	<i>Upper limit:</i> The <i>Molinia</i> mire areas will be lightly summer grazed by Welsh mountain ponies and/ or suitable cattle (eg Highlands), annually. Light summer grazing is defined as - cattle and/or ponies at a rate of 0.4 SU/Ha/year for the period May-October.
F5. Fire	See comment under Feature 1.	Fire will be prevented as far as possible.
F6. Scrub	See comment under Feature 1.	<i>Upper limit:</i> Extent of scrub/ woodland mapped in 2003.

5. ASSESSMENT OF CONSERVATION STATUS AND MANAGEMENT REQUIREMENTS

This part of the document provides:

- A summary of the assessment of the conservation status of each feature.
- A summary of the management issues that need to be addressed to maintain or restore each feature.

5.1 Conservation Status and Management Requirements of Feature 1: Active raised bogs (EU Habitat Code: 7110)

Conservation Status of Feature 1

The condition of the ‘active raised bog’ feature was assessed as **unfavourable** in September 2003 (CCW Contract Report No.: FC 73-05-35 Crowther K. & Groome G. 2004. Monitoring of Raised Mire Vegetation at Cors Fochno cSAC). The status in 2003 was judged as **recovering**, based on the fact that the feature was severely impacted by fire in 1985, and was clearly now in better condition. However, this assessment failed to consider that the management necessary to control the key factor (i.e. the hydrology), had only partially been addressed, and therefore current condition was amended to **unfavourable: no change** in the previous version of this plan.

For the latest monitoring round (2007-2012) data was collected in September 2008 and October-November 2009, and the ‘active raised bog’ feature was assessed as **unfavourable** one of three plots failed mainly due to lack of sphagnum cover.

Management Requirements of Feature 1

The principal requirement of management is to maximise the capacity of the primary bog to retain rainfall above the permanently waterlogged zone, i.e. within the surface peat-forming layer (the acrotelm), and counter any accelerated rate of drainage resulting from human actions.

This could arise from damage to the vegetation e.g. by fire or trampling as well as by drainage within and peripheral to the primary bog. Since the drainage issues which affect the degraded raised bog also impact on the quality of the central ‘active bog’ the requirements set out under that feature apply here also. Significant advances have been made in implementing the necessary hydrological restoration on and around the primary bog, but further improvements to water retention are still required including securing more favourable management of the peripheral drainage – see below.

5.2 Conservation Status and Management Requirements of Feature 2: Degraded raised bogs still capable of natural regeneration (EU Habitat Code: 7120).

Conservation Status of Feature 2

The condition of the ‘degraded raised bog’ feature was assessed at the same time as the ‘active raised bog’ in September 2003, (CCW Contract Report No.: FC 73-05-35). In 2003, all four monitoring plots in the degraded raised bog failed to meet the performance indicators, and was therefore reported as **unfavourable**. As in the case of the ‘active raised bog’ feature the ‘degraded raised bogs’ feature condition assessment was amended from **unfavourable recovering** to **unfavourable: no change** in the last version of this plan).

The latest monitoring round data was collected in September 2008 and November-December 2009. The feature condition was assessed as **unfavourable** as three of four plots failed the assessment.

Management Requirements of Feature 2

There are two principal aspects of artificial drainage which need to be addressed: i) internal ditches and peat cuttings; and, ii) drainage on the site boundaries. In the case of i), work has been carried out since at least 1982 and annually since at least 1991. This was initially confined to damming large

drains and some bunding to counteract peat shrinkage near the bog margins. Currently, an extensive programme of damming old peat cuttings within the NNR is in progress and is improving the condition of a significant area of the feature. Completion of this work is expected to take a further 5-6 years. ii) JNCC Report no.365 'Characterisation of Hydrological Protection Zones at the Margins of Designated Lowland Raised Bog Sites' recommends restoration of near-surface water levels and shallow hydrological gradients at the site margins. of. The land drainage issue at Cors Fochno is complicated by the potential for sea-water flooding and the issue of sustainability of coastal defences in the face of climate change. To help address this issue expert-led site-specific research into the drainage impacts and management options at the site have been carried out. EA Wales and CCW are working together on advancing agreement with stakeholders as part of a Cors Fochno SAC Water Level Management Plan (WLMP) based on the research findings.

5.3 Conservation Status and Management Requirements of Feature 3: Depressions on peat substrates of the *Rhynchosporion* (EU Habitat Code: 7150)

Conservation Status of Feature 3

The condition assessment for this feature at December 2007, was **unfavourable: no change**. For the latest monitoring round (2007-2012) data was collected in September 2008 and October-November 2009, and the 'active raised bog' feature was assessed as **unfavourable**, as one of four plots failed mainly due to lack of pool *Sphagna*.

