Bridgend RLDP Deposit Plan

Habitats Regulations Assessment

On behalf of **Bridgend County Borough Council**

Project Ref: 42796/rr007i2 | Rev: FINAL | Date: May 2021

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For and on behalf of Stantec UK Limited				

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1 Introduction

1.1 Background

1.1.1 Stantec UK Ltd[1] (Stantec) has been commissioned by Bridgend County Borough Council (BCBC) to undertake a Habitats Regulations Assessment (HRA) of the Bridgend LDP Review and the emerging Bridgend Replacement Local Development Plan ('the emerging RLDP'). This HRA Report documents the findings of the HRA carried out in respect of the Bridgend LDP Deposit Documents ('the Deposit Plan') published in accordance with Regulation 17 of the Development Planning (Wales) Regulations 2005, including the Bridgend LDP Deposit Plan ('the LDP Deposit Plan').

1.1.2 In accordance with the Development Planning (Wales) Regulations 2005 ('the DP Regulations'), the Deposit Plan represents the first full draft of an emerging replacement LDP for the BCBC area. The Deposit Plan outlines a new strategic framework, comprising a vision objectives and spatial strategy, and an accompanying suite of site allocations and policies (strategic and thematic) to guide development across the BCBC area. All substantive components of the Deposit Plan, and thus the emerging RLDP, have now been subject to HRA in accordance with statutory requirements.

1.1.3 The HRA process for the Bridgend LDP Review commenced in June 2018 with the identification of relevant European Sites to consider in the HRA. Details of the site selection process and the qualifying features of these sites was set out in: **Bridgend LDP Review: Initial HRA Screening Report** (PBA, 2018). Following this, the assessment progressed to identify any 'likely significant effects' (LSE) arising from the Bridgend LDP Pre-Deposit Documents. Details of this assessment were set out in: **Bridgend LDP Pre-Deposit Documents (LDP Preferred Strategy) Habitats Regulations Assessment Screening Report** (PBA, 2019). Natural Resources Wales (NRW) was consulted on these initial stages of the HRA process, with a response received 6th November 2019. Details of this response are presented in **Section 3**.

1.1.4 This report builds on previous stages of HRA and documents the findings of an Appropriate Assessment carried out to identify any likely significant effects on the integrity of European Sites in the context of their conservation objectives, arising from the Local Development Plan Deposit Documents (LDP Deposit Plan) published in accordance with Regulation 15 of the Development Planning (Wales) Regulations 2005.

1.2 Purpose

1.2.1 Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) requires that a HRA must be undertaken to demonstrate compliance with statutory duties set out in the Habitats Regulations where a plan or project is considered likely to have significant effects on European Sites and is not directly connected with or necessary for the management of the site.

1.2.2 The purpose of this report is to document the second stage of this HRA process, namely an appropriate assessment of the Bridgend LDP Deposit Plan and any likely significant effects on the integrity of European Sites in the context of their conservation objectives.

1.2.3 The development of this HRA of the Bridgend LDP Deposit Plan does not exempt individual development proposals undergoing project specific HRA through the development management process where necessary.

[1] Formerly Peter Brett Associates LLP

1.3 How to comment on this HRA Report

1.3.1 This HRA Report is being consulted on alongside the Bridgend LDP Deposit Documents, including the LDP Preferred Strategy. Details of how to participate in the consultation are provided on BCBC's dedicated Replacement Bridgend Local Development Plan website.

1.4 Structure of this report

1.4.1 This report is structured as follows:

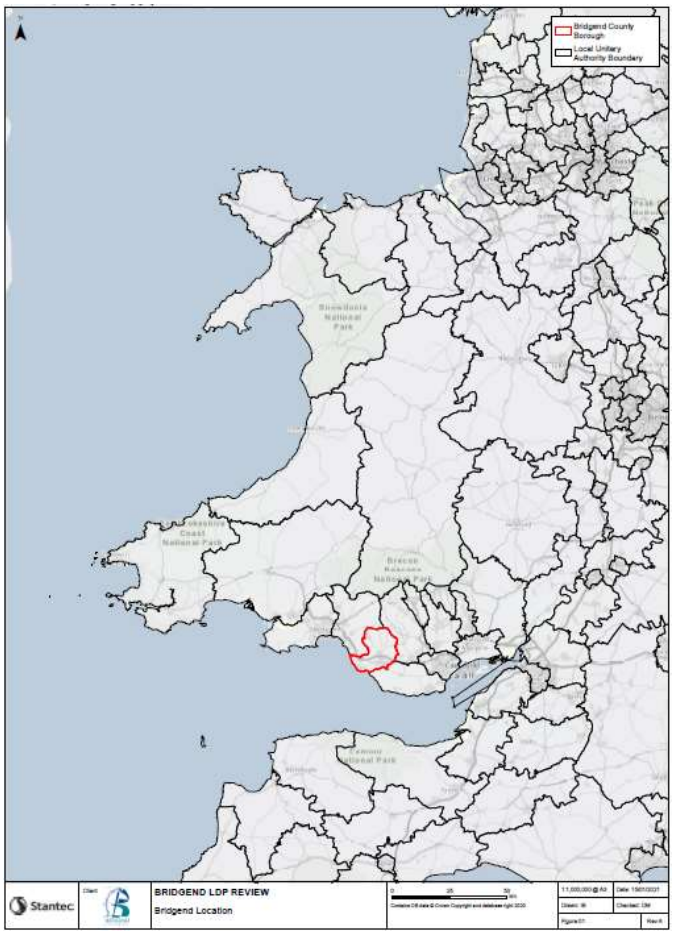
- **Section 2** explains the background to the development of the LDP Deposit Plan and provides a summary of its proposed content and purpose;
- **Section 3** provides an overview of the HRA process used during the assessment;
- **Section 4** identified the Relevant European Sites which have been previously identified for consideration within the HRA process;
- **Section 5** presents the key findings of the HRA undertaken in respect of the Bridgend LDP Deposit Plan;
- **Section 6** presents the key findings of the assessment of in-combination effects;
- **Section 7** presents the conclusions of the HRA of the Bridgend LDP Deposit Plan.

2 Overview of the Bridgend LDP Review

2.1 Context

2.1.1 In accordance with the Planning and Compulsory Purchase Act 2004 ('the 2004 Act'), BCBC adopted the first LDP for its administrative area (shown in **Plate 2.1**) in September 2013.

Plate 2.1: The Bridgend County Borough Council Area



2.1.2 BCBC has undertaken regular monitoring since 2013 and in 2018 prepared a LDP Review Report which concluded the LDP should be subject to a 'Full Review', to be carried out in accordance with the Town and Country Planning (Local Development Plan) (Wales) Regulations 2005 as amended ('the 2005 LDP Regulations'). This review ('the LDP Review') is needed to allow BCBC to prepare and adopt a replacement LDP to ensure the statutory Development Plan for the BCBC area remains relevant and up to date. In particular, a replacement LDP is needed to take account of new Acts, policy frameworks, initiatives, evidence and spatial issues at national, regional and local levels since the adoption of the current LDP.

2.1.3 In Spring 2018 BCBC consulted on a draft Delivery Agreement to underpin the LDP Review and the finalised Bridgend Replacement LDP Delivery Agreement was subsequently agreed with the Welsh Assembly Government on 25th June 2018. This set out the process, timescales and consultation arrangements planned to undertake a 'Full Review' of the existing LDP and in doing so to prepare and adopt a replacement LDP. **Section 1.4** of the Delivery Agreement outlined the proposed approach to undertaking a SA, incorporating SEA, of the LDP Review in accordance with relevant statutory requirements.

2.1.4 A revised Delivery Agreement was agreed between BCBC and the Welsh Government in October 2020 to reflect exceptional circumstances surrounding the COVID-19 pandemic, which has delayed preparation of and consultation on the Deposit Plan which this SA Report accompanies. However, the revised Delivery Agreement does not alter the approach adopted to undertake the SA of the emerging RLDP.

2.1.5 In September 2020, the Welsh Government issued correspondence to all LPAs to clarify that LDP expiry provisions enacted through the Planning (Wales) Act (PWA) 2015 do not apply retrospectively to plans adopted before 20216. This confirms that the adopted 1st Bridgend LDP will remain in force until the emerging RLDP has completed all stages of preparation, examination and pre-adoption ministerial scrutiny, at which point it will become the new LDP applicable to the BCBC area.

2.2 Bridgend LDP Review Key Facts

2.2.1 This section provides a brief outline of the LDP Review, including its key facts, proposed form and expected content of the replacement LDP. This is to allow consultees to understand the scope and purpose of the replacement LDP which is being subject to HRA.

2.2.2 The key facts relating to the Bridgend LDP Review are detailed in **Table 2.1** below.

Table 2.1: Bridgend LDP Review Key Facts

Criteria	Details
Responsible Authority	Bridgend County Borough Council (BCBC)
HRA Assessor on behalf of the Responsible Authorities	Stantec
Plan Title	Bridgend LDP Review (resulting in the Bridgend Replacement LDP)
Expected Adoption Date	2022
What Prompted the Plan?	Planning legislation requires all local authorities to review and prepare local development plans (LDPs) for their areas.
Plan Subject:	The Bridgend LDP Review will result in the preparation and adoption of a replacement LDP for the BCBC area. This will set out new detailed planning policies and proposals for the future development and the use of all land. The replacement LDP will set a long term strategic planning framework, helping to tackle the key sustainability and regeneration issues and realise the main development opportunities across the BCBC area. It will cover a wide range of topics, including housing land, economic development, regeneration, sustainable design, renewable energy, town centres, tourism, infrastructure provision, transport etc.
Period covered by the Plan	Expected date of adoption: 2022 15 year plan period: 2018 - 2033.

2.3 Proposed Form and Content of the Bridgend Replacement LDP

2.3.1 The Deposit Plan builds upon the LDP Preferred Strategy, which was consulted on by BCBC at 'Pre-Deposit stage' between 30th September 2019 - 8th November 2019 in accordance with Regulation 15 of the DP Regulations (2005). In doing so, the Deposit Plan updates the strategic

framework (including growth and spatial strategy) presented at Pre-Deposit stage and sets out a full suite of evidence-based policies and allocations to implement the strategic framework and guide development within the BCBC area over the period to 2033. In accordance with Regulations 17, 18, and 19 the Deposit Plan therefore represents a full proposed LDP which BCBC considers to be sound and adoptable as a RLDP for the BCBC area.

2.3.2 The Deposit Plan comprises the following substantive components, accompanied by non-substantive supporting text and graphics:

- Strategic Framework:
  - LDP Vision;
  - Strategic Objectives; and,
  - Growth and Spatial Strategy as summarised in:
    - Strategic Policy (SP) 1: Regeneration and Sustainable Growth Strategy; and,
    - SP2: Regeneration Growth Area and Sustainable Growth Area Strategic Allocations.
- Implementation & Delivery:
  - Topic Based Strategic Policies (SP3 – SP18);
  - Thematic Policies (PLA6 – 12, COM1 – 14, ENT1 – 18, DNP1 –11); and,
  - Site Allocations & Infrastructure (formally identified through above policy framework):
    - Strategic Sites (SP2, SP11 and PLA1 – 5)
    - Non-Strategic Sites (SP6-7, COM1, ENT1, SP12, ENT6, ENT9)
    - Transport & Community Infrastructure Proposals (PLA8 and COM11-13)
    - Special Landscape Areas (DNP4)

2.3.3 These substantive components have been subject to HRA as documented in this HRA Report. The Deposit Plan also includes a reasoned justification for the inclusion of each substantive component and is supported by a suite of evidence base documents, all of which will inform the HRA process where relevant.

