CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

CORE MANAGEMENT PLAN
INCLUDING CONSERVATION OBJECTIVES

FOR

PRESELI SAC
(SPECIAL AREA OF CONSERVATION)

Version: **9**

Date: **17 February 2011**

Approved by: **Charlotte Gjerlov**

A Welsh version of all or part of this document can be made available on request.

Cyngor Cefn Gwlad Cymru
Countryside Council for Wales

NATURA 2000

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Welsh Assembly Government
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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.

The commons that make up Preseli SAC should keep their diverse wildlife in the years to come. Changes in climate and changes in the way people use the land are perhaps inevitable, and the patterns of vegetation that we see on the commons today will also shift over time. Our vision, however, is for the more open mixtures of heath, fen and flush to persist. This means that development of scrub and woodland must be kept in check where it is sustainable to do this. If this mixture of wetland habitats can be conserved, then the marsh fritillary, southern damselfly and other characteristic species currently found here should continue to flourish.

2. SITE DESCRIPTION

2.1 Area and Designations Covered by this Plan

Grid references:	Preseli SAC: SN110320 Mynydd Preseli SSSI: SN110330 Waun Fawr SSSI: SN017307
Unitary authority:	Pembrokeshire Coast National Park
Area (hectares):	Preseli SAC: 2705.9 ha
Designations covered:	This plan covers Preseli Special Area of Conservation, which incorporates Mynydd Preseli SSSI and Waun Fawr SSSI

Detailed maps of the designated sites are available through CCW's web site:
http://www.ccw.gov.uk/interactive-maps/protected-areas-map.aspx

2.2 Outline Description

The extensive Mynydd Preseli SSSI and the smaller commons of Waun Fawr SSSI, Waun Isaf and Gors Fawr, underpin Preseli SAC. Mynydd Preseli and Gors Fawr are physically linked whilst Waun Isaf and Waun Fawr are separate detached components of the SAC. As well as the SAC features, the two SSSIs include a number of species and habitats SSSI features that do not qualify the site under the Habitats Directive.

2.3 Outline of Past and Current Management

The present day vegetation cover is the product of many centuries of management; the heaths and commons have been an essential part of the local farming economy for centuries. Historically these sites have been grazed by larger animals like cattle and horses. Their grazing habits have helped to maintain the open nature of the site and produced varied, species-rich swards. In more recent times, sheep grazing has continued but cattle and pony grazing has declined dramatically. Sheep grazing will keep most of the vegetation short, but some of the special wetland features suffer without the trampling effect of heavier animals. Sheep are traditionally taken off the hills in winter, to coastal pastures at Castlemartin. Heather can be vulnerable to over-grazing at this time of year, so this movement helps conserve the heath. It also helps to prevent peat erosion scars from developing. Hefting or

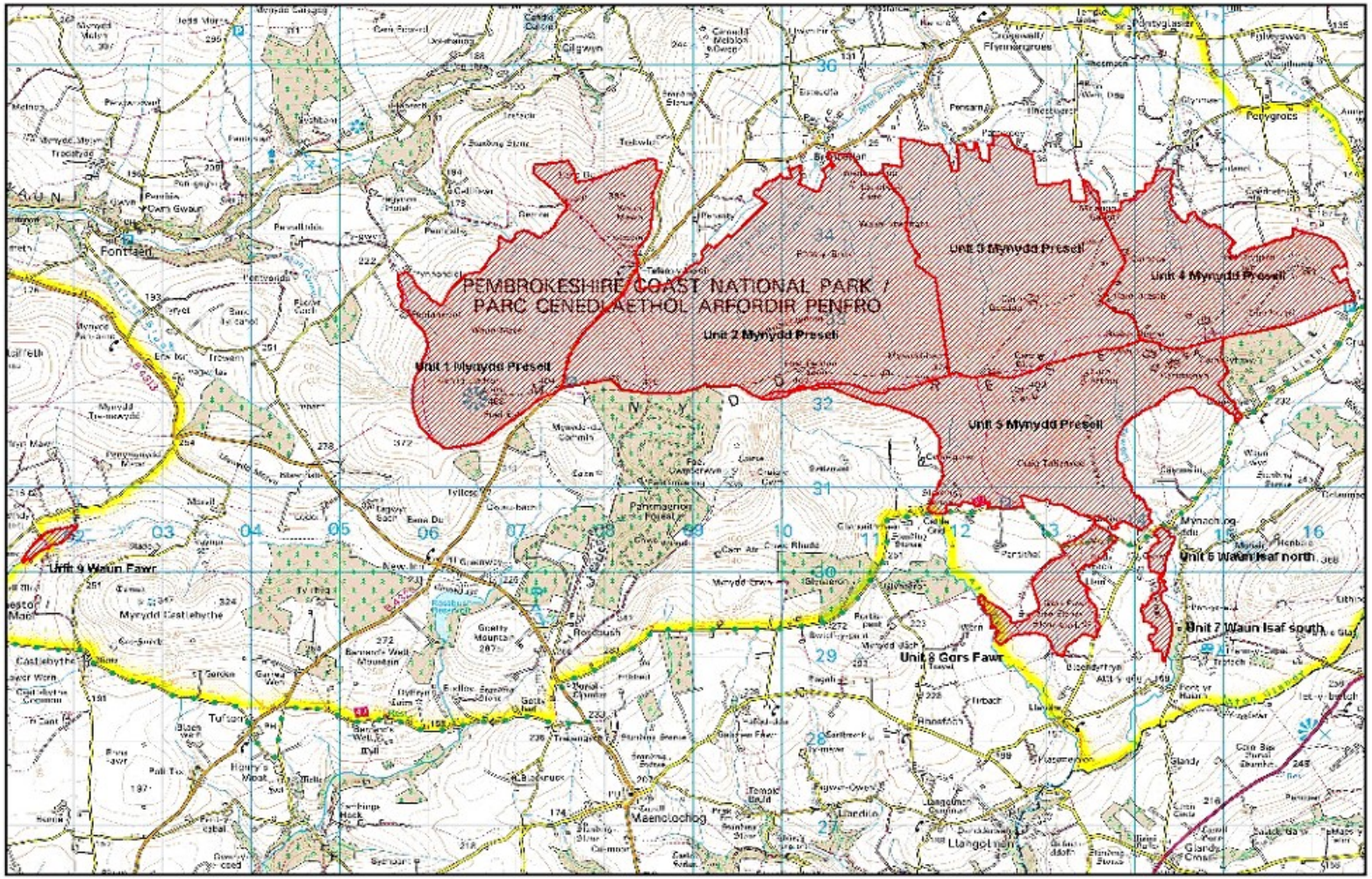
shepherding animals onto particular areas could become desirable if stock numbers are reduced.

Traditionally, much of Mynydd Preseli has been managed by burning during the winter, to keep the coarser plants like heather, gorse and bracken in check and provide better quality grazing. Current advice is that burning should be used carefully and sparingly, ideally through a rotation of small, managed burns.

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 of Mynydd Preseli have been based upon common land units and stream catchments; detached and almost detached land parcels have also been treated as separate units. A map showing the management units referred to in this plan is shown below:

Preseli SAC Management Units



Produced by CCW on: 15 October 2007

Scale 1:59823

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

Unit number	SAC	SSSI	Name	Common Land unit
Mynydd Preseli SSSI				
1	✔	✔	Mynydd Preseli	CL 19
2	✔	✔	Mynydd Preseli	CL 19
3	✔	✔	Mynydd Preseli	CL 19
4	✔	✔	Mynydd Preseli	CL 19
5	✔	✔	Mynydd Preseli	CL 42
6	✔	✔	Waun Isaf north	CL 43
7	✔	✔	Waun Isaf south	CL 43
8	✔	✔	Gors Fawr	CL 40
Waun Fawr SSSI				
9	✔	✔	Waun Fawr	CL 86

3. THE SPECIAL FEATURES

3.1 Confirmation of Special Features

Designated feature	***Relationships, nomenclature etc***	***Conservation Objective in part 4***
SAC features		
1.Southern Damselfly	*Coenagrion mercuriale*	1
2.Marsh Fritillary	*Eurodryas aurinia*	2
3.Slender Green Feather Moss	*Hamatocaulis vernicosus*	3
4.Alkaline Fen	NVC: M10	4
5.Depressions on peat substrates of the *Rhynchosporion*		5
6. European Dry Heaths	NVC: H8	6
7.Northern Atlantic wet heaths with *Erica tetralix*	NVC: M15, M16	7
SSSI features		
8. Marshy grassland	NVC: M23, M24, M25	8
9. Non SAC Fen	Fen types other than SAC feature 7230 Alkaline fens	9
10. Acid Grassland	NVC: U4, U5	10
11. Bog Orchid	*Hammarbya paludosa*	11
12. Flush	NVC: M6, M10, Neutral Flush	12
13. Marsh Clubmoss	*Lycopodiella inundata*	13
14. Pale butterwort	*Pinguicula lusitanica*	14
15.Rare mosses and lichens on rocky tors	Assemblage feature	15
16. Rare mosses on damp ground	Assemblage feature	16

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 focus of management and monitoring effort, perhaps because of the dependence of a key species (see KS below). There will rarely be more than one Key Habitat in a unit.

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 focus of management and 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 focus of management or 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 are 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 with no special feature present but which are of importance for 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

x – Features not present in the management unit.