Management Requirements of Feature 3

As for Feature 1, see section 5.1.

6. ACTION PLAN: SUMMARY

This section takes the management requirements outlined in Section 5 a stage further, assessing the specific management actions required on each management unit. This information is a summary of that held in CCW's Actions Database for sites, and the database will be used by CCW and partner organisations to plan future work to meet the Wales Environment Strategy targets for sites.

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
1	000489	Primary bog	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, which are thus progressive both spatially and over time.</p> <p>Drainage, both within and surrounding the central dome of un-cut peat, therefore has the capacity to degrade the feature by causing peat shrinkage, increase in slope angle and increase in rainfall run-off. Old ditches cut into the central dome have been systematically blocked since 1990, and further work to block surrounding peat cuttings is in progress. This work is having positive effects but needs continuing to completion, and some on-going works will be necessary to maintain water retaining structures.</p> <p>A further drainage-related issue is the potential for catastrophic fire, which in the past spread from the degraded grass and scrub dominated bog margins. This has not occurred since 1985, but remains a possibility during drought periods.</p> <p>The raised mire ecosystem is generated by, and dependant upon waterlogging exclusively from rainfall. The mire vegetation is adapted to very low input of chemical nutrients and is highly sensitive to anthropogenic inputs from the atmosphere including agricultural sources of nitrogen. Due to its coastal location Cors Fochno may now be the only raised bog in Wales where atmospheric nitrogen levels are now low enough to allow characteristic bog-moss communities to thrive and predominate. Hughes, P.D.M et al (2007) 'The declining quality of late-Holocene ombrotrophic communities and the loss of <i>Sphagnum austinii</i> (Sull. ex Aust.) on raised bogs in Wales'. The Holocene 7: 613-625.</p>	Yes
2	000490	South and West bog	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>Alteration of the surface topography by peat extraction, and drainage associated with peat cutting or agricultural reclamation has caused varying degrees of degradation to the bog vegetation and hydrology.</p>	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
			<p>The blocking of ditches and peat cuttings is in progress. This work is having positive results but needs continuing to completion. Furthermore, research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage.</p> <p>A further important issue relates to the potential for uncontrolled tidal flooding of the outer, peripheral areas of the bog. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins. Additional drainage-related issues include the spread of invasive grasses and shrubs/trees and the increased potential for fire damage.</p> <p>A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	
3	000491	Pant-y-dwn bog	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>Alteration of the surface topography by peat extraction, and drainage associated with peat cutting or agricultural reclamation has caused varying degrees of degradation to the bog vegetation and hydrology.</p> <p>The blocking of ditches and peat cuttings is in progress. This work is having positive results but needs continuing to completion. Furthermore, Furthermore, research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage.</p> <p>A further important issue relates to the potential for uncontrolled tidal flooding of the outer, peripheral areas of the bog. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins. Additional drainage-related issues include the spread of invasive grasses and shrubs/trees and the increased potential for fire damage.</p> <p>A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
4	000492	Gors Wen	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>Alteration of the surface topography by peat extraction, and drainage associated with peat cutting or agricultural reclamation has caused varying degrees of degradation to the bog vegetation and hydrology.</p> <p>The blocking of ditches and. peat cuttings is in progress. This work is having positive results but needs continuing to completion. Furthermore, research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage.</p> <p>A further important issue relates to the potential for uncontrolled tidal flooding of the outer, peripheral areas of the bog. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins. Additional drainage-related issues include the spread of invasive grasses and shrubs/trees and the increased potential for fire damage.</p> <p>A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	Yes
5	000493	Coed Gwynfryn bach	No issues in this unit	No
6	000494	Gors Gwynfryn	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>Alteration of the surface topography by peat extraction, and drainage associated with peat cutting or agricultural reclamation has caused varying degrees of degradation to the bog vegetation and hydrology.</p> <p>The blocking of ditches and. peat cuttings is in progress. This work is having positive results but needs continuing to completion. Furthermore, research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage.</p> <p>A further important issue relates to the potential for</p>	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
			<p>uncontrolled tidal flooding of the outer, peripheral areas of the bog. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins. Additional drainage-related issues include the spread of invasive grasses and shrubs/trees and the increased potential for fire damage.</p> <p>A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	
7	000495	Llain barial	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>Alteration of the surface topography by peat extraction, and drainage associated with peat cutting or agricultural reclamation has caused varying degrees of degradation to the bog vegetation and hydrology.</p> <p>The blocking of ditches and peat cuttings is in progress. This work is having positive results but needs continuing to completion. Furthermore, research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage. A further important issue relates to the potential for uncontrolled tidal flooding of the outer, peripheral areas of the bog. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins.</p> <p>Additional drainage-related issues include the spread of invasive grasses and shrubs/trees and the increased potential for fire damage.</p> <p>A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	Yes
8	000496	Llancynfelyn Common	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the</p>	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
			<p>changes both spatially and over time.</p> <p>Alteration of the surface topography by peat extraction, and drainage associated with peat cutting or agricultural reclamation has caused varying degrees of degradation to the bog vegetation and hydrology.</p> <p>The blocking of ditches and peat cuttings is in progress. This work is having positive results but needs continuing to completion. Furthermore, research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage. A further important issue relates to the potential for uncontrolled tidal flooding of the outer, peripheral areas of the bog. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins.</p> <p>Additional drainage-related issues include the spread of invasive grasses and shrubs/trees and the increased potential for fire damage.</p> <p>A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	
9	000497	Gene'r'glyn common	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>Alteration of the surface topography by peat extraction, and drainage associated with peat cutting or agricultural reclamation has caused varying degrees of degradation to the bog vegetation and hydrology.</p> <p>The blocking of ditches and peat cuttings is in progress. This work is having positive results but needs continuing to completion. Furthermore, research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage. A further important issue relates to the potential for uncontrolled tidal flooding of the outer, peripheral areas of the bog. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins.</p> <p>Additional drainage-related issues include the spread of invasive grasses and shrubs/trees and the increased potential for fire damage.</p> <p>A programme of stakeholder engagement is required to share information from research</p>	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
			projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.	
11	000499	Ynyscapel	<p>This unit is now agriculturally improved farmland. Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>The current drainage prevents any rehabilitation of peat forming vegetation.</p> <p>Research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage. A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	Yes
10	002512	Lerry fields	<p>Hydrology, vegetation and condition of the peat substrate (including the environmental archive, and growth/ decay potential) are closely inter-related. Change in one parameter induces change in the other two, causing feedback which compounds the changes both spatially and over time.</p> <p>Deep drainage ditches have caused loss or degradation to bog vegetation over much of this unit and they currently prevent rehabilitation of peat forming raised bog vegetation.</p> <p>Research indicates a requirement to reduce the hydrological impacts on the bog of peripheral drainage. A further important issue relates to the potential for uncontrolled tidal flooding of the land, via the Afon Leri. The threat and severity are increasing due to climate change and continued shrinkage subsidence of the drained margins.</p> <p>A programme of stakeholder engagement is required to share information from research projects with stakeholders and to seek their input and active involvement in the next stage of investigating drainage issues and identifying an appropriate hydrological management regime.</p>	Yes