2.4 Preparation and Evidence Base

2.4.1 Since the adoption of the finalised Bridgend LDP Review Delivery Agreement in 2018, the development of the emerging RLDP has focused on evidence gathering and early stakeholder engagement, including:

- SEA Screening, Initial HRA Screening and SA Scoping: July – August 2018;
- Call for Candidate Sites: September – November 2018;
- Evidence Gathering including preparation of background papers and specialist evidence: ongoing since September 2018; and,
- The Preferred Strategy, which was consulted on between 30th September 2019 and 8th November 2019.

2.4.2 These activities have informed the preparation of the LDP Deposit Plan and this HRA report by identifying key issues, problems and opportunities which the emerging RLDP should address. All comments received in respect of the Bridgend RLDP Scoping Report (2018) and all evidence submitted to the Call for Candidate Sites and the LDP Preferred Strategy have been taken account of in the preparation of this HRA Report.

3 Methodology

3.1 Introduction

3.1.1 This section of the report outlines the methodology adopted to undertake a proportionate screening of the Bridgend LDP Deposit Plan in order to identify any likely significant effects (LSE) on relevant European Sites. This report has been prepared with reference to:

- The Habitats Regulations Assessment Handbook (DTA Publications Ltd available online at www.dtapublications.co.uk). The handbook provides a regularly updated source of guidance on the understanding and interpretation of the Habitats Regulations and consistency in applying the requirements of the legislation; and,
- Technical Advice Note 5 (TAN5): Nature Conservation and Planning. Welsh Assembly Government (2009).
- Development Plans Manual, Edition 3 (Consultation Draft). Welsh Government (2019).

3.1 Statutory Requirements

3.1.1 Part 6 of the Conservation of Habitats and Species Regulations 2017 (as amended)[2] (hereafter referred to as the "Habitats Regulations") covers the assessment of plans and projects and it sets out the requirement that the authority preparing a land-use plan must assess the potential effects of the plan upon European Sites prior to the plan being published.

3.1.2 In accordance with Regulation 63 of the Habitat Regulations, before deciding to authorise an emerging plan or project a competent authority is required to assess whether this would have a 'likely significant effect' (LSE) on any European Sites, namely:

- Special Areas of Conservation (SAC) designated under European Council Directive 92/43/EEC(a) on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) (European Commission, 1992); and,
- Special Protection Areas (SPA) designated under the European Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) (European Commission, 2009).

3.1.3 As a matter of policy, the Welsh Assembly Government expects competent authorities in Wales to treat all Ramsar sites, Potential SPAs (pSPAs), and Candidate Special Areas of Conservation (cSACs) as though they were statutory European Sites, and they should be treated as such in HRA[3]. The term 'European Sites' is therefore used in this report to collectively refer to SACs, SPAs, Ramsar sites, cSACs and pSPAs.

3.1.4 The assessment of LSE follows a staged process known as Habitats Regulations Assessment (HRA). BCBC is the relevant competent authority for plans and projects within their administrative area when they act as the decision maker, including for the adoption of LDPs and the determination of planning applications. The LDP Deposit Plan is a relevant emerging plan for the purposes of the Habitat Regulations as it will result in the adoption of a replacement LDP for the BCBC area and has the potential to result in LSE on the integrity of relevant European Sites. The LDP Deposit Plan must therefore be subject to an HRA which will supersede that produced in 2013.

[2] Most recently amended through the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019 which came into force on 31 December 2020.

[3] Welsh Assembly Government (2009). Technical Advice Note 5: Nature Conservation and Planning.

3.2 The HRA Process

3.2.1 The standard approach to HRA comprises four-stages (illustrated in **Figure 3.1** below) and emphases the iterative nature of the process. The term 'Habitats Regulations Assessment' is used to describe the whole process of assessing the effects of a land use plan on European Sites and Ramsar sites, with Appropriate Assessment (Stage 2) being only one stage of process. In accordance with statutory requirements, all relevant stages of the process must be completed prior to a competent authority (e.g. BCBC) adopting a relevant plan.

Plate 3.1: HRA Process

Stage 1: Screening

3.2.2 In the context of preparing a RLDP, HRA screening involves identifying the European sites which could potentially be affected by the emerging document, determining their qualifying interests, and determining whether or not the RLDP could result in a LSE, either alone or in combination with other plans and projects. This requires consideration of:

i. All substantive aspects of the emerging RLDP, alone and in combination with other proposals;

ii. The qualifying interest features and conservation objectives of relevant European Sites; and,

iii. Best available scientific evidence on potential impact pathways and significance.

3.2.3 The following resources were used to collate pertinent baseline information regarding relevant European Sites:

- Joint Nature Conservation Committee (JNCC) website (www.jncc.gov.uk): citations for SACs, SPAs, and Ramsar sites; detailed information about interest features;
- NRW website (www.naturalresources.wales): condition assessments for component SSSIs; potentially damaging operations for component SSSIs; and
- MAGIC Website (www.magic.gov.uk): boundary maps for SACs, SPAs and Ramsar sites.

3.2.4 Recent caselaw (see **Section 2.3** below) has confirmed mitigation cannot be taken account of in Stage 1, meaning that screening must examine the likely effects of the emerging Bridgend RLDP, without any additional mitigation being taken account of (e.g. potential mitigation requirements for site allocations, changes to policies, etc).

3.2.5 The *Bridgend LDP Review: Initial HRA Screening Report* (PBA, 2018), which was consulted on with Natural Resources Wales in July 2019, identified relevant European Sites with the potential to be affected by the emerging Bridgend RLDP.

3.2.6 Following this, HRA Screening was undertaken of Pre-Deposit stage proposals the results of which are set out in *Bridgend LDP Review: LDP Pre-Deposit Documents (LDP Preferred Strategy) Habitats Regulations Assessment Screening Report* (PBA, 2019).

Consultation

3.2.7 Following submission of the *Habitats Regulations Assessment Screening Report* (PBA, 2019) to Natural Resources Wales, a written response was received on 6 November 2019. All points in relation to the HRA are set out in Table X below, along with responses.

Table 3.1 Review of consultation comments received from NRW

Comments received from NRW	BCBC response
We acknowledge that the HRA is an ongoing assessment at this stage and that further work will be undertaken as more detail is available. The HRA for site specific allocations will be carried out as part of the drawing up of the Deposit LDP	Noted. Further assessment work is set out within this HRA report.
We recommend further dialogue as it progresses to ensure the final HRA is fit for purpose.	NRW will be consulted in full on this HRA report.
Section 2.3.7: The last sentence of this paragraph is not clear. We suggest it states both mitigation and compensation are not relative considerations at the screening stage as provided by existing caselaw.	The HRA Screening Report made clear that, in accordance with caselaw, neither mitigation nor compensation was taken account of at screening stage.
We can confirm that all relevant sites have been identified within section 3.1.4, 3.1.5 and 3.1.16.	Noted and welcomed.
We agree with the threats and pressures identified for the European sites within Section 3.2. However, we would also include climate change as a key issue for the river designations due to the impact on flows.	Noted. Although the River Wye SAC and River Usk SAC were scoped out of further assessment within the HRA Screening Report.
We would include potential for pollution to surface waters for Cefn Cribwr Grasslands Special Area of Conservation (SAC) in section 3.3.1.	The potential for pollution to surface waters for Cefn Cribwr Grasslands SAC has been assessed within this HRA report.
Reference should be made to enhancing ecology in section 4.3.3.	Noted. Reference is made within this report to policies which promote ecological enhancements, and how they contribute to the protection of European Sites.
Species such as Marsh fritillary are mobile qualifying features for certain sites, so consideration of species disruption is required. As mobile species they rely on connectivity and porosity within the landscape to protect the meta-population.	The potential for effects to Cefn Cribwr Grasslands SAC from disruption has been assessed within this HRA report.
Consideration also needs to be given to cumulative impacts including any plans or proposals within neighbouring authorities that might act in-combination.	This HRA report includes assessment of the Bridgend LDP Deposit Plan in-combination with LDPs from neighbouring Local Authorities.
We note that Candidate Site reference 182.C1 Danygraig Avenue (Land East of) shares its southern boundary with that of the Kenfig/Cynffig SAC.	Danygraing Avenue (Land East of) was removed and no longer forms part of the Bridgend LDP Deposit Plan.

Stage 2: Appropriate Assessment

3.2.8 Where LSE have been identified during the Screening Stage on the basis of objective information, an assessment of whether there would be an adverse effect on the integrity of relevant European Sites (i.e. those experiencing LSE), and the consideration of measures to address this effect, has been undertaken and is presented within this report.

3.2.9 The purpose of the appropriate assessment is to establish whether the Deposit Plan, by itself or in combination with other plans and projects, will adversely affect the conservation objectives of the qualifying features of the identified European Sites, based on best scientific knowledge. This has involved testing whether the Deposit Plan, by itself or in combination with other plans and projects, will affect the environmental factors needed to maintain site integrity.

3.2.10 Site integrity is taken to mean (Technical Advice Note 5, Annex 3, paragraph 19):

> *"The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations for which it was classified or listed."*

3.2.11 This has allowed all substantive components of the Deposit Plan including site allocations, infrastructure proposals and policies, to be assessed, and all relevant mitigation measures incorporated within the Deposit Plan to be taken account of when determining whether the Deposit Plan would have an adverse effect on relevant European Sites.

3.2.12 During the HRA process, results of the assessment have been used to address any identified likely significant effects at an early stage, address any identified uncertainties in policy wording, and to enhance the effectiveness of Deposit Plan policies in terms of avoiding likely significant effects.

3.2.13 The results of the Stage 2 Appropriate Assessment are set out in detail within **Section 5 – Section 7** of this report.

3.2.14 Only if and when it is not possible to identify suitable measures to address identified effects (i.e. to demonstrate the avoidance of adverse effects) would consideration of Stages 3 and 4 be required.

Stage 3: Assessment of Alternatives

3.2.15 The assessment should identify and assess alternatives that have been considered. Alternative solutions could include a project of a different scale, a different location, and an option of not having the scheme at all (the 'do nothing' approach).

Stage 4: Consideration of IROPI

3.2.16 Where it can be demonstrated that there are no alternative solutions to the plan that would have a lesser effect or avoid an adverse effect on the integrity of the European site, it may still be adopted out if the competent authority is satisfied that the scheme must be carried out for imperative reasons of overriding public interest (IROPI).

3.3 Recent Case Law

3.3.1 This subsection provides a review of recent HRA caselaw related to the interpretation of Article 6 of the Habitats Directive which needs to be followed in undertaking a HRA of the emerging Bridgend RLDP.

People over Wind & Sweetman- Case C323/17

3.3.2 People over Wind & Sweetman (2018) as a reference by the Irish High Court for a preliminary ruling on the interpretation of Article 6(3) of the Habitats Directive. The case concerned the laying of a cable to connect a wind farm to the electricity grid and the potential effect of undertaking this work on two European Sites (Special Areas of Conservation) which the cable route passed through. The competent authority initiated an HRA of the project but concluded at Stage 1 that, taking account of "protective measures" including a Construction Environmental Management Plan, no significant effects were likely. On this basis an Appropriate Assessment (HRA Stage 2) was not carried out prior to planning permission being granted.