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

Preseli SAC EU SAC code UK0012598	**Management unit**								
	Preseli SAC								
	1 Mynydd Preseli	**2 Mynydd Preseli**	**3 Mynydd Preseli**	**4 Mynydd Preseli**	**5 Mynydd Preseli**	**6 Waun Isaf North**	**7 Waun Isaf South**	**8 Gors Fawr**	**9 Waun Fawr SSSI**
SAC	✔	✔	✔	✔	✔	✔	✔	✔	✔
SSSI	✔	✔	✔	✔	✔	✔	✔	✔	✔
SAC features									
1. Southern damselfly *Coenagrion mercuriale*	KS	KS	KS	KS	KS	KS	x	KS	KS
2. Marsh fritillary *Eurodryas aurinia*	x	x	x	x	x	x	KS	x	Sym
3. Slender green feather moss *Hamatocaulis vernicosus*	Sym	Sym	Sym	Sym	Sym	x	x	x	Sym
4. Alkaline fen	Sym	Sym	Sym	Sym	Sym	x	x	x	x
5. Depressions on peat substrates of the *Rhynchosporion*	KH	KH	KH	KH	KH	x	x	x	x
6. European dry heaths	Sym	Sym	Sym	Sym	Sym	Sym	x	Sym	x
7. Northern Atlantic wet heaths with *Erica tetralix*	Sym	Sym	Sym	Sym	Sym	Sym	KH	Sym	Sym
SSSI features									
8. Marshy grassland	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym
9. Fen (non SAC)	Sym	*	*	*	*	*	*	*	*
10. Acid grassland	Sym	Sym	Sym	Sym	Sym	Sym	Sym	Sym	x
11. Bog orchid *Hammarbya paludosa*	Sym	Sym	Sym	Sym	Sym	x	x	x	x
12. Flush	Sym	Sym	Sym	Sym	Sym	KH	Sym	KH	KH
13. Marsh clubmoss *Lycopodiella inundata*	x	Sym	Sym	x	x	x	x	x	x
14. Pale butterwort *Pinguicula lusitanica*	x	x	Sym	x	x	x	x	x	Sym
15.Rare mosses and lichens on rocky tors	Sym	Sym	Sym	Sym	Sym	x	x	x	x
16. Rare mosses on damp ground	Sym	Sym	Sym	Sym	Sym	x	x	x	x

* To be completed following results of SAC contract survey report

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 Monitoring[1].

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] Available through www.jncc.gov.uk and follow links to Protected Sites and Common Standards Monitoring.

4.1 Conservation Objective for Feature 1: Southern Damselfly *Coenagrion mercuriale*

Vision for Southern Damselfly

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

- The density of adult males, during sampling, will be at least 1 male per 10 square metres of breeding habitat
- There will be at least 3500 square metres of breeding habitat
- All factors affecting the feature will be under control

Performance indicators for Southern Damselfly

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. Presence	Based on the monitoring in Skidmore (1996) and Boardman (2005).	*Upper limit*: N/A *Lower limit*: Species present in management units 1,2,3,4,5,6,8&9
A2. Population size - Density of adult males	Based on the CSM attribute for this feature	*Upper limit*: N/A *Lower limit*: 1 male per 10 square metres
A3. Extent of breeding habitat	Based on the Standard CSM attribute for this feature. Southern damselfly females lay their eggs into the tissue of emergent aquatic plants and in Wales the key species are *Menyanthes trifoliata* (bog-bean), *Hypericum elodes* (marsh St. John's wort), *Potamogeton polygonifolius* (bog pondweed) and *Apium nodiflorum* (fool's watercress). Breeding habitat will be mapped where patches of oviposition plants are present as more than 20% cover over areas greater than 0.5 square metres and no more than 20% of the total cover is greater than 15cm tall. A total of 4346.5 square metres of suitable breeding habitat was identified by Boardman at Preseli. The target set during monitoring was for 500 square metres of suitable habitat to be present. However, the present amounts of suitable habitat should not be allowed to decline to such a low level and therefore the current limit for the amount of suitable habitat is set at approximately 3500 square metres.	*Upper limit*: N/A *Lower limit*: approximately 3500 square metres of breeding habitat present occurring as small patches scattered throughout management units 1,2,3,4,5,6,8&9

Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The damselfly's flush/stream habitat has been maintained by traditional grazing practices. Shading of flushes and streams by tall plants reduces their suitability for the species. Successional processes in flushes reduce habitat availability. Trampling is often required to prevent small streams from disappearing below ground. Light grazing by animals - ideally sheep, cattle and ponies from April – November - is therefore essential for maintaining this feature	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: Flushes and streams should be kept open and some poaching at their margins encouraged
F2. Burning	Areas of the common have been burnt on an annual basis. These are usually carried out by the commoners to encourage fresh growth for stock, but occasionally may be accidental burns or arson attacks. Although focussed on the heath, burns have spread across the flushes. Burning can damage the bryophyte layer and encourages a vigorous re-growth of more competitive, fire-resistant species like purple moor-grass.	*Upper limit*: no areas of flush to be burnt. *Lower limit*: none set
F3. Water Quality	The flushes, springs and seepages which arise on Mynydd Preseli itself are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas will impact on flush vegetation.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4.2 Conservation Objective for Feature 2: Marsh Fritillary *Euphydryas aurinia*

Vision for marsh fritillary butterfly

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

A healthy population of the marsh fritillary butterfly will be present on and around the SAC. There will be sufficient suitable and good condition habitat to support viable meta-populations of the butterfly which is dependent here on marshy grassland and flush, with tussocks of purple moor-grass and plenty of the caterpillar's main food-plant, devil's bit scabious. The swards will vary in height so that there are short 'lawn' areas for the caterpillars to sun themselves on, and taller tussocky areas to provide shelter.

For each of the two Meta-populations present within the SAC

- There should be at least 200 larval webs per hectare of **Good Condition habitat**
- There should be at least 50ha of **Suitable habitat** on the SAC or within a 2km radius around it.
- At least 10ha of this suitable habitat should be **Good Condition habitat**
- All factors affecting the feature must be under control

Performance indicators for Marsh Fritillary

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. Population size - larval webs	In one year in 6 a total of 200 larval webs per hectare of Good Condition habitat occur are present. Based on SAC monitoring in 2006	*Upper limit*: N/A *Lower limit*: 200 larval webs per hectare of optimal breeding habitat
A2. Extent of breeding habitat	Based on 'Habitat quality mapping for marsh fritillary populations' Fowles (2005):	*Upper limit:* As limited by other feature habitats *Lower limit:* For each of the two meta-populations present within the SAC • There are at least 50ha of **Suitable habitat** on the site or within a 2km radius around it. • At least 10ha of the suitable habitat is **Good Condition habitat**.

Marsh Fritillary Habitat definitions (Fowles, 2005)		
Good Condition habitat	• Grassland where, for at least 80% of sampling points, the vegetation height is within the range of 10-25 cms • *Succisa pratensis* is present within a 1m radius. • Scrub (>0.5 metres tall) covers no more than 5% of area.	
Suitable habitat	• Grassland where *Succisa pratensis* is occasional, frequent or abundant • Vegetation height is above 25cms, or sward height is between 10-25 cms but scrub (>0.5 metres tall) covers more than 5% of area.	
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The marsh fritillary habitat has been maintained by traditional grazing practices. Without an appropriate grazing regime, the habitat would become rank and the larval foodplant would disappear. Light grazing by animals - ideally cattle from April – November and ponies throughout year - is essential for maintaining the sward stucture	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The site must be subject to sufficient grazing to maintain **Suitable habitat** or **Good Condition habitat** as set out above
F2. Burning	Marsh fritillary colonies are susceptible to damage by burning. The current lack of control over burning means key butterfly locations may be vulnerable.	*Upper limit*: No burning within key Marsh fritillary areas *Lower limit*: None set

Background

The marsh fritillary butterfly on Mynydd Preseli SAC is found on two widely separated areas of common land, Waun Fawr near Puncheston in the west and Waun Isaf near Mynachlog-ddu in the east. As this species is not only restricted to sites within the SAC boundaries it is not necessary to expect the SAC to hold the suggested minimum of 50 ha of suitable habitat (including 10 ha of Good Condition habitat) required for a meta-population to be considered to be in favourable condition. Suitable habitat may exist outside the SAC boundaries and, where this occurs within a 2 km radius of known marsh fritillary populations within the SAC, it should be taken into consideration when the extent of suitable habitat is being assessed. Waun Fawr and Waun Isaf are roughly 13km apart and there is little suitable habitat between them. It therefore seems likely that the two sites belong to different meta-populations: Waun Fawr to the 'Ambleston – Puncheston' meta-population, and Waun Isaf to the 'Mynachlog-ddu – Crymych' meta-population.

The 'Ambleston – Puncheston' meta-population

This meta-population comprises some 9 known sites, including Waun Fawr, which is an isolated and detached part of the Preseli SAC. This meta-population has been at a low ebb for the last decade - Waun Fawr itself had no records between 1995 – 2005, although it appears not to have had regular surveillance after being deemed unsuitable in 1996. The heavy grazing at this time was ideal for the southern damselfly *Coenagrion mercuriale*, but produced short lawns of purple moor grass pasture and flush unsuited to the butterfly. The cessation of regular grazing in 2005 quickly led to the development of a more tussocky vegetation structure with an abundance of leafy *Succisa pratensis*. Subsequently 40 larval webs were counted in September 2006. The cessation of grazing that initially led to an improvement in the site in terms of marsh fritillary habitat is now a cause for serious concern as the as the *Molinia* has grown tall and much of the habitat has become unsuitable.

No specific surveys of habitat suitability have been undertaken for this meta-population, but NVC survey (Bosanquet et al, 2000) gives an approximation of the area of suitable habitat available if figures for *Molinia* dominated habitats generally containing *Succisa* are totalled. For the 'Ambleston – Puncheston' meta-population, this suggests an area of around 60ha. If at least 10ha of this were in optimal condition, this should be sufficient habitat to support a viable population.

The 'Mynachlog-ddu – Crymych' meta-population

This meta-population comprises some 6 known sites most of which are in the Gweunydd Blaencleddau SAC. This is almost contiguous with Waun Isaf, a component part of the Preseli SAC. This meta-population appears to be reasonably healthy, with larval web counts in the low hundreds made on several occasions over the last decade. Waun Isaf itself made a significant contribution to these total counts up until 2000. Larval webs were recorded in each year between 1995 and 2000, with a peak of 142 in 1997. Between 2000 and 2005, however, the site was ungrazed and unsuitable for the butterfly. It may have persisted on adjoining privately owned land, but no records were made on the common. The re-introduction of grazing in 2005 began to reverse this neglect, and surveillance in 2006 revealed that the butterfly had returned, albeit in low numbers (2 adults on the common, 6 on adjoining land). Monitoring results suggest a larval web density in the region of 5-10 per hectare of suitable habitat, a long way short of the 200 per hectare required by the conservation objective.