7. GLOSSARY

This glossary defines some of the terms used in this **Core Management Plan**. Some of the definitions are based on definitions contained in other documents, including legislation and other publications of CCW and the UK nature conservation agencies. None of these definitions is legally definitive.

Action	A recognisable and individually described act, undertaking or project of any kind, specified in section 6 of a Core Management Plan or Management Plan , as being required for the conservation management of a site.
Attribute	A quantifiable and monitorable characteristic of a feature that, in combination with other such attributes, describes its condition .
Common Standards Monitoring	A set of principles developed jointly by the UK conservation agencies to help ensure a consistent approach to monitoring and reporting on the features of sites designated for nature conservation, supported by guidance on identification of attributes and monitoring methodologies.
Condition	A description of the state of a feature in terms of qualities or attributes that are relevant in a nature conservation context. For example the condition of a habitat usually includes its extent and species composition and might also include aspects of its ecological functioning, spatial distribution and so on. The condition of a species population usually includes its total size and might also include its age structure, productivity, relationship to other populations and spatial distribution. Aspects of the habitat(s) on which a species population depends may also be considered as attributes of its condition.
Condition assessment	The process of characterising the condition of a feature with particular reference to whether the aspirations for its condition, as expressed in its conservation objective , are being met.
Condition categories	The condition of feature can be categorised, following condition assessment as one of the following ² : Favourable: maintained; Favourable: recovered; Favourable: un-classified Unfavourable: recovering; Unfavourable: no change; Unfavourable: declining; Unfavourable: un-classified Partially destroyed; Destroyed.
Conservation management	Acts or undertaking of all kinds, including but not necessarily limited to actions , taken with the aim of achieving the conservation objectives of a site. Conservation management includes the taking of statutory and non-statutory measures, it can include the acts of any

² See JNCC guidance on Common Standards Monitoring <http://www.jncc.gov.uk/page-2272>

party and it may take place outside site boundaries as well as within sites. Conservation management may also be embedded within other frameworks for land/sea management carried out for purposes other than achieving the conservation objectives.