3.3.3 The key question for the Court of Justice of the European Union (CJEU) was whether it was competent in initial HRA Screening to take account of proposed protective (i.e. mitigation) measures intended to avoid or reduce a project's harmful effects on a European Site. The CJEU held this was not possible, as in accordance with Article 6(3) of the Habitats Directive, when determining whether it is necessary to carry out an Appropriate Assessment "it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site". The main concern of the CJEU was that the identification of the need for mitigation itself suggested the project would otherwise significantly affect the SPA, such that the HRA process should have proceeded to Appropriate Assessment to allow the adequacy of proposed mitigation measures to be considered in full.

3.3.4 The main implication of People over Wind & Sweetman for the Bridgend LDP Deposit Plan is that potential LSE from development plans cannot screened out at Stage 1 based on the presence of mitigation measures, i.e. components intended to mitigate such effects that may otherwise occur from the plan. Plans therefore need to be structured to allow their core objectives and associated components (which could include site, land use and design selection) to be distinguished from any specific environmental mitigation measures considered necessary to avoid LSE from the implementation of the projects. This is required to allow a clear-cut HRA Screening to be carried out, without reliance on specific mitigation measures that, if needed to avoid LSE, would necessitate the need for an Appropriate Assessment to be undertaken.

Grace & Sweetman

3.3.5 Grace & Sweetman (2018) was similarly a reference by the Irish High Court for a preliminary ruling on the interpretation of Article 6 of the Habitats Directive. The case concerned a proposed wind farm in a SPA for the hen harrier, an Annex I species. The development involved the direct loss of habitat but included a species and habitat management plan intended to address the potential effects on the hen harrier's foraging habitat. The plan included measures to restore areas to blanket bog and to fell and replace different forest areas through the life of the development.

3.3.6 The case centred on the decision of the relevant competent authority to conclude that the development would not adversely affect the integrity of the SPA, which was challenged on the basis that the development and its related management plan entailed compensatory measures. Article 6(3) of the Habitats Directive makes clear that the Appropriate Assessment stage of the HRA process can only consider mitigation to avoid adverse effects on the integrity of a European Site, not compensation falling under Article 6(4) of the Directive. The question was therefore whether the proposed management plan fell within the scope of Article 6(3) as mitigation rather than compensation. Consistent with previous caselaw, the CJEU determined that the proposed management plan amounted to compensation rather than mitigation measures and thus could not be used in the Appropriate Assessment stage of the HRA process to conclude no adverse effects on the integrity of the European Site. In consequence, it would have been necessary for the project to proceed through and satisfy Stages 3 and 4 of the HRA process.

3.3.7 The key implication of Grace & Sweetman for the Bridgend LDP Deposit Plan is that compensation and the offsetting of LSE cannot be relied upon in isolation to successfully navigate the HRA process. In consequence, whilst habitat enhancement could form part of the approach to protecting European Sites, any development must also be supported by appropriate mitigation measures to minimise (and where possible avoid) LSE on the integrity of the European Site.

The Dutch Case[4]

3.3.8 The European Court of Justice determined a case related to considering water quality in Appropriate Assessments. This generally referred to as 'The Dutch Case'. The judgement refines the definition of plans and projects and effectively includes significantly more operations within the definition which have an impact on water quality.

3.3.9 As a result, it can only be concluded that new development could increase nitrogen and phosphate deposition into waterbodies downstream of a development, resulting in increased nutrients which can result in likely significant effects to designated habitats and species downstream. As a result, the only way that a new development can prevent this likely significant effect is for there to be no increase in nutrients into waterbodies, i.e. to be 'nutrient neutral'.

3.3.10 The key implication of The Dutch Case for the Bridgend LDP Deposit Plan is that development which has potential to increase nutrient deposition to European sites, will need to demonstrate nutrient neutrality resulting in no LSE on the integrity of the European site.

[4] Cooperatie Mobilisation for the Environment UA and College van gedeputeerde staten van Noord-Brabant (Case C293/17 and C294/17)

4 Relevant European Sites for Assessment

4.1 Identification Process

4.1.1 The initial step in the HRA process was to identify and agree a list of European Sites to take forward in consideration of the potential for LSE to arise as a result of the LDP Review. This includes European Sites within the Bridgend County Borough Council area (the BCBC area) and others located outwith this, but within the surrounding zone of influence which could be affected by the LDP Review. This is set out in full within *Bridgend LDP Review: Initial HRA Screening Report* (PBA, 2018).

4.1.2 The identification of European Sites was based on the likely impacts of the LDP review and the presence of conceivable effect pathways between the BCBC area and the European Sites, which could expose the qualifying features of the Sites to significant effects. Whilst the LDP review can only influence planning strategy or development within the boundary of the BCBC area, there may be trans-boundary effects as a result of its implementation. In consideration of this, a 15km buffer area (zone of influence) was used around the BCBC area, to identify those European Sites that could conceivably be affected by the LDP review.

4.1.3 Twelve European Sites (11 SACs and 1 Ramsar site) were identified to take forward for HRA Stage 1. Three of these sites are within the BCBC area, seven are within 15 km of the BCBC boundary and two are over 15 km from the BCBC boundary. These are the same sites that were considered previously within the HRA carried out in respect of the first Bridgend LDP (adopted September 2013). European Sites taken through HRA Stage 1 are set out below and shown on **Figure 2**.

4.1.4 European Sites identified within the BCBC area:

- Blackmill Woodlands SAC;
- Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands SAC; and,
- Kenfig / Cynffig SAC.

4.1.5 European Sites within 15 km of the BCBC area:

- Dunraven Bay SAC;
- Blaen Cynon SAC;
- Cardiff Beech Woods SAC;
- Coedydd Nedd a Mellte SAC;
- Crymlyn Bog / Cors Crymlyn SAC;
- Crymlyn Bog Ramsar site; and,
- Cwm Cadlan SAC.

4.1.6 European Sites over 15 km of the BCBC area:

- River Wye/Afon Gwy SAC; and,
- River Usk/Afon Wysg SAC.

4.2 Summary of Stage 1 HRA Screening Report

4.2.1 The HRA Screening Report presented the findings of a HRA screening carried out to identify any 'likely significant effects' (LSE) arising from the Bridgend LDP Pre-Deposit Documents published in accordance with Regulation 15 of the Development Planning (Wales) Regulations 2005, including the Bridgend LDP Preferred Strategy ('the LDP Preferred Strategy'). The report documented the first formal stage of the HRA process.

4.2.2 The HRA Screening Report considered that there is potential for LSE on three of the identified European Sites within the BCBC area, on account of potential development within proposed Sustainable Growth and Strategic Regeneration Growth Areas under Strategic Policy 1. Allocation of individual sites (whether new candidate sites or LDP rollover sites) in these locations, and their subsequent development, could generate LSE to the European Sites through the following impact pathways:

- Blackmill Woodlands SAC – air quality;
- Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands SAC – habitat loss, air quality, human induced changes in hydraulic conditions, pollution to surface waters[5], disruption to marsh fritillary through loss of porosity and connectivity within the landscape[3]; and,
- Kenfig / Cynffig SAC - habitat loss, air quality, human induced changes in hydraulic conditions, pollution, recreation.

4.2.3 No LSE on the vulnerabilities of European Sites outwith the BCBC administrative area were identified, either alone or in combination.

4.2.4 The HRA Screening Report did not definitively identify LSE from Strategic Policies 2 – 17 which formed the implementation section of the LDP Preferred Strategy. However, SP6 and SP11 were identified at this stage as having at least the potential for LSE on European Sites, as these strategic policies identify targets for housing and employment growth and direct development to broad locations.

4.2.5 Reflecting the requirements of the Habitat Regulations, the HRA process is iterative. Owing to the identification of a limited number of potential LSE on European Sites and the need to take account of mitigation measures (including relevant provisions within Policy SP17), in accordance with caselaw the HRA Screening Report concluded that the process must proceed to Stage 2 – Appropriate Assessment.

4.2.6 The HRA Screening Report also concluded that an updated review of other relevant plans or projects should be carried out to review whether there is the potential for any LSE from the emerging Bridgend RLDP "in combination" with other relevant plans and projects.

4.3 Overview of Threats and Pressures to Relevant European Sites

4.3.1 The relevant European Sites considered in this HRA with details of their characteristics, condition and current threats and pressures to their conservation objectives detailed in **Table 4.1** below. Core Management Plans including Conservation Objectives for each site are provided in **Appendix A-C**.

[5] Added following consultation with NRW

Table 4.1: Details of Relevant European Sites and Potential Impact Pathways

European Site Name and Code	Qualifying Features	Threats and Pressures	European Site Name and Code
Blackmill Woodlands SAC (UK0030090)	Old sessile oak woodlands at the southern extreme of the habitat's range in Wales.	• Grazing • Forestry activities • Air pollution, air-borne pollutants • Invasive non-native species • Problematic native species.	Unfavourable. Largely due to overgrazing and woodland management.
Glaswelltiroedd Cefn Cribwr / Cefn Cribwr Grasslands SAC (UK0030113)	Fen-meadow (Molinia) grasslands, and marsh fritillary butterfly.	• Grazing • Succession • Air pollution, air-borne pollutants • Other ecosystem modifications • Invasive non-native species • Forestry activities • Human induced changes in hydraulic conditions	Unfavourable. Largely due to land management.
Kenfig / Cynffig SAC (UK0012566)	An assemblage of coastal habitats including sand dune systems, shallow lakes, and salt marsh along with two species of plant, the fen orchid and petalwort.	• Changes in abiotic conditions • Other ecosystem modifications	Unfavourable. Largely due to land management.

European Site Name and Code	Qualifying Features	Threats and Pressures	European Site Name and Code
		• Abiotic (slow) natural processes • Fishing and harvesting aquatic resources • Human induced changes in hydraulic conditions • Grazing • Pollution to surface waters • Hunting • Problematic native species • Mowing / cutting of grassland • Soil pollution and solid waste • Use of biocides, hormones and chemicals • Outdoor sports and leisure activities, recreational activities • Air pollution, air-borne pollutants • Succession • Invasive non-native species	

5 Blackmill Woodland SAC – Appropriate Assessment

5.1 Summary of LSE identified at HRA Screening Stage

5.1.1 The HRA Screening Report identified the Preferred Strategy had the potential for LSE to the Blackmill Woodland SAC from air quality issues arising from residential development and increased numbers of motor vehicle journeys and associated emissions, and from industrial emissions. The proposals identified as having the potential for LSE are linked to SP1: Regeneration and Sustainable Growth, and SP2: Regeneration Growth Area and Sustainable Growth Area Strategic Allocations which set out the plan for growth during the plan period.

5.1.2 SP6 - Sustainable Housing Strategy and SP11 - Employment Land Strategy were identified within the HRA Screening Report as having at least the potential for LSE on European Sites. These strategic policies identify targets for housing and employment growth and direct development to broad locations including identified Sustainable Growth Areas, Strategic Regeneration Growth Areas and existing employment sites.