There is a considerable hectarage of suitable habitat on Gweunydd Blaencleddau SAC, but this has yet to be mapped using the protocols given by Fowles (2005). Totalling the area of NVC communities containing frequent *Molinia* and *Succisa* produces a provisional estimate of at least 25ha. This indicates that the SAC may not contain the suggested minimum of 50 ha of suitable habitat (including 10ha of Good Condition habitat) that is needed to support a viable population into the long-term. However, the presence of further habitat within a 2km radius of the SAC (including the Waun Isaf section of Preseli SAC) may make this one of Wales' few potentially viable populations.

Current Condition

The extent and/or quality of habitat for both these meta-populations may reach the suggested minimum of 50 ha of suitable habitat (including 10 ha of Good Condition habitat) needed to support a viable population. Further habitat monitoring would be required before the condition of the Marsh Fritillary within Preseli SAC can be accurately assessed. However, due to low larval web densities in recent years, currently the indications are that the marsh fritillary condition is **Unfavourable: unclassified**.

4.3 Conservation Objective for Feature 3: Slender green feather-moss *Hamatocaulis vernicosus*

Vision for Slender Green Feather Moss

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

Slender green feather moss is a qualifying feature in the SAC, but has been found to be considerably more frequent and abundant both within Preseli SAC, and indeed in a number of other sites in Wales than was previously thought. In the light of this, it has been decided to treat the feature as part of the Rare mosses on damp ground SSSI feature.

Performance indicators for Slender Green Feather Moss

(See 4.16 below - performance indicator table for Rare mosses on damp ground)

4.4 Conservation Objective for Feature 4: Alkaline fens

Vision for Alkaline Fen

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

Alkaline fen will be present in patches across the site and display a range of plant and insect species typical of the habitat, including the southern damselfly. The flushes supporting this specific habitat will comprise short, open vegetation rich in small mosses, sedges and plants characteristic of less acidic conditions.

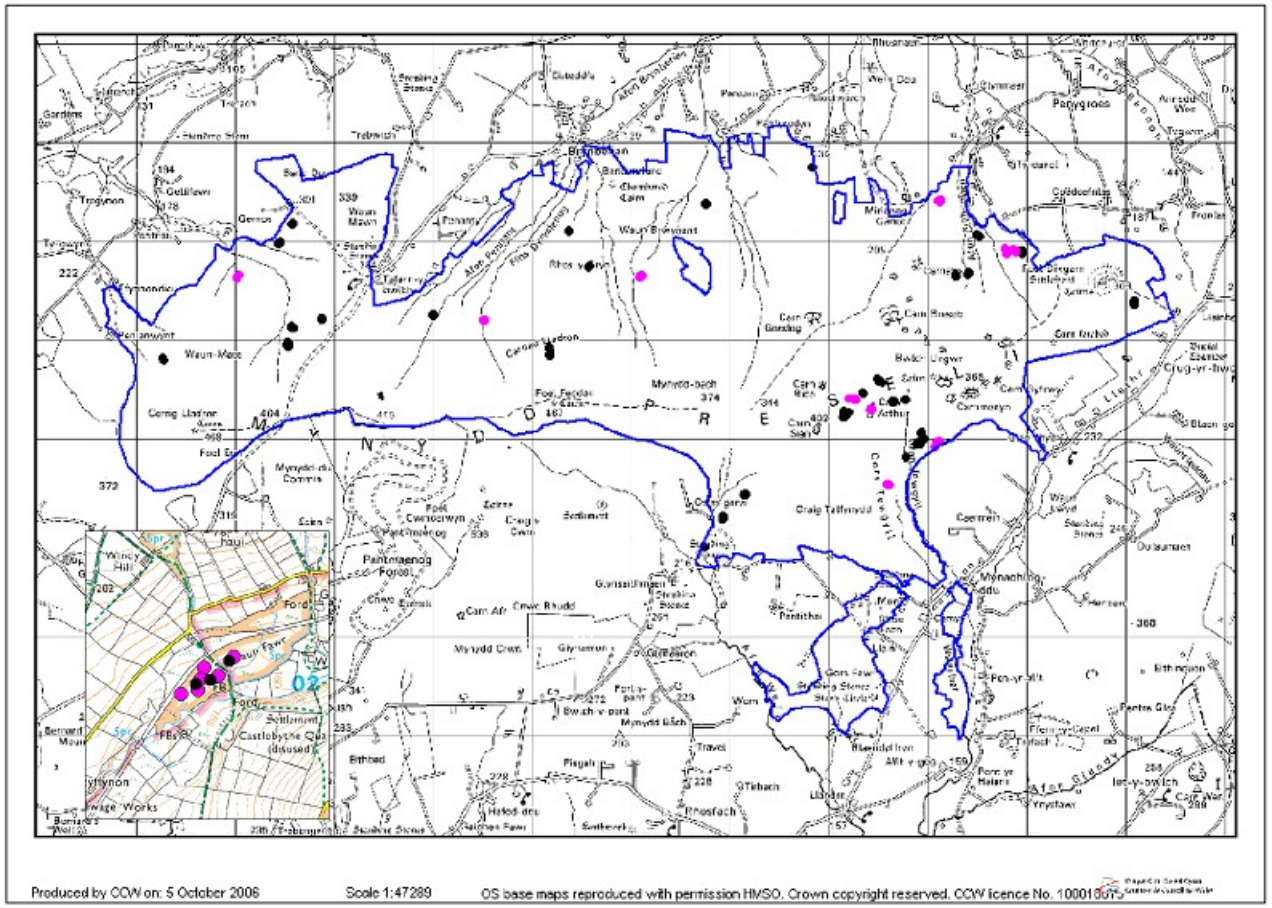
- Alkaline fens will be present in 8 out of the 10 **pink** areas as shown on the accompanying map. (See map below)
- Characteristic flush species such as *Menyanthes trifoliata, Triglochin palustre, Anagallis tenella, Pedicularis palustris* and *Pinguicula vulgaris* will be present
- Species indicative of negative change, such as *Juncus squarrosus*, will be absent.
- Scrub species such as willow *Salix* and birch *Betula* will also be largely absent.

Performance indicators for Alkaline fen

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 Alkaline fen	Attribute targets taken from SAC monitoring report.	*Upper limit* None set *Lower limit* An area covering at least 5 x 5 m or equivalent of alkaline fen continues to be present in 8 out of the 10 pink areas shown on the accompanying map.
A2 Quality of Alkaline fen	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit:* Not required *Lower limit*: 70% of the Alkaline fen vegetation is in good condition, characterised by vegetation where at each sample point: • Vegetation with at least 10% cover of **brown mosses** and at least one **basiphilous sedge** species.
Site-specific definitions		
Brown Mosses	*Calliergon sarmentosum, Drepanocladus revolvens, D. cossonii, Campylium stellatum, Scorpidium scorpioides*	
Basiphilous Sedges	*Carex dioica, C. hostiana, C. pulicaris*	
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The fen habitat has been maintained by traditional grazing practices. Without an appropriate grazing regime, it would become rank. Light grazing by animals - ideally cattle and ponies from April – November - is essential for maintaining this feature	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The fen must be subject to sufficient grazing to ensure it meets the quality requirements set out above.

Performance indicators for factors affecting the feature (cont.d)		
Factor	***Factor rationale and other comments***	***Operational Limits***
F2. Burning	Areas of Mynydd Preseli have been burnt on an annual basis. These burns are usually carried out by the commoners to encourage fresh growth for stock, but occasionally may be accidental burns or arson attacks. Although focussed on the heath, burns have spread across the fens and flushes. Burning can damage the bryophyte layer and encourages a vigorous re-growth of more competitive, fire-resistant species like purple moor-grass.	*Upper limit*: No burning of fen vegetation *Lower limit*: none set
F3. Water Quality	The fens are fed by springs and seepages which arise on the hills. As such, they are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Springs arising on the sites may be used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas will impact on fen vegetation.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set



Map of the locations of the Alkaline fen habitat within the Preseli SAC. Black dots indicate areas of habitat <0.02ha and pink dots indicate areas of 0.02ha>. (Waun fawr inset)

4.5 Conservation Objective for Feature 5: Depressions on peat substrates of the *Rhynchosporion*

Vision for Depressions on peat substrates of the *Rhynchosporion*

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

Depressions on peat substrates is a habitat type which typically occurs in complex mosaics with wet heath and flush habitats. The vegetation will be open, and have an abundance of species such as white beak-sedge *Rhynchospora alba*, the bog moss *Sphagnum auriculatum*, marsh clubmoss *Lycopodiella inundata* and round-leaved sundew *Drosera rotundifolia*. The amount of this habitat on the site has not been clearly defined yet, but is thought to be around 1-2% of the total site area.

- Depressions on peat substrates of the *Rhynchosporion* will occupy roughly 1-2% of the SAC, and be present in at least two management units (currently units 2 and 3).
- The following plants will be common: white beaked sedge *Rhynchospora alba*, the bog moss, *Sphagnum denticulatum*, round-leaved sundew *Drosera rotundifolia* and, in relatively base-rich sites, brown mosses such as *Drepanocladus revolvens* and *Scorpidium scorpioides*.
- The vegetation in these areas will be typically very open and competitive species indicative of under-grazing, particularly purple moor-grass *Molinia caerulea*, will be kept in check.
- Scrub species such as willow *Salix* and birch *Betula* will also be largely absent.