Conservation objective The expression of the desired **conservation status** of a **feature**, expressed as a **vision for the feature** and a series of **performance indicators**. The conservation objective for a feature is thus a composite statement, and each feature has one conservation objective.

Conservation status A description of the state of a **feature** that comprises both its **condition** and the state of the **factors** affecting or likely to affect it. Conservation status is thus a characterisation of both the current state of a feature and its future prospects.

Conservation status assessment The process of characterising the **conservation status** of a **feature** with particular reference to whether the aspirations for it, as expressed in its **conservation objective**, are being met. The results of conservation status assessment can be summarised either as ‘favourable’ (i.e. conservation objectives are met) or unfavourable (i.e. conservation objectives are not met). However the value of conservation status assessment in terms of supporting decisions about **conservation management**, lies mainly in the details of the assessment of feature **condition**, **factors** and trend information derived from comparisons between current and previous conservation status assessments and condition assessments.

Core Management Plan A CCW document containing the conservation objectives for a site and a summary of other information contained in a full site **Management Plan**.

Factor Anything that has influenced, is influencing or may influence the **condition** of a **feature**. Factors can be natural processes, human activities or effects arising from natural process or human activities, They can be positive or negative in terms of their influence on features, and they can arise within a site or from outside the site. Physical, socio-economic or legal constraints on **conservation management** can also be considered as factors.

Favourable condition See **condition** and **condition assessment**

Favourable conservation status See **conservation status** and **conservation status assessment**.³

Feature **The species population, habitat type or other entity for which a site is designated. The ecological or geological interest which justifies the designation of a site and which is the focus of conservation management.**

Integrity See **site integrity**

Key Feature The habitat or species population within a **management unit** that is the primary focus of **conservation management** and **monitoring** in that unit.

³ A full definition of favourable conservation status is given in Section 4.

Management Plan	The full expression of a designated site's legal status, vision, features, conservation objectives, performance indicators and management requirements. A complete management plan may not reside in a single document, but may be contained in a number of documents (including in particular the Core Management Plan) and sets of electronically stored information.
Management Unit	An area within a site, defined according to one or more of a range of criteria, such as topography, location of features , tenure, patterns of land/sea use. The key characteristic of management units is to reflect the spatial scale at which conservation management and monitoring can be most effectively organised. They are used as the primary basis for differentiating priorities for conservation management and monitoring in different parts of a site, and for facilitating communication with those responsible for management of different parts of a site.
Monitoring	An intermittent (regular or irregular) series of observations in time, carried out to show the extent of compliance with a formulated standard or degree of deviation from an expected norm. In Common Standards Monitoring , the formulated standard is the quantified expression of favourable condition based on attributes .
Operational limits	The levels or values within which a factor is considered to be acceptable in terms of its influence on a feature . A factor may have both upper and lower operational limits, or only an upper limit or lower limit. For some factors an upper limit may be zero.
Performance indicators	The attributes and their associated specified limits , together with factors and their associated operational limits , which provide the standard against which information from monitoring and other sources is used to determine the degree to which the conservation objectives for a feature are being met. Performance indicators are part of, not the same as, conservation objectives. See also vision for the feature .
Plan or project	Project: Any form of construction work, installation, development or other intervention in the environment, the carrying out or continuance of which is subject to a decision by any public body or statutory undertaker. Plan: a document prepared or adopted by a public body or statutory undertaker, intended to influence decisions on the carrying out of projects . Decisions on plans and projects which affect Natura 2000 and Ramsar sites are subject to specific legal and policy procedures.
Site integrity	The coherence of a site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is designated.
Site Management Statement (SMS)	The document containing CCW's views about the management of a site issued as part of the legal notification of an SSSI under section 28(4) of the Wildlife and Countryside Act 1981, as substituted.
Special Feature	See feature .

Specified limit	The levels or values for an attribute which define the degree to which the attribute can fluctuate without creating cause for concern about the condition of the feature . The range within the limits corresponds to favourable, the range outside the limits corresponds to unfavourable. Attributes may have lower specified limits, upper specified limits, or both.
Unit	See management unit .
Vision for the feature	The expression, within a conservation objective , of the aspirations for the feature concerned. See also performance indicators .
Vision Statement	The statement conveying an impression of the whole site in the state that is intended to be the product of its conservation management . A 'pen portrait' outlining the conditions that should prevail when all the conservation objectives are met. A description of the site as it would be when all the features are in favourable condition .

8. REFERENCES

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