5.1.3 All other strategic policies were reviewed within the HRA Screening Report and were considered to have no LSE on European Sites. This is because the policies themselves would not directly lead to development or otherwise create potential impact pathways to European Sites. In addition, many of the strategic policies set out key principles, which whilst not specifically 'mitigation' in respect of European Sites, are intended to afford appropriate protection to the natural environment and amenity. This includes policy criteria which seek to:

- Reduce car dependencies and improve active travel infrastructure;
- Protect and enhance access to high quality outdoor sports facilities, parks and open spaces;
- Promote the efficient use of resources, including moving towards a low carbon economy, use of waste as a resource, energy efficient buildings, and appropriate renewable and low carbon energy;
- Take measures to protect air quality levels and aim to mitigate any activity which could affect air quality levels;
- Give consideration to development impacts on water, including water quality, ecosystems, sustainable use of water, capacity of sewerage, flood risk and the opportunities to improve flood risk management;
- Seek ways to maximise multi-functional green infrastructure coverage and ensure they provide a network of linked wildlife corridors (across a wide range of scales and increase ecosystems services including biodiversity);
- Seek ways to maximise the health benefits of green infrastructure;
- Use land efficiently by prioritising the use of previously developed land;
- Promote development that minimises adverse impacts on landscape character.

5.1.4 Further appropriate assessment of the identified likely significant effect on the integrity of the SAC is set out below.

5.2 Site Details and Summary of Conservation Objectives

5.2.1 Blackmill Woodland SAC is 71.01 hectares in size and located wholly within Bridgend County Borough Council. It is designated for the presence of old sessile oak woods at the southern extreme of the habitat's range in Wales.

5.2.2 The Conservation Objectives require that 'the feature (old sessile oak woods) be in a favourable conservation status, where all of the conditions set out in the Performance Indicators table are satisfied, and all factors affecting the achievement of these conditions are under control.'

5.2.3 Performance indicators related to the attributes of the feature include: extent, canopy composition, canopy cover and regeneration, ground flora condition/quality indicators, veteran tree density, and dead wood.

5.2.4 Performance indicators for factors affecting the feature include: livestock grazing, non-native species, and air pollution.

5.2.5 The Conservation Objectives are set out in full in **Appendix B**.

5.3 Appropriate Assessment

5.3.1 The assessment below sets out the elements of the LDP Deposit Plan which have been identified as having potential to cause likely significant effects (LSE) to Blackmill Woodland SAC. Only those elements of the LDP Deposit Plan which have potential for LSE are included. The assessment subsequently includes a determination of whether those effects identified are likely to result in an effect on the integrity of the European Site – i.e. Appropriate Assessment. Reasoned justification is provided, with reference to policy wording and any other supporting documentation.

5.3.2 Those elements of the LDP Deposit Plan not discussed below are considered to not have the potential for LSE as the policy (or supporting text) to which they relate has already been identified as unlikely to cause LSE within the HRA Screening Report, and any change to the wording does not link to any of the potential impact pathways for the European Sites under consideration. Therefore, there is no need to re-screen the modified policy, or supporting text, back into the HRA.

Air quality

5.3.3 The LDP Deposit Plan has the potential to increase atmospheric pollution which will predominantly arise from an increase in traffic associated with the projected population growth over the life of the plan, or through industrial emissions. Atmospheric pollution could affect the habitat (old sessile oak woods) which comprise the qualifying feature of Blackmill Woodland SAC, through altering the biochemistry of the plants or fungi, or through stimulating the growth of competitive plant species which can reduce species diversity within a habitat.

5.3.4 Data from the Air Pollution Information System (APIS) website[6] indicates that the current nitrogen and acidity critical loads at the SAC are exceeded. However, it should be noted that the largest contributions are from farming, international shipping and deposition imported from Europe (e.g. for nitrogen, road travel contributes 7% across the site as a whole, as opposed to 24% imported from Europe, and 31% from livestock (APIS, 2020)).

5.3.5 Air quality modelling for the UK undertaken by the JNCC[7], predicts a substantial decrease in impacts on sensitive vegetation by 2030 under the most likely future baseline, with some pollutants such as nitrogen seeing reductions in deposition across the UK of 18.9%. Therefore,

[6] www.apis.ac.uk (accessed 18/12/20)

[7] Nitrogen Futures. JNCC Report No. 665. JNCC, Peterborough, ISSN 0963-8091.

it is likely in the absence of further development, air quality is likely to improve within the period of the Deposit Plan.

5.3.6 In relation to the impact of emissions on ecological receptors from development, an impact of less than 1% of the critical level or load is accepted to be a pragmatic threshold for determining no likely significant effects[8]. It should be noted that an impact of more than 1% is not, per se, an indication that a significant effect exists, only the possibility of one which could trigger the need for further, more detailed assessment of the ecological sensitivity and value of the habitat. This is supported by CIEEM's Advisory Note[9] which states '*Screening thresholds are a tool to indicate when further assessment is required and should be informed by all available information'*.

5.3.7 Proposals in the LDP Deposit Plan which could give rise to increased levels of atmospheric pollution with potential for subsequent effects to the SAC include residential development and associated increased numbers of motor vehicle journeys and associated emissions, and from industrial emissions. Whilst there are few allocations in close proximity to the SAC, effects from traffic related to new residential development can be felt many kilometres away.

5.3.8 The A4061 passes between the two parts of the designated site. This is the main route linking the Ogmore Valleys with the M4 and 'Valleys Gateway' area, passing though the villages of Blackmill, Bryncethin and Sarn. The road also links to Gilfach Gôch and the villages of Rhonnda Cynon Taff. Therefore, development in these locations may give rise to specific local impacts from an increase in road travel.

5.3.9 The Core Management Plan discusses the impact of air pollution from in-combination effects of NRW permitted licences, rather than road travel. Therefore, the potential of new industrial development to have cumulative air quality impacts needs to be considered.

Mitigation

5.3.10 The following policies within the LDP Deposit Plan will mitigate potential effects to the SAC either through protection of the site through development management, or through encouraging improvements in air quality.

SP17 – Conservation and Enhancement of the Natural Environment states that:

"Proposals likely to have direct or indirect adverse effects on Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites, must be subject to a HRA. This includes development proposals on allocated sites where this plan indicates a project level HRA is required and any other development proposals likely to have adverse effects on SACs/SPAs/Ramsar sites.

5.3.11 Development requiring HRA will only be allowed where it can be determined through HRA that:

- *taking into account mitigation, the proposal would not result in adverse effects on the integrity of the SACs/SPAs/Ramsar sites, either alone or in combination with other plans or projects, or*
- *HRA proves there are no alternatives and that the development is of overriding public interest and appropriate compensatory measures are provided"*

[8] Holman et al (2019). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.0, Institute of Air Quality Management, London. www.iaqm.co.uk/text/guidance/airquality-impacts-on-nature-sites-2019.pdf

[9] CIEEM (2021) Advice on Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

DNP9: Natural Resource Protection and Public Health states 'Development proposals will only be permitted where it can be demonstrated that they would not cause a new, or exacerbate an existing, unacceptable risk of harm to … biodiversity … due to..Air pollution'

Policy DNP8: Green Infrastructure promotes the 'protection and enhancement of existing natural assets that afford valuable ecosystem services and the creation of new multi-functional green infrastructure'. Green Infrastructure is a network of multifunctional green spaces, natural features and environmental management systems which help to provide a natural life support system for people and wildlife. Green infrastructure can provide benefits beyond its primary functions, including the improvement of local air quality.

SP4 Mitigating the Impact of Climate Change and **SP5: Sustainable Transport and Accessibility** promote low/zero carbon energy requirements, encourages the development of renewable low/zero carbon energy generation, and sustainable transport and access principles. These policies will encourage reduction in transport and a move away from fossil fuels, both of which may result in improvements in air quality.

Effects on the Integrity of European Sites

5.3.12 In light of the mitigation measures set out within the wording of policies, no Likely Significant Effects are anticipated from the LDP Deposit Plan through air pollution.

5.3.13 In addition, a number of policies in the Plan may result in improvements to air quality in the County Borough, in particular through enhancement to green infrastructure, and sustainable transport.

5.4 In-combination assessment

5.4.1 There is potential for in-combination effects to Blackmill Woodland SAC from emissions from traffic which may not be generated with the County Borough, but from adjacent Local Authority areas. To inform the assessment of in-combination effects, Local Development Plans and their associated HRAs for the three Local Authority areas adjoining BCBC has been undertaken. This includes:

- Vale of Glamorgan
- Rhonda Cynon Taff
- and Neath Port Talbot

Vale of Glamorgan

5.4.2 The *Vale of Glamorgan Deposit Local Development Plan Habitats Regulations Assessment (Appropriate Assessment) Report* (Enfusion, 2013) did not identify any likely significant effects to Blackmill Woodland SAC. Effects to European Sites from air quality were assessed within this HRA, although no likely significant effects were identified.

5.4.3 The Vale of Glamorgan Local Development Plan 2011-2026 (June 2017) includes Policy **Mg19 - Sites And Species Of European Importance** which states:

Development proposals likely to have a significant effect on a European site, when considered alone or in combination with other projects or plans will only be permitted where:

1. The proposal is directly connected with or necessary for the protection, enhancement and positive management of the site for conservation purpose; or

2. The proposal will not adversely affect the integrity of the site;

3. There is no alternative solution;

4. There are reasons of overriding public interest; and

5. Appropriate compensatory measures are secured.

5.4.4 As no LSE to Blackmill Woodlands SAC have been identified, and policy is in place to protect European Sites from developments which would adversely effect their integrity, no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

Rhonda Cynon Taf

5.4.5 The *Appropriate Assessment Of The Rhondda Cynon Taf County Borough Council's Local Development Plan* (2006-2021) (Enfusion, 2007) did not identify any likely significant effects to Blackmill Woodland SAC.

5.4.6 The Rhondda Cynon Taf Local Development Plan up to 2021 (Adopted March 2011) includes **Policy AW 8 - Protection And Enhancement Of The Natural Environment,** which states:

Development proposals will only be permitted where… . There would be no unacceptable impact upon features of importance to landscape or nature conservation, including ecological networks, the quality of natural resources such as air, water and soil, and the natural drainage of surface water.

5.4.7 As no LSE to Blackmill Woodlands SAC have been identified, and policy is in place to protect features of ecological importance (which it is assumed would include European Sites), no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

Neath Port Talbot

5.4.8 The *Neath Port Talbot Local Development Plan 2011-2026 Habitats Regulations Appraisal* (Neath Port Talbot, August 2013) concluded that the LDP is not likely to have a significant effect on any European site and that the Plan can proceed without further reference to the Habitats Regulations.

5.4.9 The *Neath Port Talbot CBC Local Development Plan 2011-2026* (Adopted January 2016) includes Policy **SP 15 Biodiversity and Geodiversity**, which states:

….any proposals that could have an adverse effect [on a European site] will not be permitted except under certain very limited and specific circumstances

5.4.10 As no LSE to Blackmill Woodlands SAC have been identified, and policy is in place to protect European Sites from developments which would adversely effect their integrity, no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

5.5 Conclusions

5.5.1 There is the potential for Proposals within the Bridgend LDP Deposit Plan to generate likely significant effects to the Blackmill Woodlands SAC, from air quality issues arising from residential development and increased numbers of motor vehicle journeys and associated emissions, and from industrial emissions.