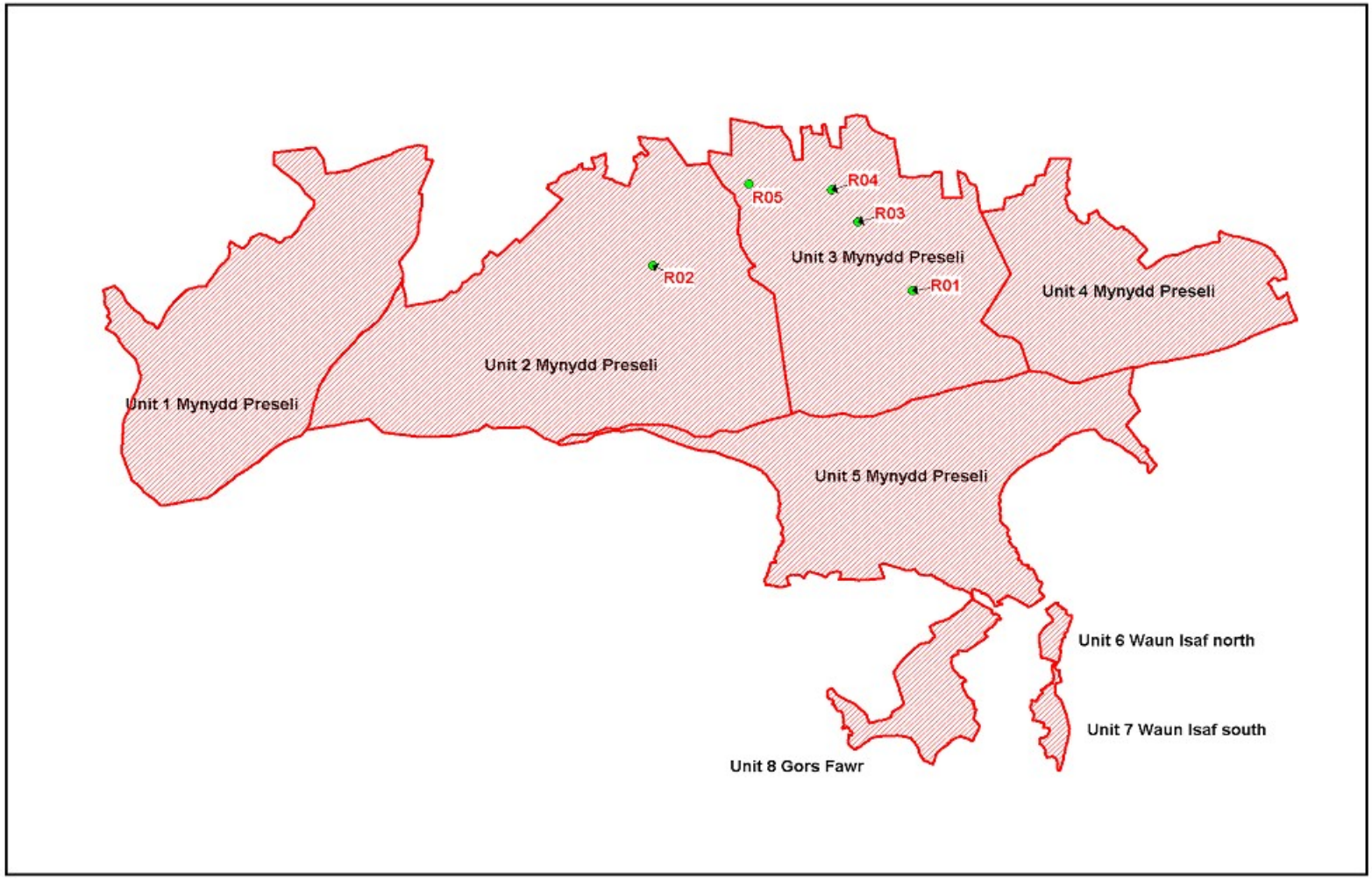
Performance indicators for Depressions on peat substrates of the *Rhynchosporion*

The performance indicators are <u>part of</u> 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 Habitat extent	Attribute targets taken from SAC monitoring report.	*Upper limit:* None set *Lower limit:* The habitat extent is not defined yet but thought to be around 1-2% of the SAC and is known to occur in at least units 1 & 2
A2 Habitat quality	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit:* None set *Lower limit:* 35% of the vegetation in plot R01, 45% of the vegetation in plots R02-R04 and 60% of the vegetation in plot R05 is **good quality *Rhynchosporion* habitat**.
Site-specific habitat definition		
good quality *Rhynchosporion* habitat	Vegetation where, within a 1 m radius area of search: • The cover of dwarf shrubs is less than 50%. *Rhynchospora alba* is present. • The sward height is between 2cm and 20cm. • Fewer than 20 shoots of tall Junci are present. • Patches of short sedge lawn > 25x25 cm are absent.	

Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The *Rhynchosporion* habitat has been maintained by traditional grazing practices. Without an appropriate grazing regime, it would become rank. Light grazing by animals - ideally cattle and ponies from April – November - is essential for maintaining this feature	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The *Rhynchosporion* habitat must be subject to sufficient grazing to ensure it meets the quality requirements set out above.
F2. Burning	Areas of the site have been burnt on an annual basis. These are usually carried out by the commoners to encourage fresh growth for stock, but occasionally may be accidental burns or arson attacks. Although focussed on the heath, burns couldspread across the *Rhynchosporion* habitat.	*Upper limit*: No burning of the *Rhynchosporion* habitat *Lower limit*: none set
F3. Water Quality	The *Rhynchosporion* habitat is fed by springs and seepages which arise on the hills. As such, they are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Springs arising on the sites may be used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas will impact on fen vegetation.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

Rhyncosporion habitat monitoring plots



Produced by CCW on: 3 December 2007

Scale 1:48010

4.6 Conservation Objective for Feature 6: 4030 European dry heaths

Vision for Dry Heath

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

- Dry heath will cover at least 11%[2] of Mynydd Preseli SSSI and display a range of plant, insect and bird species typical of the habitat.
- The following plants will be common in the dry heath: heather *Calluna vulgaris*; bell heather *Erica cinerea* and western gorse *Ulex gallii.*
- Competitive species indicative of under-grazing, particularly bracken *Pteridium aquilinum*, purple moor-grass *Molinia caerulea* and western gorse *Ulex gallii* will be kept in check.

Performance indicators for Dry Heath

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. Habitat extent	Lower limit based on current extent as indicated in Site Issue Briefing.	*Upper limit*: As limited by other habitats. Increases in heath should be at the expense of acid grassland or stands of bracken. *Lower limit*: at least 11% of the total site area.
A2. Habitat quality	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit*: Not required *Lower limit*: 70% of the Dry heath vegetation is **good condition Dry heath**
Site-specific habitat definition		
good condition Dry heath	Vegetation where at each sample point: • Dwarf Shrub cover of at least 50%, with *Vaccinium myrtillus* and/or *Ulex gallii* making up no more than half of that • Drumstick and contorted growth forms of *Calluna* are absent • Grass cover less than 50% • Short, open vegetation structure with a sward height greater than 15cm and at least one 10x10cm patch of bare ground, moss or lichen • No *Juncus squarrosus* • No bracken, scrub or saplings	

[2] Percentage figure to be confirmed following results of SAC contract survey report

Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The dry heath vegetation has been maintained by traditional grazing practices. Without an appropriate grazing regime, the dry heath would become rank and eventually turn to gorse scrub and woodland. Light grazing by animals - ideally cattle from April – November and ponies throughout year - is essential for maintaining the dry heath.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The dry heath must be subject to sufficient grazing to prevent the growth of bracken, purple moor-grass tussocks and western gorse clumps from smothering the growth of mosses, lichens and flowering plants.
F2. Burning	Areas of dry heath have been burnt on an annual basis. These are usually carried out by the commoners to encourage fresh growth for stock, but occasionally may be accidental burns or arson attacks. Burning the same area too frequently may impoverish the heath, encouraging a vigorous re-growth of more competitive, fire-resistant species like purple moor-grass, western gorse and bracken	*Upper limit*: 10% of heath burnt in any one. No individual patch should be burnt more frequently than once in ten years *Lower limit*: none set
F3. Pollutants	The dry heath could be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set

4.7 Conservation Objective for Feature 7: 4010 Northern Atlantic wet heaths with *Erica tetralix*

Vision for feature Wet Heath

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

Wet heath will cover at least 11%[3] of the site and display a range of plant species typical of the habitat. Most of the wet heath will have a mixture of tussocks of purple moor-grass, separated by closely grazed patches rich in deer grass, bog mosses and heathers such as cross-leaved heath. A proportion should also have a range of short sedges and flowering plants such as round leaved sundew.

- The following plants will be common in the wet heath: heather *Calluna vulgaris*; cross-leaved heath *Erica tetralix*; purple moor-grass *Molinia caerulea*; bog asphodel *Narthecium ossifragum*; short sedges *Carex* species; mosses including bog moss *Sphagnum* species; devil's bit scabious *Succisa pratensis*.
- Competitive species indicative of under-grazing, particularly Purple Moor Grass *Molinia caerulea* and Western Gorse *Ulex gallii* will be kept in check.
- Bracken, and scrub species such as willow *Salix* and birch *Betula* will also be largely absent from the wet heath.

Performance indicators for Wet Heath

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. Habitat extent	Lower limit based on current extent as indicated in Site Issue Briefing.	*Upper limit*: As limited by other habitats. *Lower limit*: at least 11% of the total site area
A2. Habitat quality	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit*: Not required *Lower limit*: 70% of the Wet heath vegetation is **good condition Wet heath**
Site-specific habitat definition		
good condition Wet heath	Vegetation where at each sample point: • Three or more positive indicator species are present • Sphagnum > 20% • Short, open vegetation structure • No single species > 60% cover Dwarf shrub cover 25-90%, at least 2 species. • No bracken, scrub or saplings • *Polytrichum commune* <5% cover • Bare ground 1-10% cover	

[3] Percentage figure to be confirmed following results of SAC contract survey report

Performance indicators for factors affecting the feature (cont.d)		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The wet heath vegetation has been maintained by traditional grazing practices. Without an appropriate grazing regime, the wet heath would become rank and eventually turn to gorse scrub and woodland. Light grazing by animals - ideally cattle from April – November and ponies throughout year - is essential for maintaining the wet heath.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The wet heath must be subject to sufficient grazing to prevent the growth of purple moor-grass tussocks and western gorse clumps from smothering the growth of small sedges, mosses and flowering plants.
F2. Burning	Burning still continues on this site. Burning can damage the bryophyte layer and encourages a vigorous re-growth of more competitive, fire-resistant species like purple moor-grass.	*Upper limit*: 10% of wet heath burnt in any six year period and no individual patch to be burnt more frequently than once in every fifteen years *Lower limit*: none set
F3. Water Quality	The wet heath is kept moist by precipitation and seepages. It is not subject to run-off from agricultural activities such as fertiliser application. It could still be affected by pesticides, for example following sheep-dip application, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Abstractions for private water supply could reduce the quantity of water available to vegetation here with a groundwater influence.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4.8 Conservation Objective for Feature 8: Marshy grassland

Vision for Marshy grassland

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

- Marshy grassland will cover ___ (percentage cover to be confirmed following survey)
- The following plants will be common in the marshy grassland: short sedges *Carex* species; lousewort (*Pedicularis sylvatica)* and devil's bit scabious (*Succisa pratensis)* (more to be added when survey info available)
- Competitive species indicative of under-grazing, such as purple moor-grass *Molinia caerulea*, will be kept in check.
- Scrub species such as willow *Salix* and birch *Betula* will also be largely absent from the marshy grassland.

Performance indicators for Marshy grassland

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 vegetation	No vegetation map or extent measurement available for this feature (2007). Requires survey.	*Upper limit*: As limited by other habitats. *Lower limit*: present
A2. Condition of vegetation	Based on the Standard CSM attributes for this feature. Modified according to site-specific requirements.	*Upper limit*: Not required *Lower limit*: 70% of the Marshy Grassland vegetation is **good condition Marshy grassland**.
Site-specific habitat definition		
good condition Marshy grassland	Where at each sample point: • There are three or more positive indicator species present • Vegetation has a short, open structure • No bracken, scrub or saplings	
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The marshy grassland vegetation has been maintained by traditional grazing practices. Without an appropriate grazing regime, the wet heath would become rank and eventually turn to gorse scrub and woodland. Light grazing by animals - ideally cattle from April – November and ponies throughout year - is essential for maintaining the marshy grassland.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The marshy grassland must be subject to sufficient grazing to prevent the growth of purple moor-grass tussocks and western gorse clumps from smothering the growth of small sedges, mosses and flowering plants.

Performance indicators for factors affecting the feature (cont.d)		
Factor	***Factor rationale and other comments***	***Operational Limits***
F2. Burning	Burning still continues on this site. Burning can damage the bryophyte layer and encourages a vigorous re-growth of more competitive, fire-resistant species like purple moor-grass.	*Upper limit*: No burning of marshy grassland *Lower limit*: none set
F3. Water Quality	The marshy grassland is kept moist by precipitation and seepages. It could be subject to run-off from agricultural activities such as fertiliser application. It could still be affected by pesticides, for example following sheep-dip application, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Abstractions for private water supply could reduce the quantity of water available to vegetation here with a groundwater influence.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4.9 Conservation Objective for Feature 9: Fen (Acid/Neutral)

Vision for Fen (Acid/Neutral)

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

- Fen will be at least present in the SSSI in those units where *Coenagrion mercuriale* is present.
- Fen vegetation will have a bryophyte layer including or dominated by *Sphagnum* species. Small sedges, such as *Carex echinata* and *C. nigra* will predominate amongst the vascular plants.
- Scrub species such as willow *Salix* and birch *Betula* will also be largely absent.

Performance indicators for Fen (Acid/Neutral)

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 Habitat extent	No vegetation map or extent measurement available for this feature (2007) Figure to be confirmed following results of SAC contract survey report.	*Upper limit* None set *Lower limit* none set
A2 Habitat quality	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit*: Not required *Lower limit*: 70% of the Non SAC fen vegetation is described as **good condition non-SAC fen vegetation.**
Site-specific habitat definition		
good condition non-SAC fen vegetation	Where at each sample point: • Vegetation with at least 10% cover of Sphagnum mosses. • Presence of 3 of the following species, *Juncus spp., Carex nigra, C. echinata, C. nigra, Narthecium ossifragum, Eriophorum angustifolium, Narthecium ossifragum, Ranunculus repens, Galium palustre, Shagnum spp* • Bracken, trees, scrub and saplings absent • Invasive non-native species absent	
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The fen habitat has been maintained by traditional grazing practices. Without an appropriate grazing regime, it would become rank. Light grazing by animals - ideally cattle and ponies from April – November - is essential for maintaining this feature	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The fen must be subject to sufficient grazing to ensure it meets the quality requirements set out above.
F3. Water Quality	The fens are fed by springs and seepages which arise on the hills. As such, they are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Springs arising on the sites may be used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas will impact on fen vegetation.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4.10 Conservation Objective for Feature 10: Acid Grassland

Vision for Acid Grassland

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

- Acid grassland will be at least present in the SSSI
- The following plants will be common in the acid grassland: heath bedstraw *Galium saxatile*; tormentil *Potentilla erecta* (more to be added when survey info available)
- Competitive species indicative of under-grazing, such as western gorse *Ulex gallii*, will be kept in check.
- Scrub species such as European gorse *Ulex europaeus* and birch *Betula* will also be largely absent from the acid grassland.

Performance indicators for Acid Grassland

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. Habitat extent	No vegetation map or extent measurement available for this feature (2007)	*Upper limit*: As limited by other habitats. Acid grassland should not expand at the expense of heathland. *Lower limit*: None set
A2. Habitat quality	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit*: Not required *Lower limit*: 70% of the Acid grassland vegetation is **good condition acid grassland**
Site-specific habitat definition		
good condition acid grassland	Where at each sample point: • Two or more positive indicator species are present • Short, open vegetation structure • No bracken, scrub or saplings	
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The acid grassland vegetation has been maintained by traditional grazing practices. Without an appropriate grazing regime, it would become rank and eventually turn to scrub and woodland. Light grazing by animals - ideally sheep, cattle and ponies from April – November - is essential for maintaining the acid grassland.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The acid grassland must be subject to sufficient grazing to prevent the growth of western gorse clumps and bracken from smothering the growth of smaller plants.

4.11 Conservation Objective for Feature 11: Bog Orchid *Hammarbya paludosa*

Vision for Bog Orchid *Hammarbya paludosa*

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

- Populations of bog orchid will be present in at least 3 management units of Mynydd Preseli SSSI)
- At least some plants will be fertile (fruiting /flowering/bulbils)

Performance indicators for Bog Orchid *Hammarbya paludosa*

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. Population size	No monitoring undertaken (2007)	*Upper limit*: None set *Lower limit*: None set- No monitoring of the feature to date.
A2. Population extent	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit*: None set *Lower limit*: None set- No monitoring of the feature to date.
A3. Reproductive capability	Sampling should take place between July and the end of September.	*Upper limit*: None set *Lower limit:* Flowering/fruiting/ bubils producing plants present
A4. Habitat Attributes	Based on the Standard CSM attribute for the habitat in which this feature occurs.	*Upper limit*: None set *Lower limit*: Objectives for the condition of *Rhynchosporion* and flush habitats on Mynydd Preseli are Favourable.
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	Bog orchid populations have been maintained by traditional grazing practices. Bare patches such as those created by hoof prints are required for seedling establishment. Light grazing by animals - ideally sheep, cattle and ponies from April – November - is essential for maintaining the populations.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The flushes must be subject to sufficient grazing to prevent the growth of purple moor-grass tussocks from smothering the growth of small sedges, mosses and flowering plants and to ensure the presence of bare ground.
F2. Water Quality	The flush habitat of the Bog Orchid is fed by springs and seepages which arise on the hill itself. These are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts.	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set

Performance indicators for factors affecting the feature (cont.d)		
Factor	***Factor rationale and other comments***	***Operational Limits***
F3. Water Quantity	Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas could impact on Bog Orchid	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4.12 Conservation Objective for Feature 12: Flush

Vision for Flush

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

- Acid Neutral and Basic Flush will be at least present in the SSSI (basic flush is equivalent to Alkaline Fen - Feature 4)
- The following plants will be common in the flushes: short sedges *Carex* species; mosses including bog moss *Sphagnum* species; cotton grass *Eriophorum angustifolium*; spike rushes *Eleocharis* species; round leaved sundew *Drosera rotundifolia*; Marsh St. John's-wort *Hypericum elodes* and devil's bit scabious *Succisa pratensis*.
- The flushes will continue to support populations of Pale Butterwort *Pinguicula lusitanica*
- They will also support populations of other uncommon plant species including Bog Orchid *Hammarbya paludosa*; Dioecious Sedge *Carex dioica*; Slender Green Feather Moss *Hamatocaulis vernicosus*.
- 70 % of the flush vegetation will be suitable breeding habitat for southern damselfly
- Competitive species indicative of under-grazing, such as Purple Moor Grass *Molinia caerulea*, will be kept in check.
- Scrub species such as willow *Salix* and birch *Betula* will also be largely absent from the flushes.