5.5.2 This has been addressed by incorporating mitigation measures into the LDP to protect European sites and improve air quality. Taking into account the information available at this stage and the level of detail appropriate for LDP policies and proposals, it is concluded that the LDP is not likely to have a significant effect on Blackmill Woodlands SAC, either alone or in-combination with other plans or projects.

6 Cefn Cribwr Grasslands SAC – Appropriate Assessment

6.1.1 The HRA Screening Report, and subsequent consultation with NRW, identified the LDP Preferred Strategy had the potential for LSE to the Cefn Cribwr Grasslands SAC from:

- air quality – potential for impacts arising from residential development and increased numbers of motor vehicle journeys and associated emissions, and from industrial emissions
- habitat loss and disruption. Either direct loss from the SAC, or through loss of functionally linked habitats used by marsh fritillary butterflies, or through disruption to marsh fritillary through loss of porosity and connectivity within the landscape
- human induced changes in hydraulic conditions, or pollution to surface waters

6.1.2 The proposals identified as having the potential for LSE are linked to SP1: Regeneration and Sustainable Growth, and SP2: Regeneration Growth Area and Sustainable Growth Area Strategic Allocations which set out the plan for growth during the plan period.

6.1.3 SP6 - Sustainable Housing Strategy and SP11 - Employment Land Strategy were identified within the HRA Screening Report as having at least the potential for LSE on European Sites. These strategic policies identify targets for housing and employment growth and direct development to broad locations including identified Sustainable Growth Areas, Strategic Regeneration Growth Areas and existing employment sites.

6.1.4 All other strategic policies were reviewed within the HRA Screening Report and were considered to have no LSE on European Sites. This is because the policies themselves would not directly lead to development or otherwise create potential impact pathways to European Sites. In addition, many of the strategic policies set out key principles, which whilst not specifically 'mitigation' in respect of European Sites, are intended to afford appropriate protection to the natural environment and amenity. This includes policy criteria which seek to:

- Reduce car dependencies and improve active travel infrastructure;
- Protect and enhance access to high quality outdoor sports facilities, parks and open spaces;
- Promote the efficient use of resources, including moving towards a low carbon economy, use of waste as a resource, energy efficient buildings, and appropriate renewable and low carbon energy;
- Take measures to protect air quality levels and aim to mitigate any activity which could affect air quality levels;
- Give consideration to development impacts on water, including water quality, ecosystems, sustainable use of water, capacity of sewerage, flood risk and the opportunities to improve flood risk management;
- Seek ways to maximise multi-functional green infrastructure coverage and ensure they provide a network of linked wildlife corridors (across a wide range of scales and increase ecosystems services including biodiversity);
- Seek ways to maximise the health benefits of green infrastructure;
- Use land efficiently by prioritising the use of previously developed land;
- Promote development that minimises adverse impacts on landscape character.

6.1.5 Further appropriate assessment of the identified likely significant effect on the integrity of the SAC is set out below.

6.2 Site Details and Summary of Conservation Objectives

6.2.1 Cefn Cribwr Grasslands SAC is 58.35 hectares in size and located wholly within Bridgend County Borough Council. It is designated for the presence of Molinia meadows on calcareous, peaty or clayey-silt-laden soils, and the presence of the marsh fritillary butterfly.

6.2.2 The Conservation Objectives for Molinia meadows require that this feature be in a favourable conservation status, where a number of conditions are satisfied, including: the presence of this habitat over between 50% and 55% of the total site area, the ongoing presence of other semi-natural habitats, the presence or absence of certain desirable/undesirable species.

6.2.3 Performance indicators for factors affecting Molinia meadows include: livestock grazing, hydrological regime, adjacent land use.

6.2.4 The Conservation Objectives for marsh fritillary butterfly require that this feature be in a favourable conservation status, where a number of conditions are satisfied, including: supporting a sustainable metapopulation of the marsh fritillary in the Cefn Cribwr area, with minimum of 50ha of suitable habitat, of which at least 10ha must be in good condition. Not all is expected to be found within the SAC, some will be on nearby land within a radius of about 2km.

6.2.5 Performance indicators for factors affecting marsh fritillary butterfly include: extent and quality of the habitat, livestock grazing, shelter belts, hydrological regime, burning.

6.2.6 The SAC also has conservation objectives relating to the extent and condition of marshy grassland and neutral grassland, and for specific species including vipers grass, marsh fern, and bog myrtle.

6.2.7 The Conservation Objectives are set out in full in **Appendix B**.

6.3 Appropriate Assessment

6.3.1 The assessment below sets out the elements of the LDP Deposit Plan which have been identified as having potential to cause likely significant effects (LSE) to Cefn Cribwr Grasslands SAC. Only those elements of the LDP Deposit Plan which have potential for LSE are included. The assessment subsequently includes a determination of whether those effects identified are likely to result in an effect on the integrity of the European Site – i.e. Appropriate Assessment. Reasoned justification is provided, with reference to policy wording and any other supporting documentation.

6.3.2 Those elements of the LDP Deposit Plan not listed in the table below are considered to not have the potential for LSE as the policy (or supporting text) to which they relate has already been identified as unlikely to cause LSE within the HRA Screening Report, and any change to the wording does not link to any of the potential impact pathways for the European Sites under consideration. Therefore, there is no need to re-screen the modified policy, or supporting text, back into the HRA.

Air quality

6.3.3 The LDP Deposit Plan has the potential to increase atmospheric pollution which will predominantly arise from an increase in traffic associated with the projected population growth over the life of the plan, or through industrial emissions. Atmospheric pollution could affect the habitat (Molinia meadows), and subsequently the qualifying feature of marsh fritillary, through altering the biochemistry of plants or fungi, or through stimulating the growth of competitive plant species which can reduce species diversity within a habitat.

6.3.4 Data from the Air Pollution Information System (APIS) website indicates that the current nitrogen and acidity critical loads at the SAC are exceeded for some features. However, it should be noted that the largest contributions are from farming and deposition imported from Europe (e.g. for nitrogen, road travel contributes 11% across the site as a whole, as opposed to 23% imported from Europe, and 26% from livestock (APIS, 2020)).

6.3.5 Air quality modelling for the UK undertaken by the JNCC, predicts a substantial decrease in impacts on sensitive vegetation by 2030 under the most likely future baseline, with some pollutants such as nitrogen seeing reductions in deposition across the UK of 18.9%. Therefore, it is likely in the absence of further development, air quality is likely to improve within the period of the Deposit Plan.

6.3.6 In relation to the impact of emissions on ecological receptors from development, an impact of less than 1% of the critical level or load is accepted to be a pragmatic threshold for determining no likely significant effects (IAQM, 2019). It should be noted that an impact of more than 1% is not, per se, an indication that a significant effect exists, only the possibility of one which could trigger the need for further, more detailed assessment of the ecological sensitivity and value of the habitat. This is supported by CIEEM's Advisory Note (CIEEM, 2021) which states '*Screening thresholds are a tool to indicate when further assessment is required and should be informed by all available information*'.

6.3.7 Proposals in the LDP Deposit Plan which could give rise to increased levels of atmospheric pollution with potential for subsequent effects to the SAC include residential development and associated increased numbers of motor vehicle journeys and associated emissions, and from industrial emissions. Whilst there are few allocations in close proximity to the SAC, effects from traffic related to new residential development can be felt many kilometres away.

Habitat loss or species disruption

6.3.8 The HRA Screening Report identified that habitat loss could arise through direct loss from the SAC (candidate site 307.C1 included at that time contained a compartment of the SAC), or through loss of functionally linked habitats used by marsh fritillary butterflies. NRW also identified impacts could arise through disruption to marsh fritillary through loss of porosity and connectivity within the landscape.

6.3.9 Following the HRA Screening Report, site 307.C1 was removed and does not form part of the LDP Deposit Plan. However, a number of the preferred sites within the LDP Deposit Plan fall within 2km of the SAC, and have potential to support marsh fritillary meaning they could be functionally linked to the SAC. Development of sites which are functionally linked to the SAC could result in likely significant effects to the SAC.

6.3.10 Development of sites which lie between or in proximity to sites which do support marsh fritillary, even though they may not support marsh fritillary themselves, could result in likely significant effects to the SAC through disruption to the species when moving through the landscape.

Changes in hydrology or pollution to surface water

6.3.11 The HRA Screening Report identified the potential for LSE to Cefn Cribwr Grasslands SAC through changes in hydrology through land development which could impact hydrological regimes. The Conservation Objectives state that marshy grassland communities are strongly influenced by the quantity and base status of the groundwater. Reductions in the quality and quantity of the water in the springs and watercourses feeding the site may lead to a loss of marshy grassland or changes in species composition.

6.3.12 Development has the potential to disrupt the existing hydrological regimes altering the availability of water to the habitats within the SAC, or to affect the quality of ground water entering the site.

6.3.13 NRW also identified impacts could arise through pollution to surface water. This could arise during construction of developments which may be hydrologically linked to the SAC through ineffective silt management, or spills of fuel oils or chemicals.

6.4 Mitigation

6.4.1 The following policy within the LDP Deposit Plan will mitigate potential effects to the SAC from air quality, habitat loss, or changes in hydrology through protection of the site through development management.

SP17 – Conservation and Enhancement of the Natural Environment states that:

"Proposals likely to have direct or indirect adverse effects on Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites, must be subject to a HRA. This includes development proposals on allocated sites where this plan indicates a project level HRA is required and any other development proposals likely to have adverse effects on SACs/SPAs/Ramsar sites.

Development requiring HRA will only be allowed where it can be determined through HRA that:

- *taking into account mitigation, the proposal would not result in adverse effects on the integrity of the SACs/SPAs/Ramsar sites, either alone or in combination with other plans or projects, or*
- *HRA proves there are no alternatives and that the development is of overriding public interest and appropriate compensatory measures are provided*

Within 2km of Cefn Cribwr Grasslands SAC, as illustrated on the Policies Map, any proposals that could affect habitat of marsh fritillary butterfly should be subject to HRA.

6.4.2 In addition, the following policies within the LDP Deposit Plan will provide further protection and promote improvements in air quality:

- **DNP9: Natural Resource Protection and Public Health** requires development proposals to demonstrate that they would not cause a new, or exacerbate an existing, unacceptable risk of harm to biodiversity due to factors including air pollution or water pollution.
- **DNP8: Green Infrastructure** promotes the 'protection and enhancement of existing natural assets that afford valuable ecosystem services and the creation of new multi-functional green infrastructure'. Green Infrastructure is a network of multifunctional green spaces, natural features and environmental management systems which help to provide a natural life support system for people and wildlife. Green infrastructure can provide benefits beyond its primary functions, including the improvement of local air quality.
- **SP4 Mitigating the Impact of Climate Change** and **SP5: Sustainable Transport and Accessibility** promote low/zero carbon energy requirements, encourages the development of renewable low/zero carbon energy generation, and sustainable transport and access principles. These policies will encourage reduction in transport and a move away from fossil fuels, both of which may result in improvements in air quality.

Effects on the Integrity of European Sites

6.4.3 In light of the mitigation measures set out within the wording of policies, no Likely Significant Effects to Cefn Cribwr Grasslands SAC are anticipated from the LDP Deposit Plan through air pollution, habitat loss, or changes to hydrology.

6.4.4 In addition, a number of policies in the Plan may result in improvements to air quality in the County Borough, in particular through enhancement to green infrastructure, and sustainable transport.

6.5 In-combination assessment

6.5.1 There is potential for in-combination effects to Cefn Cribwr Grasslands SAC from emissions from traffic, loss of functionally linked habitat used by marsh fritillary butterfly, and human induced changes in hydraulic conditions which may not be generated with the County Borough, but from adjacent Local Authority areas. To inform the assessment of in-combination effects, Local Development Plans and their associated HRAs for the three Local Authority areas adjoining BCBC has been undertaken. This includes:

- Vale of Glamorgan
- Rhonda Cynon Taff
- Neath Port Talbot

Vale of Glamorgan

6.5.2 The Vale of Glamorgan Deposit Local Development Plan Habitats Regulations Assessment (Appropriate Assessment) Report (Enfusion, 2013) did not identify any likely significant effects to Cefn Cribwr Grasslands SAC.

6.5.3 The Vale of Glamorgan Local Development Plan 2011-2026 (June 2017) includes policy Mg19 - Sites And Species Of European Importance which states:

6.5.4 Development proposals likely to have a significant effect on a European site, when considered alone or in combination with other projects or plans will only be permitted where:

1. The proposal is directly connected with or necessary for the protection, enhancement and positive management of the site for conservation purpose; or

2. The proposal will not adversely affect the integrity of the site;

3. There is no alternative solution;

4. There are reasons of overriding public interest; and

5. Appropriate compensatory measures are secured.

6.5.5 As no LSE to Cefn Cribwr Grasslands SAC have been identified, and policy is in place to protect European Sites from developments which would adversely effect their integrity, no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

Rhonda Cynon Taf

6.5.6 The Appropriate Assessment Of The Rhondda Cynon Taf County Borough Council's Local Development Plan (2006-2021) (Enfusion, 2007) did not identify any likely significant effects to Cefn Cribwr Grasslands SAC.

6.5.7 The Rhondda Cynon Taf Local Development Plan up to 2021 (Adopted March 2011) includes Policy AW 8 - Protection And Enhancement Of The Natural Environment, which states:

Development proposals will only be permitted where… . There would be no unacceptable impact upon features of importance to landscape or nature conservation, including ecological

networks, the quality of natural resources such as air, water and soil, and the natural drainage of surface water.

6.5.8 As no LSE to Cefn Cribwr Grasslands SAC have been identified, and policy is in place to protect features of ecological importance (which it is assumed would include European Sites), no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

Neath Port Talbot

6.5.9 The Neath Port Talbot Local Development Plan 2011-2026 Habitats Regulations Appraisal (Neath Port Talbot, August 2013) concluded that the LDP is not likely to have a significant effect on Cefn Cribwr Grasslands SAC and that the Plan can proceed without further reference to the Habitats Regulations.

6.5.10 The Neath Port Talbot CBC Local Development Plan 2011-2026 (Adopted January 2016) includes Policy SP 15 Biodiversity and Geodiversity, which states:

….any proposals that could have an adverse effect [on a European site] will not be permitted except under certain very limited and specific circumstances

6.5.11 As no LSE to Cefn Cribwr Grasslands SAC have been identified, and policy is in place to protect European Sites from developments which would adversely effect their integrity, no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

6.6 Conclusions

6.6.1 This HRA has identified the Proposals within the Bridgend LDP Deposit Plan have potential to generate likely significant effects to Cefn Cribwr Grasslands SAC from:

- air quality
- habitat loss or disruption
- human induced changes in hydraulic conditions or pollution to surface waters.

6.6.2 This has been addressed by incorporating mitigation measures into the LDP to protect European sites and improve air quality. Taking into account the information available at this stage and the level of detail appropriate for LDP policies and proposals, it is concluded that the LDP is not likely to have a significant effect on Cefn Cribwr Grasslands SAC, either alone or in-combination with other plans or projects.

7 Kenfig SAC – Appropriate Assessment

7.1.1 The HRA Screening Report identified the Preferred Strategy had the potential for LSE to Kenfig SAC from:

- air quality – potential for impacts arising from residential development and increased numbers of motor vehicle journeys and associated emissions, and from industrial emissions
- habitat loss – direct loss due to candidate site overlapping with SAC
- human induced changes in hydraulic conditions
- pollution to surface waters, ground waters, soil, and solid waste with subsequent impacts to SAC.
- recreation - due to the proximity between the growth area and the SAC, LSE could arise through outdoor sports and leisure activities, such as fishing, dog walking, kayaking.

7.1.2 The proposals identified as having the potential for LSE are linked to **SP1: Regeneration and Sustainable Growth**, and **SP2: Regeneration Growth Area and Sustainable Growth Area Strategic Allocations** which set out the plan for growth during the plan period.

7.1.3 **SP6 - Sustainable Housing Strategy** and **SP11 - Employment Land Strategy** were identified within the HRA Screening Report as having at least the potential for LSE on European Sites. These strategic policies identify targets for housing and employment growth and direct development to broad locations including identified Sustainable Growth Areas, Strategic Regeneration Growth Areas and existing employment sites.

7.1.4 All other strategic policies were reviewed within the HRA Screening Report and were considered to have no LSE on European Sites. This is because the policies themselves would not directly lead to development or otherwise create potential impact pathways to European Sites. In addition, many of the strategic policies set out key principles, which whilst not specifically 'mitigation' in respect of European Sites, are intended to afford appropriate protection to the natural environment and amenity. This includes policy criteria which seek to:

- Reduce car dependencies and improve active travel infrastructure;
- Protect and enhance access to high quality outdoor sports facilities, parks and open spaces;
- Promote the efficient use of resources, including moving towards a low carbon economy, use of waste as a resource, energy efficient buildings, and appropriate renewable and low carbon energy;
- Take measures to protect air quality levels and aim to mitigate any activity which could affect air quality levels;
- Give consideration to development impacts on water, including water quality, ecosystems, sustainable use of water, capacity of sewerage, flood risk and the opportunities to improve flood risk management;
- Seek ways to maximise multi-functional green infrastructure coverage and ensure they provide a network of linked wildlife corridors (across a wide range of scales and increase ecosystems services including biodiversity);
- Seek ways to maximise the health benefits of green infrastructure;
- Use land efficiently by prioritising the use of previously developed land;

- Promote development that minimises adverse impacts on landscape character.

7.1.5 Further appropriate assessment of the identified likely significant effect on the integrity of the SAC is set out below.

7.2 Site Details and Summary of Conservation Objectives

7.2.1 Kenfig SAC is 1191.67 hectares in size and located within Bridgend County Borough Council. It is designated for a variety of coastal habitats including sand dune systems and associated water bodies, salt marsh, and the presence of two plants; petalwort and fen orchid.

7.2.2 The Conservation Objectives for qualifying habitats within the SAC require that this feature be in a favourable conservation status, where a number of conditions are satisfied, including: the extent of the habitats, the quality of the habitats, the presence or absence of certain desirable/undesirable species, nitrogen deposition, river bank erosion/sediment deposition, trampling, pollution.

7.2.3 Performance indicators for factors *affecting* the habitats within the SAC include: livestock grazing, water level and water quality, hydrology, sediment load, fishery load, introduced species, natural coastal processes, recreation and visitor pressure, scrub encroachment, and air quality.

7.2.4 The Conservation Objectives for the two qualifying plant species, petalwort and fen orchid, include extent and distribution and habitat quality.

7.2.5 Performance indicators for the two qualifying plant species, petalwort and fen orchid include: extent and quality of the habitat, recreation and access, air quality.

7.2.6 The Conservation Objectives are set out in full in **Appendix C**.

7.3 Appropriate Assessment

7.3.1 The assessment below sets out the elements of the LDP Deposit Plan which have been identified as having potential to cause likely significant effects (LSE) to Kenfig SAC. Only those elements of the LDP Deposit Plan which have potential for LSE are included. The assessment subsequently includes a determination of whether those effects identified are likely to result in an effect on the integrity of the European Site – i.e. Appropriate Assessment. Reasoned justification is provided, with reference to policy wording and any other supporting documentation.

7.3.2 Those elements of the LDP Deposit Plan not discussed below are considered to not have the potential for LSE as the policy (or supporting text) to which they relate has already been identified as unlikely to cause LSE within the HRA Screening Report, and any change to the wording does not link to any of the potential impact pathways for the European Sites under consideration. Therefore, there is no need to re-screen the modified policy, or supporting text, back into the HRA.

Air quality

7.3.3 The LDP Deposit Plan has the potential to increase atmospheric pollution which could arise from an increase in traffic associated with the projected population growth over the life of the plan, or through industrial emissions. Atmospheric pollution could affect the qualifying habitats, and subsequently the qualifying plant species, through altering the biochemistry of plants or fungi, or through stimulating the growth of competitive plant species which can reduce species diversity within a habitat.

7.3.4 Data from the Air Pollution Information System (APIS) website indicates that the current nitrogen and acidity critical loads at the SAC are exceeded for some features. However, it should be

noted that the largest contributions are from farming and deposition imported from Europe (e.g. for nitrogen, road travel contributes 10% across the site as a whole, as opposed to 24% imported from Europe, and 24% from livestock (APIS, 2020)).

7.3.5 Air quality modelling for the UK undertaken by the JNCC, predicts a substantial decrease in impacts on sensitive vegetation by 2030 under the most likely future baseline, with some pollutants such as nitrogen seeing reductions in deposition across the UK of 18.9%. Therefore, it is likely in the absence of further development, air quality is likely to improve within the period of the Deposit Plan.

7.3.6 In relation to the impact of emissions on ecological receptors from development, an impact of less than 1% of the critical level or load is accepted to be a pragmatic threshold for determining no likely significant effects (IAQM, 2019). It should be noted that an impact of more than 1% is not, per se, an indication that a significant effect exists, only the possibility of one which could trigger the need for further, more detailed assessment of the ecological sensitivity and value of the habitat. This is supported by CIEEM's Advisory Note (CIEEM, 2021) which states '*Screening thresholds are a tool to indicate when further assessment is required and should be informed by all available information*'.

7.3.7 Proposals in the LDP Deposit Plan which could give rise to increased levels of atmospheric pollution with potential for subsequent effects to the SAC include residential development and associated increased numbers of motor vehicle journeys and associated emissions, and from industrial emissions. Whilst there are few allocations in close proximity to the SAC, effects from traffic related to new residential development can be felt many kilometres away.

Habitat Loss

7.3.8 The HRA Screening Report identified that habitat loss could arise through direct loss from the SAC (candidate sites 312.C1, 345.C1, and 352.C55 included at that time overlapped with the SAC). Following the HRA Screening Report, 312.C1, and 352.C55 have been removed and no longer form part of the LDP Deposit Plan.

7.3.9 Site 345.C1 is included within the Deposit plan, meaning there is still potential for likely significant effects from direct habitat loss from the SAC. However, this site only marginally overlaps with the SAC along approximately 5 metres of its boundary, possibly due to a mapping error, therefore assuming avoidance measures will be incorporated, significant effects to the SAC through habitat loss can be avoided, however this would need to be confirmed through a project specific HRA.

Changes in Hydrology

7.3.10 The HRA Screening Report identified the potential for LSE to Kenfig SAC through changes in hydrology through land development which could impact hydrological regimes. The Conservation Objectives state that 'The nature of the underlying limestone aquifer means that off-site activities a considerable distance away can potentially have an impact on the SAC.'