Performance indicators for Flush

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 flush condition		
Attribute	***Attribute rationale and other comments***	***Specified limits***
A1. Habitat extent	No vegetation map or extent measurement available for this feature (2007)	*Upper limit*: As limited by other habitats. *Lower limit*: At least present in all units where *Coenagrion mercuriale* is present

A2. Habitat quality	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	An additional lower limit has been set for the presence of *Hypericum elodes – Potamogeton polygonifolius* soakway (M29) as this is the principal flush type for the southern damselfly. *Upper limit*: Not required *Lower limit*: 70% of the Flush vegetation is **good condition flush vegetation** and, 70 % of the flush vegetation is defined as **suitable flush vegetation for southern damselfly**
A3. Habitat distribution	Lower limit based on current extent	*Upper limit:* None set *Lower limit:* Flushes should be present in all management units where southern damselfly is a key species (1, 2, 3, 4, 5, 6, 8 & 9)
A4. Rare and Uncommon Plant Species		*Upper limit*: not set *Lower limit:* continued presence of all uncommon species listed, and maintenance of *Pinguicula lusitanica* in favourable condition (see 4.14 below)

Site-specific habitat definition	
good condition flush vegetation	• At least three (acid flush) or four (neutral flush) positive indicator species present • *Sphagnum* or brown moss spp. present • Indicators of negative change are absent including large *Carex* spp.
suitable flush vegetation for southern damselfly	• At least 20% cover of *Menyanthes trifoliata / Hypericum elodes/ Potamogeton polygonifolius* • No more than 20% of the total cover is greater than 15cm tall

Performance indicators for factors affecting the flush		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The flush vegetation has been maintained by traditional grazing practices. Without an appropriate grazing regime, the flush would become rank, dry out and perhaps eventually turn to scrub and woodland. Light grazing by animals - ideally cattle and ponies between April and November each year - is essential for maintaining the flushes.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause poached, liquid mud areas to appear across significant areas of the flush systems. *Lower limit*: The flushes must be subject to sufficient grazing to prevent the growth of purple moor-grass tussocks from smothering the growth of small sedges, mosses and flowering plants and to ensure the presence of bare ground.
F3. Water Quality	The flushes are fed by springs and seepages which arise on the hill itself. As such, they are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas will impact on flush vegetation.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4.13 Conservation Objective for Feature 13: Marsh Clubmoss *Lycopodiella inundata*

Vision for Marsh Clubmoss *Lycopodiella inundata*

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

- At least present in the SAC
- At least some plants should be fertile
- Habitat extent and condition is as set out in the performance indicator table.

Performance indicators for Marsh Clubmoss *Lycopodiella inundata*

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. Population size	No monitoring to date (2007)	*Upper limit*: None set *Lower limit*: None set
A2. Population extent and distribution	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit*: None set *Lower limit*: Viable populations in at least 1 management unit within Mynydd Preseli SSSI, and on Waun Fawr SSSI
A3. Reproductive capability	Sampling should take place between June and the end of October.	*Upper limit*: None set *Lower limit:* Fertile (Flowering/fruiting) plants present
A4. Habitat Attributes	Based on the Standard CSM attribute for the habitat in which this feature occurs.	*Upper limit*: None set *Lower limit*: Objectives for the condition of Depressions on peat substrates of the *Rhynchosporion* habitat on Preseli SAC are Favourable.

Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The habitat supporting the marsh clubmoss has been maintained by traditional grazing practices. Without an appropriate grazing regime, it would become rank, dry out and perhaps eventually turn to scrub and woodland. Light grazing by animals - ideally cattle and ponies between April and November each year - is essential for maintaining the habitat and species.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The flushes must be subject to sufficient grazing to prevent the growth of purple moor-grass tussocks from smothering the growth of small sedges, mosses and flowering plants and to ensure the presence of bare ground.

Performance indicators for factors affecting the feature (cont.d)		
Factor	***Factor rationale and other comments***	***Operational Limits***
F2. Water Quality	The habitats supporting marsh clubmoss are fed by springs and seepages which arise on the hill itself. As such, they are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F3. Water Quantity	Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas could impact on marsh clubmoss habitat.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4.14 Conservation Objective for Feature 14: Pale Butterwort *Pinguicula lusitanica*

Vision for Pale Butterwort *Pinguicula lusita*

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

- Pale Butterwort wil be present on Waun Fawr and in at least 1 management unit on Mynydd Preseli SSSI
- At least some plants will be fertile
- Habitat extent and condition is as set out in the performance indicator table.

Performance indicators for Pale Butterwort *Pinguicula lusita*

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. Population size	No information available (2007)	*Upper limit*: None set *Lower limit*: None set- No monitoring of the feature to date.
A2. Population extent and distribution	Based on the Standard CSM attribute for this feature. Modified according to site-specific requirements.	*Upper limit*: None set *Lower limit*: viable populations present on Waun Fawr and in at least 1 management unit on Mynydd Preseli SSSI.
A3. Reproductive capability	Sampling should take place during May & June	*Upper limit*: None set *Lower limit:* Fertile (Flowering/fruiting) plants present
A4. Habitat Attributes	Based on the Standard CSM attribute for the habitat in which this feature occurs.	*Upper limit*: None set *Lower limit*: Objectives for the condition of Alkaline Flush habitat on Mynydd Preseli SAC are Favourable.
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	Pale butterwort populations have been maintained by traditional grazing practices. Bare patches such as those created by hoof prints are required for seedling establishment. Light grazing by animals - ideally sheep, cattle and ponies from April – November - is essential for maintaining the populations.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The flushes must be subject to sufficient grazing to prevent the growth of purple moor-grass tussocks from smothering the growth of small sedges, mosses and flowering plants and to ensure the presence of bare ground.
F2. Water Quality	Springs and seepages feed the flush habitat of the pale butterwort. These could be subject to run-off from agricultural activities such as fertiliser or sheep-dip application, spraying of bracken, or airborne pollutants.	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F3. Water Quantity	Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas could impact on pale butterwort.	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

4. 15 Conservation Objective for Feature 15: Rare mosses and lichens on rocky tors

Vision for Rare mosses and lichens on rocky tors

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

- During each round of monitoring, populations of all members of the species of the assemblage are found within Mynydd Preseli SSSI
- Habitat extent and condition is as set out in the performance indicator table.

Performance indicators for Rare mosses and lichens on rocky tors

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. Population sizes and distributions	Based upon the current population numbers on Mynydd Preseli	***Andreaea megistospora*** *Upper limit*: None set *Lower limit*: At least present ***Dicranum fuscescens*** *Upper limit*: None set *Lower limit*: At least present ***Douinia ovata*** *Upper limit*: None set *Lower limit*: At least present ***Glyphomitrium daviesii*** *Upper limit*: None set *Lower limit*: At least present ***Grimmia decipiens*** *Upper limit*: None set *Lower limit*: At least present ***Grimmia funalis*** *Upper limit*: None set *Lower limit*: At least present ***Grimmia incurva*** *Upper limit*: None set *Lower limit*: At least present ***Gymnomitrion crenulatum*** *Upper limit*: None set *Lower limit*: At least present ***Hedwigia integrifolia*** *Upper limit*: None set *Lower limit*: At least present ***Kiaeria blyttii*** *Upper limit*: None set *Lower limit*: At least present ***Marsupella sprucei*** *Upper limit*: None set *Lower limit*: At least present ***Schistostega pennata*** *Upper limit*: None set *Lower limit*: At least present

A3. Habitat Attributes: Niche availability	Based upon generic guidance for vascular plants of Screes & cliffs and of limestone pavements, cliffs and scress (Suites 12 & 13)	*Upper limit*: None set *Lower limit:* No net loss of area or extent of tors and blockfields.
A4. Habitat Attributes: Negative indicators: physical damage		*Upper limit*: None set *Lower limit:* Signs of stock grazing absent and abrasion from recreational pressure absent
A5. Habitat Attributes: Negative indicators: Competition		*Upper limit*: None set *Lower limit:* Associated vegetation on the tors should not include competitive alien species (especially *Rhododendron ponticum*)
A6. Habitat Attributes: Negative indicators: Shading		*Upper limit*: None set *Lower limit:* Tree/shrub cover should be < 10%
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Burning	Lichens and bryophytes are susceptible to damage by burning. Lack of control over burning currently exercised makes key lichen locations vulnerable.	*Upper limit*: No burning within key lichen and bryophyte areas *Lower limit*: None set
F2. Air pollution	Lichens and bryophytes are susceptible to air pollution, such as emissions of sulphurous or nitrous oxides from vehicle exhausts or industry	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F3. Recreational Pressure	The tors of Mynydd Preseli is a key lichen location – it attracts moderate numbers of visitors who have the potential to abrade lichens on rock faces	*Upper limit*: No damage to the lichens and bryophytes of the assemblage.

4. 16 Conservation Objective for Feature 16: Rare mosses on damp ground

Vision for Rare mosses on damp ground

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

- During each round of monitoring all species within the assemblage are recorded
- Habitat extent and condition is as set out in the performance indicator table.

Performance indicators for Rare mosses on damp ground

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. Population size and distribution	Based upon the current population numbers on Mynydd Preseli	***Hamatocaulis vernicosus*** *Upper limit*: None set *Lower limit*: At least present ***Campylopus brevipilus*** *Upper limit*: None set *Lower limit*: At least present ***Cephalozia macrostachya* var. *macrostachya*** *Upper limit*: None set *Lower limit*: At least present ***Fossombronia fimbriata*** *Upper limit*: None set *Lower limit*: At least present ***Fossombronia foveolata*** *Upper limit*: None set *Lower limit*: At least present ***Haplomitrium hookeri*** *Upper limit*: None set *Lower limit*: At least present ***Pohlia bulbifera*** *Upper limit*: None set *Lower limit*: At least present ***Sphagnum molle*** *Upper limit*: None set *Lower limit*: At least present ***Sphagnum platyphyllum*** *Upper limit*: None set *Lower limit*: At least present
A3. Habitat Attributes		*Upper limit*: None set *Lower limit*: None set – No monitoring of the habitat requirements of these species has been undertaken within the SAC

Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	The bryophyte assemblage populations have been maintained by traditional grazing practices. Light grazing by animals - ideally sheep, cattle and ponies from April – November - is essential for maintaining the populations.	*Upper limit*: The grazing pressure must not be so high as to break down the vegetation structure and cause significant bare areas to appear. *Lower limit*: The flushes must be subject to sufficient grazing to prevent the growth of purple moor-grass tussocks from smothering the growth of small sedges, mosses and flowering plants.
F2. Burning	Bryophytes are susceptible to damage by burning. Lack of control over burning currently exercised makes key bryophyte locations vulnerable.	*Upper limit*: No burning within key areas *Lower limit*: None set
F3. Water Quality	The flush, streamside and damp path-edge habitats of this assemblage are fed by springs and seepages arising within the SAC. These are not subject to run-off from agricultural activities but they could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicles	*Upper limit*: levels of pollutants must not exceed critical thresholds for vegetation types according to JNCC guidance *Lower limit*: none set
F4. Water Quantity	Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas could impact on slender green feather moss	*Upper limit*: volume and number of private abstractions not to increase above current levels *Lower limit*: none set

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 Southern damselfly *Coenagrion mercuriale*

Conservation Status of Southern damselfly *Coenagrion mercuriale*

Favourable Condition will be attained when the density of adult males during sampling is at least 1 male per 10 square metres of breeding habitat and the extent of breeding habitat on a particular site is at least 500 square metres.