7.3.11 Development has the potential to disrupt the existing hydrological regimes altering the availability of water to the habitats within the SAC, or to affect the quality of ground water entering the site.

Recreation

7.3.12 The LDP Deposit Plan has the potential to increase recreational activities within the SAC due to the projected population growth over the life of the plan. The Core Management Plan identifies camping, off road motorcycling and use of 4x4s, and horse riding as particular threats to the habitats and species within SAC. The Management Requirements for the SAC set out a number of existing measures being undertaken manage access in a manner to avoid or

minimise effects from recreation. This includes manging vehicle access, wardening and surveillance of camping and horse riding.

Pollution

7.3.13 The LDP Deposit Plan has the potential to generate pollution to the SAC through population growth over the life of the plan with resulting increases in nutrients from Wastewater Treatment Works (WTW) which may be conveyed to the SAC with subsequent effects to habitats. The majority of WTW within BCBC will discharge into the River Ogmore and the River Kenfig, and will bypass the majority of the SAC, discharging into the Bristol Channel. This is supported by the Core Management Plan which states '*The extent of the drainage systems leading from the M4 motorway and the town of North Cornelly are also unknown, however it seems likely that most industrial and urban drainage bypasses the site*'. However, the Core Management Plan identifies that three small streams flowing into Kenfig Pool within the SAC are thought to be the source of increased levels of plant nutrients. A review of site allocations has not identified any candidate sites which could discharge into the surface water catchment of Kenfig Pool.

7.3.14 Pollution could also arise from industrial activities and infrastructure in proximity to the SAC which may come forward through the Deposit Plan.

7.4 Mitigation

7.4.1 The following policy within the LDP Deposit Plan will mitigate potential effects to the SAC from air quality, habitat loss, or changes in hydrology, recreation and pollution through protection of the site through development management.

SP17 – Conservation and Enhancement of the Natural Environment states that:

"Proposals likely to have direct or indirect adverse effects on Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites, must be subject to a HRA. This includes development proposals on allocated sites where this plan indicates a project level HRA is required and any other development proposals likely to have adverse effects on SACs/SPAs/Ramsar sites.

Development requiring HRA will only be allowed where it can be determined through HRA that:

- *taking into account mitigation, the proposal would not result in adverse effects on the integrity of the SACs/SPAs/Ramsar sites, either alone or in combination with other plans or projects, or*

- *HRA proves there are no alternatives and that the development is of overriding public interest and appropriate compensatory measures are provided"*

7.4.2 In addition, the following policies within the LDP Deposit Plan will provide further protection and promote improvements in air quality.

DNP9: Natural Resource Protection and Public Health states 'Development proposals will only be permitted where it can be demonstrated that they would not cause a new, or exacerbate an existing, unacceptable risk of harm to … biodiversity … due to… air pollution or water pollution'.

DNP8: Green Infrastructure promotes the 'protection and enhancement of existing natural assets that afford valuable ecosystem services and the creation of new multi-functional green infrastructure'. Green Infrastructure is a network of multifunctional green spaces, natural features and environmental management systems which help to provide a natural life support system for people and wildlife. Green infrastructure can provide benefits beyond its primary functions, including the improvement of local air quality.

SP4 Mitigating the Impact of Climate Change and **SP5: Sustainable Transport and Accessibility** promote low/zero carbon energy requirements, encourages the development of renewable low/zero carbon energy generation, and sustainable transport and access principles. These policies will encourage reduction in transport and a move away from fossil fuels, both of which may result in improvements in air quality.

7.4.3 Existing measures are already in place within the Core Management Plan to address recreational effects from the specific activities identified, including manging vehicle access, wardening and surveillance of camping and horse riding. In addition to this the following policies within the LDP Deposit Plan address potential effects from increased recreation:

SP16 – Tourism states 'Tourism development linked to regeneration initiatives will be promoted at Local Nature Reserves (where this doesn't conflict with Conservation Objectives of related designations)…'

7.4.4 This will avoid promotion of tourism (and associated recreation at areas of the SAC which are also designated as LNR.

7.4.5 Existing measures are already in place within the Core Management Plan to address potential effects from pollution, including monitoring of pollution sources, and liaison with statutory authorities including BCBC and Welsh Water. In addition to this the following policies within the LDP Deposit Plan address potential effects from pollution:

SP4 – Mitigating the Impact of Climate Change states that 'All development proposals will be required to make a positive contribution towards tackling the causes of, and adapting to the impacts of Climate Change. Means of achieving this may include: …Using resources more efficiently, and minimising waste water use and pollution...'.

Effects on the Integrity of European Sites

7.4.6 In light of the mitigation measures set out within the wording of policies, no Likely Significant Effects to Kenfig SAC are anticipated from the LDP Deposit Plan through air pollution, habitat loss, changes to hydrology, recreation, or pollution.

7.4.7 In addition, a number of policies in the Plan may result in improvements to air quality in the County Borough, in particular through enhancement to green infrastructure, and sustainable transport.

7.5 In-combination assessment

7.5.1 There is potential for in-combination effects to Kenfig SAC from emissions from traffic, human induced changes in hydraulic conditions, habitat loss, recreation, and pollution which may not be generated with the County Borough, but from adjacent Local Authority areas. To inform the assessment of in-combination effects, Local Development Plans and their associated HRAs for the three Local Authority areas adjoining BCBC has been undertaken. This includes:

- Vale of Glamorgan
- Rhonda Cynon Taff
- and Neath Port Talbot

Vale of Glamorgan

7.5.2 The Vale of Glamorgan Deposit Local Development Plan Habitats Regulations Assessment (Appropriate Assessment) Report (Enfusion, 2013) did not identify any likely significant effects to Kenfig SAC.

7.5.3 The Vale of Glamorgan Local Development Plan 2011-2026 (June 2017) includes policy **Mg19 - Sites And Species Of European Importance** which states:

Development proposals likely to have a significant effect on a European site, when considered alone or in combination with other projects or plans will only be permitted where:

1. The proposal is directly connected with or necessary for the protection, enhancement and positive management of the site for conservation purpose; or

2. The proposal will not adversely affect the integrity of the site;

3. There is no alternative solution;

4. There are reasons of overriding public interest; and

5. Appropriate compensatory measures are secured.

7.5.4 As no LSE to Kenfig SAC have been identified, and policy is in place to protect European Sites from developments which would adversely effect their integrity, no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

Rhonda Cynon Taf

7.5.5 The *Appropriate Assessment Of The Rhondda Cynon Taf County Borough Council's Local Development Plan* (2006-2021) (Enfusion, 2007) did not identify any likely significant effects to Kenfig SAC.

7.5.6 The Rhondda Cynon Taf Local Development Plan up to 2021 (Adopted March 2011) includes **Policy AW 8 - Protection And Enhancement Of The Natural Environment,** which states:

Development proposals will only be permitted where… . There would be no unacceptable impact upon features of importance to landscape or nature conservation, including ecological networks, the quality of natural resources such as air, water and soil, and the natural drainage of surface water.

7.5.7 As no LSE to Kenfig SAC have been identified, and policy is in place to protect features of ecological importance (which it is assumed would include European Sites), no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

Neath Port Talbot

7.5.8 The *Neath Port Talbot Local Development Plan 2011-2026 Habitats Regulations Appraisal* (Neath Port Talbot, August 2013) concluded that the LDP is not likely to have a significant effect on Kenfig SAC.

7.5.9 The *Neath Port Talbot CBC Local Development Plan 2011-2026* (Adopted January 2016) includes Policy **SP 15 Biodiversity and Geodiversity**, which states:

….any proposals that could have an adverse effect [on a European site] will not be permitted except under certain very limited and specific circumstances

7.5.10 As no LSE to Kenfig SAC have been identified, and policy is in place to protect European Sites from developments which would adversely effect their integrity, no significant in-combination effects along with the Bridgend LDP Deposit Plan are anticipated.

7.6 Conclusions

7.6.1 This HRA has identified the Proposals in Bridgend LDP Deposit Plan has potential to generate likely significant effects to Kenfig SAC from:

- air quality
- habitat loss
- human induced changes in hydraulic conditions,
- pollution
- recreation

7.6.2 This has been addressed by incorporating mitigation measures into the LDP to protect European sites and improve air quality. Taking into account the information available at this stage and the level of detail appropriate for LDP policies and proposals, it is concluded that the LDP is not likely to have a significant effect on Kenfig SAC, either alone or in-combination with other plans or projects.

8 Conclusions and Next Steps

8.1 Summary

8.1.1 This HRA has identified the Proposals outlined in the Bridgend LDP Deposit Plan has potential to generate likely significant effects to three identified European sites: Blackmill Woodland SAC, Cefn Cribwr Grasslands SAC and Kenfig SAC. A number of impact pathways have been identified which could affect the sensitivities of the European sites, including:

- air quality
- habitat loss
- human induced changes in hydraulic conditions
- pollution
- recreation

8.1.2 It is considered that **Strategic Policy 17 – Conservation and Enhancement of the Natural Environment** within the Bridgend LDP Deposit Plan provides sufficient protection of European sites from development contained within the Plan.

8.1.3 In addition a number of other policies will provide further protection and promote improvements in air quality and have been taken into account in the appraisal.

8.1.4 Taking into account the information available at this stage and the level of detail appropriate for LDP policies and proposals, together with the measures incorporated into the LDP to protect European sites and provide improvements in air quality, it is concluded that the LDP is not likely to have a significant effects on any of the identified European sites, either alone or in-combination with other plans or projects.

8.1.5 Although no likely significant effects from the Bridgend LDP Deposit Plan have been identified, this does not exempt individual development proposals undergoing project specific HRA, where necessary. SP17 is clear in stating that where assessments cannot demonstrate that there will be no adverse effects on the integrity of the European site, progressing the development would not be permitted.

8.2 Next Stage of Bridgend RLDP Preparation

8.2.1 This HRA Report will be consulted on in tandem with the Deposit Plan. All representation received regarding both documents will then be analysed by SCC to determine whether:

- Substantive modifications, known formally as ‘Focused Changes’, need to be made to the Deposit Plan resulting in the need to re-consult on substantive RLDP proposals and an associated HRA Report; or,
- Only non-substantive modifications need to be made to the Deposit Plan, following which it would be submitted to the Secretary of State to undergo a formal Examination (EiP) by an appointed Inspector.

8.2.2 The formal Examination will then consider the soundness of the Deposit Plan and all unresolved issues raised in representations regarding the Deposit Plan. This HRA Report will be a key document to inform the Examination and will be submitted to the Welsh Government in support of the Deposit Plan. Following the Examination, the appointed Inspector will identify any modifications necessary before the Deposit Plan can proceed to be adopted as the RLDP for

the BCBC area. Any such modifications would undergo SEA and HRA screening and a further round of consultation prior to being incorporated within the finalised RLDP.

8.2.3 Once any modifications identified through the Examination have been consulted on and incorporated into the Deposit Plan, the final document will be presented to a full meeting of BCBC and submitted to the Welsh Government for formal adoption as part of the new statutory Development Plan for the BCBC area.