The SAC monitoring for this species undertaken during late June and early July 2004 (Boardman, 2005) reported that the species was considered to be in favourable condition. Adult counts should ideally be carried out between 11.00 am and 16.00 pm when the air temperature is above 17°C and the wind strength below Beaufort Scale 3. However adult damselflies were also recorded whilst carrying out habitat mapping in unsuitable weather conditions and hence only 248 males were recorded.

A total of 4346.5 square metres of suitable breeding habitat were identified at Mynydd Preseli. The site clearly attains Favourable Condition status upon the amount of suitable breeding habitat. The population attribute of adult male damselflies failed to attain Favourable Condition status due to extended periods of sub-optimal weather conditions; however the 248 males recorded in good weather conditions suggest that, given longer periods of good weather conditions during monitoring, Favourable Condition would have easily been achieved. Therefore the feature is considered to be in **Favourable Condition: Unclassified**.

Management Requirements of Southern damselfly

The management history of Waun Fawr SSSI was reported by Evans (1989) as ‘very intensive all year cattle and pony grazing’. A decline in grazing pressure in recent years has allowed purple moor-grass to develop a strongly tussocky structure in several key flush systems. Elsewhere some flush channels remain in a good, open condition. A grazing regime, which includes heavy stock such as cattle and ponies, seem necessary to keep the flush systems open and in good condition. The reduction of grazing and the loss of cattle and ponies from Mynydd Preseli over the last twenty or so years will have had deleterious effects on colonies as watercourses become overgrown, as has happened on Waun Isaf. Alterations to natural drainage channels, or increases in water extraction will also have had a damaging effect on southern damselfly populations. Information regarding this species, its distribution and habitat requirements is available in Skidmore (1996).

Management actions required:

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Fragmentation of habitat patches should be reversed. Habitat restoration should focus on channel manipulation.
- Water quality and quantity should be monitored at flush complexes.
- Maintenance of watching brief over all developments and proposals that could have adverse hydrological and ecological effects on the flushes.

Relevant publications:
Assessment of favourable condition for the southern damselfly on candidate special areas of conservation in Wales. Boardman, 2005. Environmental monitoring report no. 18.
Coker, S. & Fox, T. 1985. *West Wales dragonflies.* Haverfordwest., Mountain Books.
Evans, F. 1989. *A review of the management of lowland wet heath in Dyfed, West Wales.* Contract Surveys. **42**. Nature Conservancy Council.
Skidmore, P. 1996. *A baseline survey of the status of the southern damselfly Coenagrion mercuriale on Mynydd Preseli pSAC.* CCW Contract Science. **181**. Countryside Council for Wales.

5.2 Conservation Status and Management Requirements of Feature 2: Marsh fritillary butterfly *Eurodryas aurinia*

Conservation Status of Marsh fritillary

The results of the 2006 SAC monitoring indicate that the status of marsh fritillary at Preseli SAC is **Unfavourable**. Two meta-populations are thought utilise areas of suitable habitat both within the SAC and in the surrounding countryside. The extent and quality of habitat for both these meta-populations may fall short of the suggested minimum of 50 ha of suitable habitat (including 10 ha of Good Condition habitat) needed to support a viable population.

Further habitat monitoring would be required before the condition of the marsh fritillary within Preseli SAC can be accurately assessed. However, currently the indications are that the condition of marsh fritillary is **Unfavourable: unclassified** with both meta-populations failing to meet both habitat and population attribute targets.

Management Requirements of Marsh fritillary

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Fragmentation of habitat patches should be reversed.
- Consideration should be given to habitat restoration schemes in the area outwith the protected site.
- Controls need to be put in place to restrict burning activities.

Relevant publications:
Fowles, A.P. (2005) Habitat quality mapping for marsh fritillary populations. CCW staff science report no. 05/5/1

SAC monitoring report *Euphydras aurinia* marsh fritillary (draft) 2006.

5.3 Conservation Status and Management Requirements of Feature 2: Slender Green Feather Moss *Hamatocaulis vernicosus*

Conservation Status of Slender green feather moss *Hamatocaulis vernicosus*

The neutral to slightly base-rich flush habitat occupied by this moss is widespread across parts of Mynydd Preseli. The moss itself often occurs in close proximity to permanently wet runnels in these areas and has been found to be present at 20 locations in Preseli SAC. The condition of the **s**lender green feather moss *Hamatocaulis vernicosus* is assessed as **Favourable: unclassified**. The status is dependant upon the condition of the flushes where the species occurs and is unlikely to change unless there are changes to the condition or extent of the flush systems and is considered to be **Favourable**.

Management Requirements of Slender green feather moss *Hamatocaulis vernicosus*

- Continuation of an appropriate grazing regime is required.
- Water quality and quantity should be monitored at flush complexes.

Relevant publications:
Bosanquet, S.D.S. & Rhind, P.M. (2004). *Pembrokeshire Register of Rare Bryophytes*. Privately published, Haverfordwest.
Hill, M.O. & Preston, C.D. (1998). The geographical relationships of British and Irish bryophytes. *J. Bryol.* **20** 127-226.
Hill, M.O., Preston, C.D. & Smith, A.J.E. (1991-94). *Atlas of the Bryophytes of Britain and Ireland*. Harley Books.
Holyoak, D.T. (1999) *Status, ecology and conservation of the moss Hamatocaulis vernicosus in England and Wales*. EN & CCW contract survey report no. FIN/CON/VT9918.

5.4 Conservation Status and Management Requirements of Feature 4: Alkaline fens

Conservation Status of Alkaline fens

NVC survey of Preseli SAC (CCW, 2004) recorded 10 areas of alkaline fen > 5 x 5m. As performance indicator targets are met, the condition of the feature is assessed as **Favourable: unclassified** (December 2004).

The results of the 2004 survey indicate that the status of alkaline fen at Preseli SAC is **Favourable.**

Alkaline fen is difficult to monitor because it consists of small fragments that are widely distributed across the site. The feature is not the main management driver for the site making it difficult to justify spending large amounts of time and resources undertaking detailed monitoring. The simple targets detailed in the performance indicator table reflect the desire to keep monitoring as quick and simple as possible, while informing management and condition.

Management Requirements of Alkaline Fens

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock i.e. cattle and ponies, is required.
- Water quality and quantity should be monitored at flush/fen complexes.

Relevant publications:
Preseli SAC, *Alkaline fens* (7230). SAC Monitoring report (draft). Wilkinson, 2006**.**

5.5 Conservation Status and Management Requirements of Feature 5: Depressions on peat substrates of the *Rhynchosporion*

Conservation Status of Depressions on peat substrates of the *Rhynchosporion*

The Rhynchosporion habitat was monitored by the SAC monitoring team in 2004 and found to be in **Favourable: unclassified** condition, with all of the plots achieving the set targets. The results from the monitoring plots show that a relatively high proportion (over 70% in each plot) of the Rhynchosporion is in good condition.

The results of the 2004 SAC monitoring indicate that the status of ***Rhynchosporion*** at Preseli SAC is **Favourable.**

We would wish to see the current extent and broad distribution of wetland habitats maintained across the site. Drainage is near natural in most areas but in the few areas affected by channel manipulation it would be desirable to restore natural stream flows and seepages.

Management Requirements of Rhynchosporion

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock is required.
- Water quality and quantity should be monitored at flush complexes.

Relevant publications:
Habitat condition assessment of European Dry Heath, Northern Atlantic Wet Heath and Rhynchosporion habitats within the Preseli SAC. David D. Gray. CCW Environmental Monitoring Report No. 21.
Preseli SAC, *Alkaline fens* (7230). SAC Monitoring report (draft). Wilkinson, 2006.

5.6 Conservation Status and Management Requirements of Feature 6: European dry heaths

Conservation Status of Dry heath

Dry heath habitats were monitored by the SAC monitoring team in 2004 and found to be in **Unfavourable: unclassified condition** with no plots achieving the set targets. Dry heath failed mainly on the condition of the dwarf shrubs, which were mostly both sparse and low in growth due to sustained herbivore activity. Bryophyte cover was also consistently poor.

The dry heath is generally overgrazed and we would wish to see development of more mature heather with associated succession to scrub/woodland in places.

The results of the 2004 SAC monitoring indicate that the status of dry heath at Preseli SAC is **Unfavourable.**

Management Requirements of Dry heath

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Better working relationships with commoners and management agreements are required.
- Controls need to be put in place to restrict burning activities and limit sheep numbers.

Relevant publications:
Habitat condition assessment of European Dry Heath, Northern Atlantic Wet Heath and Rhynchosporion habitats within the Preseli SAC. David D. Gray. CCW Environmental Monitoring Report No. 21.

5.7 Conservation Status and Management Requirements of Feature 7: Northern Atlantic wet heaths with *Erica tetralix*

Conservation Status of Wet heath

The wet heath was monitored in 2004 and condition assessed as **Unfavourable: unclassified** with no plots achieving the set targets. The overall pattern in the condition of wet heath is less clear and many individual samples passed within most of the plots, however it can be said that there was generally a higher failure rate due to condition of the dwarf shrubs and the high cover of *Molinia*. The over-

abundance of *Juncus squarrosus* and sparsity of sphagna were considerably less frequent as causes of failure.

The wet heath often occurs in intimate mosaics with wetland habitats on the lower slopes. Its distribution is principally determined by environmental variables, but would presumably succeed to 'humid' dry heath then willow/birch scrub and woodland. Overgrazing by sheep and frequent burns have been cited as the reasons for current condition. No monitoring has been carried out to verify this as yet.

The results of the 2004 SAC monitoring indicate that the status of wet heath at Preseli SAC is **Unfavourable.**

Management Requirements of Wet Heath

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock is required.
- Controls need to be put in place to restrict burning activities and to limit sheep numbers.

Relevant publications:
Habitat condition assessment of European Dry Heath, Northern Atlantic Wet Heath and Rhynchosporion habitats within the Preseli SAC. David D. Gray. CCW Environmental Monitoring Report No. 21.

5.8 Conservation Objective for Feature 8: Marshy grassland

Conservation Status of Feature 8

Unknown, likely to be **Unfavourable recovering**

Management Requirements of Marshy Grassland

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Controls need to be put in place to restrict burning activities.

5.9 Conservation Status and Management Requirements of Feature 9: Fen (Acid/Neutral)

Conservation Status of Fen (Acid/Neutral)

The rapid review assessment considered this feature to be in favourable condition. The Alkaline Fen feature achieved Favourable condition during SAC monitoring, therefore the feature is considered likely to be in **Favourable condition.** The assessment indicate that the status of Fen (Acid/Neutral) at Preseli SAC is **Favourable.**

Management Requirements of Fen (Acid/Neutral)

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Better working relationships with commoners and management agreements are required.
- Controls need to be put in place to restrict burning activities.
- Water quality and quantity should be monitored at flush complexes.

5.10 Conservation Status and Management Requirements of Feature 10: Acid Grassland

Conservation Status of Acid Grassland

Unknown, likely to be **unfavourable recovering** or **favourable**

Management Requirements of Acid Grassland

- Reinstatement or continuation of an appropriate grazing regime would be required to maintain the feature, but losses to later successional habitats such as dry heath are acceptable.

5.11 Conservation Status and Management Requirements of Feature 11: Bog Orchid *Hammarbya paludosa*

Conservation Status of Bog Orchid

Unknown - No monitoring, but surveillance over recent decades suggests a decline in population sizes.

Management Requirements of Bog Orchid

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock is required.
- Water quality and quantity should be maintained at flush complexes.

5.12 Conservation Status and Management Requirements of Feature 12: Flush

Conservation Status of Flush

The rapid review assessment considered this feature to be in favourable condition. The often closely associated Alkaline Fen and Rhynchosporion features achieved Favourable condition during SAC monitoring, therefore the feature is considered to be in **favourable condition.**

Management Requirements of Flush

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Water quality and quantity should be maintained at flush complexes.

5.13 Conservation Status and Management Requirements of Feature 13: Marsh Clubmoss *Lycopodiella inundata*

Conservation Status of Marsh Clubmoss *Lycopodiella inundata*

Unknown

Management Requirements of Marsh Clubmoss *Lycopodiella inundata*

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Controls need to be put in place to restrict burning activities.
- Water quality and quantity should be maintained in wet heath and flush complexes.

5.14 Conservation Status and Management Requirements of Feature 14: Pale Butterwort *Pinguicula lusitanica*

Conservation Status of Pale Butterwort *Pinguicula lusitanica*

Unknown

Management Requirements of Pale Butterwort *Pinguicula lusitanica*

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock is required.
- Water quality and quantity should be maintained at flush complexes.

5.15 Conservation Status and Management Requirements of Feature 15: Rare mosses and lichens on rocky tors

Conservation Status of Rare mosses and lichens on rocky tors

Unknown

Management Requirements of Rare mosses and lichens on rocky tors

- Controls need to be put in place to restrict burning activities.
- Impacts of recreational activities may need to be considered

5.16 Conservation Status and Management Requirements of Feature 16: Rare mosses on damp ground

Conservation Status of Rare mosses on damp ground

Unknown

Management Requirements of Rare mosses on damp ground

- At all sites the reinstatement or continuation of an appropriate grazing regime using heavy stock as cattle and ponies is required.
- Controls need to be put in place to restrict burning activities – these can promote dominance by the non-native *Campylopus introflexus*
- Water quality and quantity should be maintained.

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	000157	CL19 Cerrig Lladron	This common was heavily stocked with sheep, welsh mountain ponies and a few cattle. Cattle are no longer grazed here, pony numbers have dwindled to virtual extinction and even sheep numbers are now dropping. Partly these changes have come about as a result of changes in subsidy payments and other issues such as the introduction of pony passports. Partly they also reflect increasing difficulties for stock management - for example, decreased stocking leading to increased growth of bracken which harbours ticks. This in turn leads to delayed turnout of ewe lambs to avoid heavy tick infestation. Reversing this decline in stocking will be necessary if all features are to be maintained in favourable condition. Allowing successional processes to operate, for example turning acid grassland into heath and heath into wood could be considered if grazing issues become insurmountable. The key wetland features are generally unaffected by pollution, and provided there are no major changes to water supply they should be ok.	Yes
2	000158	CL19 Brynberian Moor west	This common was heavily stocked with sheep, welsh mountain ponies and a few cattle. Cattle are no longer grazed here, pony numbers have dwindled to virtual extinction, and even sheep numbers are now dropping. Partly these changes have come about as a result in subsidy payments and other issues such as the introduction of pony passports. Partly they also reflect increasing difficulties for stock management - for example decreased stocking leading to increased growth of bracken which harbours ticks. This in turn leads to delayed turnout of ewe lambs to avoid heavy tick infestation. Reversing this decline in stocking will be necessary if all features are to be maintained in favourable condition. Allowing successional processes to operate, for example turning acid grassland into heath and heath into wood, could be considered if grazing issues become insurmountable. The key wetland features are generally unaffected by pollution and provided there are no major changes to water supply they should be ok.	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
3	000159	CL19 Brynberian Moor east	This common was heavily stocked with sheep, welsh mountain ponies and a few cattle. Cattle are no longer grazed here, pony numbers have dwindled to virtual extinction, and even sheep numbers are now dropping. Partly these changes have come about as a result in subsidy payments and other issues such as the introduction of pony passports. Partly they also reflect increasing difficulties for stock management - for example decreased stocking leading to increased growth of bracken which harbours ticks. This in turn leads to delayed turnout of ewe lambs to avoid heavy tick infestation. Reversing this decline in stocking will be necessary if all features are to be maintained in favourable condition. Allowing successional processes to operate, for example turning acid grassland into heath and heath into wood, could be considered if grazing issues become insurmountable. The key wetland features are generally unaffected by pollution and provided there are no major changes to water supply they should be ok.	Yes
4	000160	CL19 Foeldrygarn	This common was heavily stocked with sheep, welsh mountain ponies and a few cattle. Cattle are no longer grazed here, pony numbers have dwindled to virtual extinction, and even sheep numbers are now dropping. Partly these changes have come about as a result in subsidy payments and other issues such as the introduction of pony passports. Partly they also reflect increasing difficulties for stock management - for example decreased stocking leading to increased growth of bracken which harbours ticks. This in turn leads to delayed turnout of ewe lambs to avoid heavy tick infestation. Reversing this decline in stocking will be necessary if all features are to be maintained in favourable condition. Allowing successional processes to operate, for example turning acid grassland into heath and heath into wood, could be considered if grazing issues become insurmountable. The key wetland features are generally unaffected by pollution and provided there are no major changes to water supply they should be ok.	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
5	000161	CL43 Cors Tewgyll	This common was heavily stocked with sheep, welsh mountain ponies and a few cattle. Cattle are no longer grazed here, pony numbers have dwindled to virtual extinction, and even sheep numbers are now dropping. Partly these changes have come about as a result in subsidy payments and other issues such as the introduction of pony passports. Partly they also reflect increasing difficulties for stock management - for example decreased stocking leading to increased growth of bracken which harbours ticks. This in turn leads to delayed turnout of ewe lambs to avoid heavy tick infestation. Reversing this decline in stocking will be necessary if all features are to be maintained in favourable condition. Allowing successional processes to operate, for example turning acid grassland into heath and heath into wood, could be considered if grazing issues become insurmountable. The key wetland features are generally unaffected by pollution and provided there are no major changes to water supply they should be ok.	Yes
6	000162	CL43 Waun Isaf north	This common was hard grazed by cattle, ponies and sheep until 2005. Since then it has only had a couple of 'wild' ponies grazing it, but CCW are assisting with boundary fencing with a view to encouraging an active grazier to re-introduce stock.	Yes
7	000163	CL43 Waun Isaf south	This common was effectively abandoned in the 1980s. A small number of welsh black cattle were reintroduced in 2005 following CCW-financed boundary fencing. One of these died, perhaps as a result of hemlock water-dropwort poisoning. TB has been an issue here, and mixed stocking avoided as a result. Finding willing graziers with appropriate stock remains the key challenge.	Yes
8	000164	CL43 Gors Fawr	Discussions were held with active graziers in 2010 (see filenote: Welsh Mountain Ponies on Preseli). Consideration was given to re-establishing the Preseli Hill Pony Improvement Society, as a way of helping the economics of grazing with Section A's. The action was for graziers to consider whether or not this was an initiative that would be worth taking forward. 3 months later, two of the main graziers said that they didn't think it would be. One had sold his remaining ponies, leaving Gors Fawr stocked only with sheep.	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
9	000165	CL86 Waun Fawr, Puncheston	Previously well stocked with ponies and cattle, this common has in recent years been effectively abandoned and the habitats are fast becoming Molinia and gorse dominated. Himalayan balsam has recently appeared on the common, and its spread should be checked. Rhododendron is also beginning to get established on and around the common. A contract has been let to remove the species from the common. Semi- permanent electric fencing has been put up alongside the track across the common and a management agreement signed with the two active graziers who have formed a commoners association. The flushes and streams that previously criss crossed the common are closing over and this may well be leading to the site becoming wetter as water is held up on the site. If grazing fails to open up some of streams flailing tussocks may help reduce this problem.	Yes

7. GLOSSARY

This glossary defines the 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[4]:

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

[4] 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.**[5]

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.

[5] 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**.

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