9 Figures

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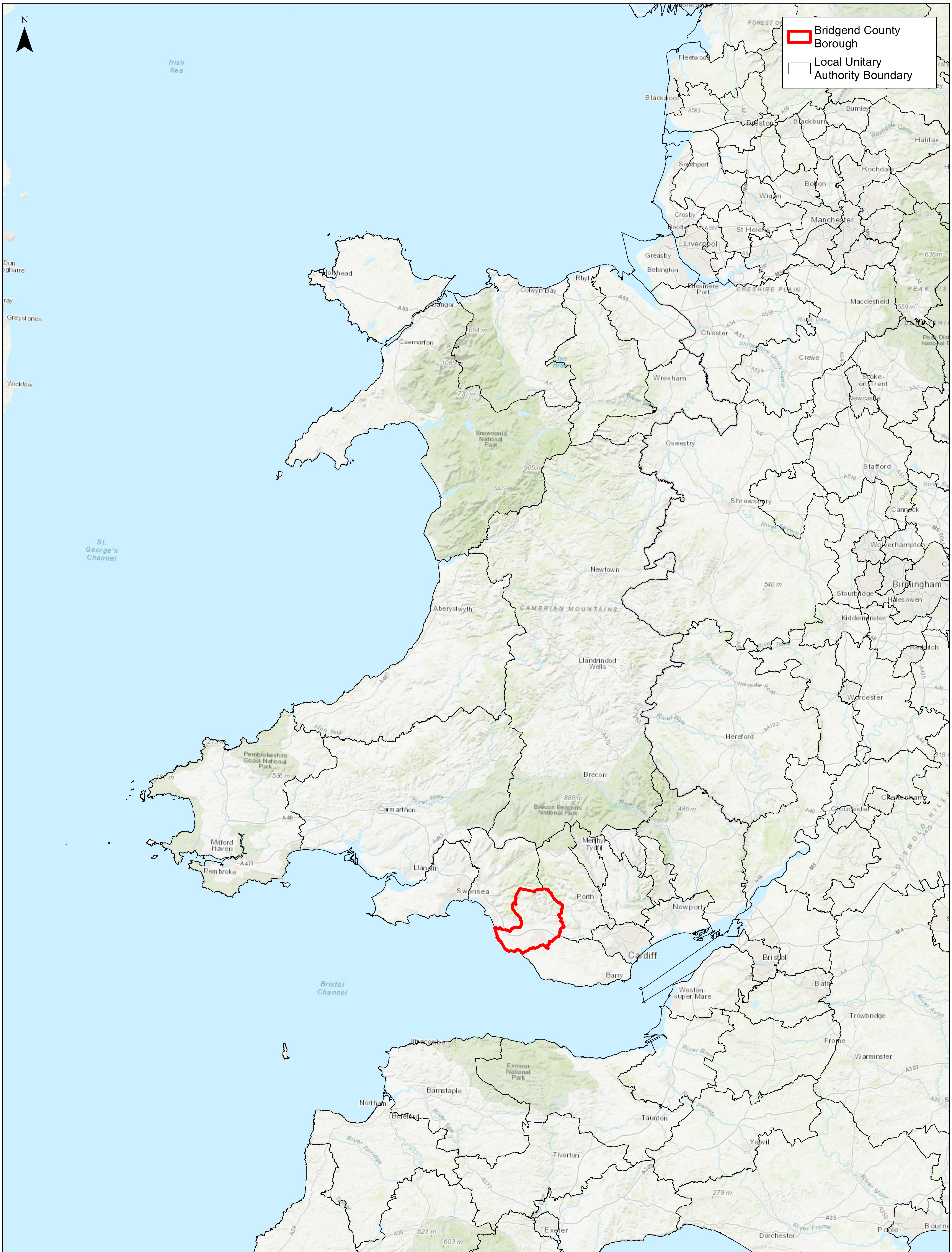

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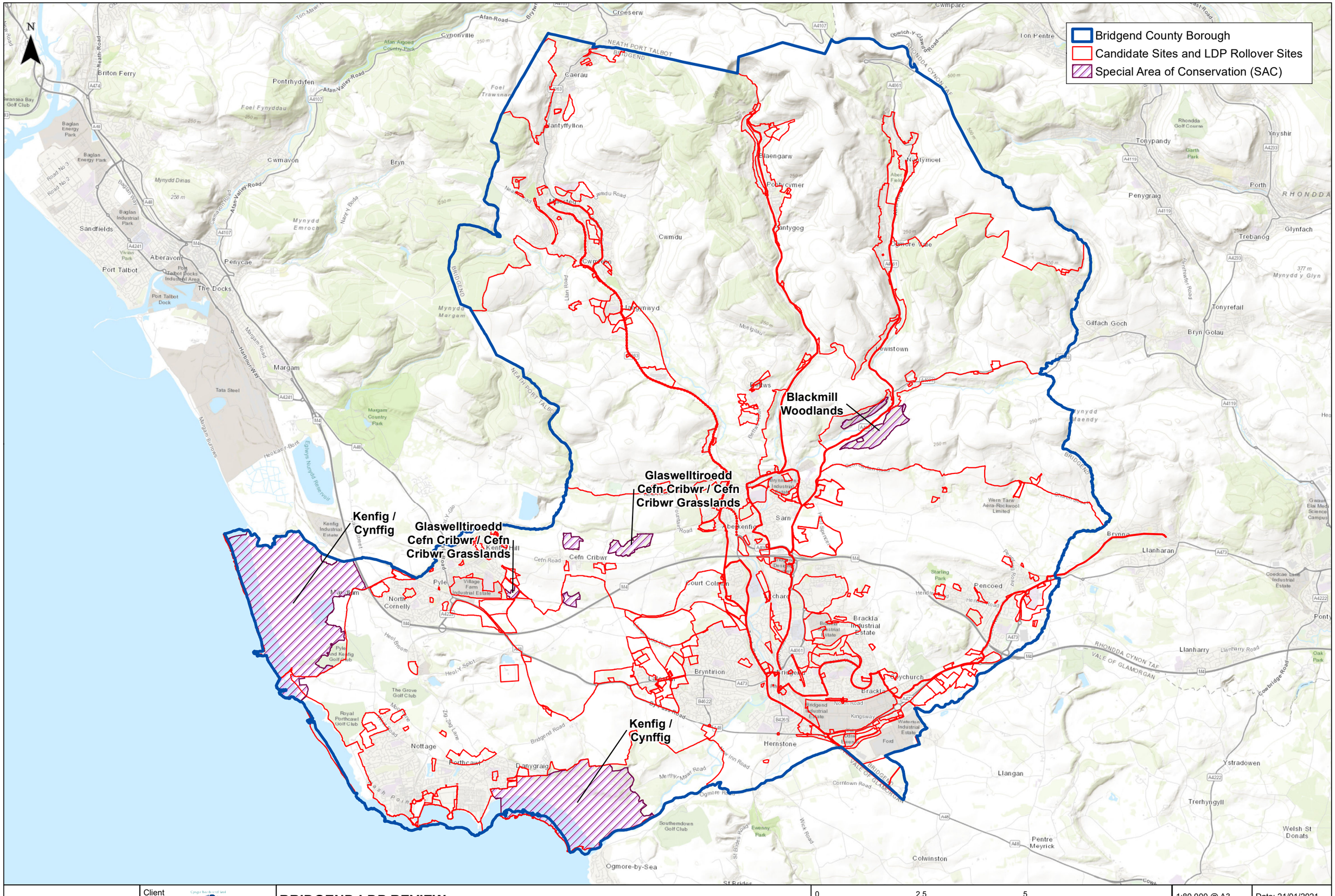

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BRIDGEND LDP REVIEW

Candidate Sites and LDP Rollover Sites within Bridgend County Borough Council

0 2.5 5 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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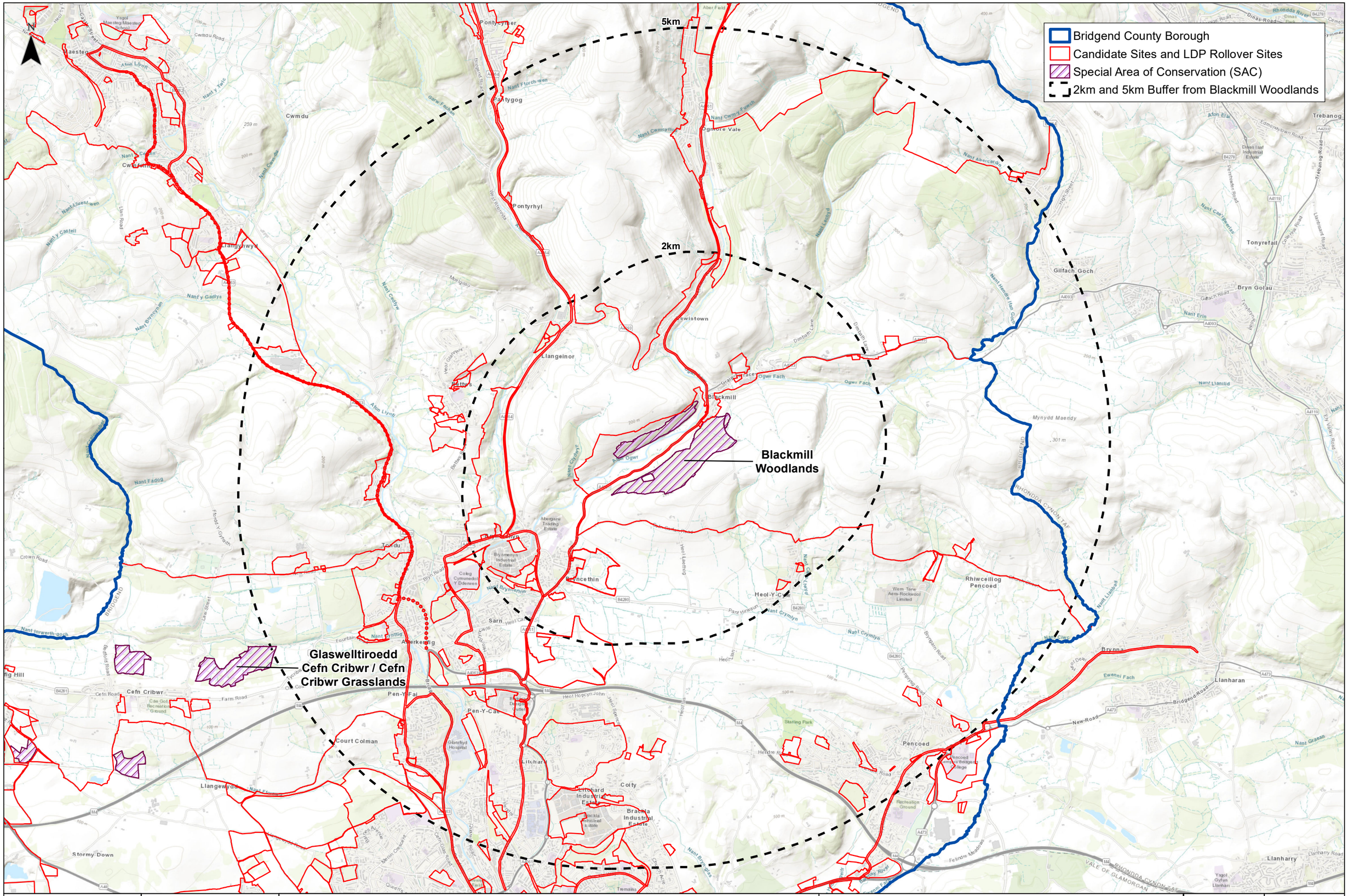

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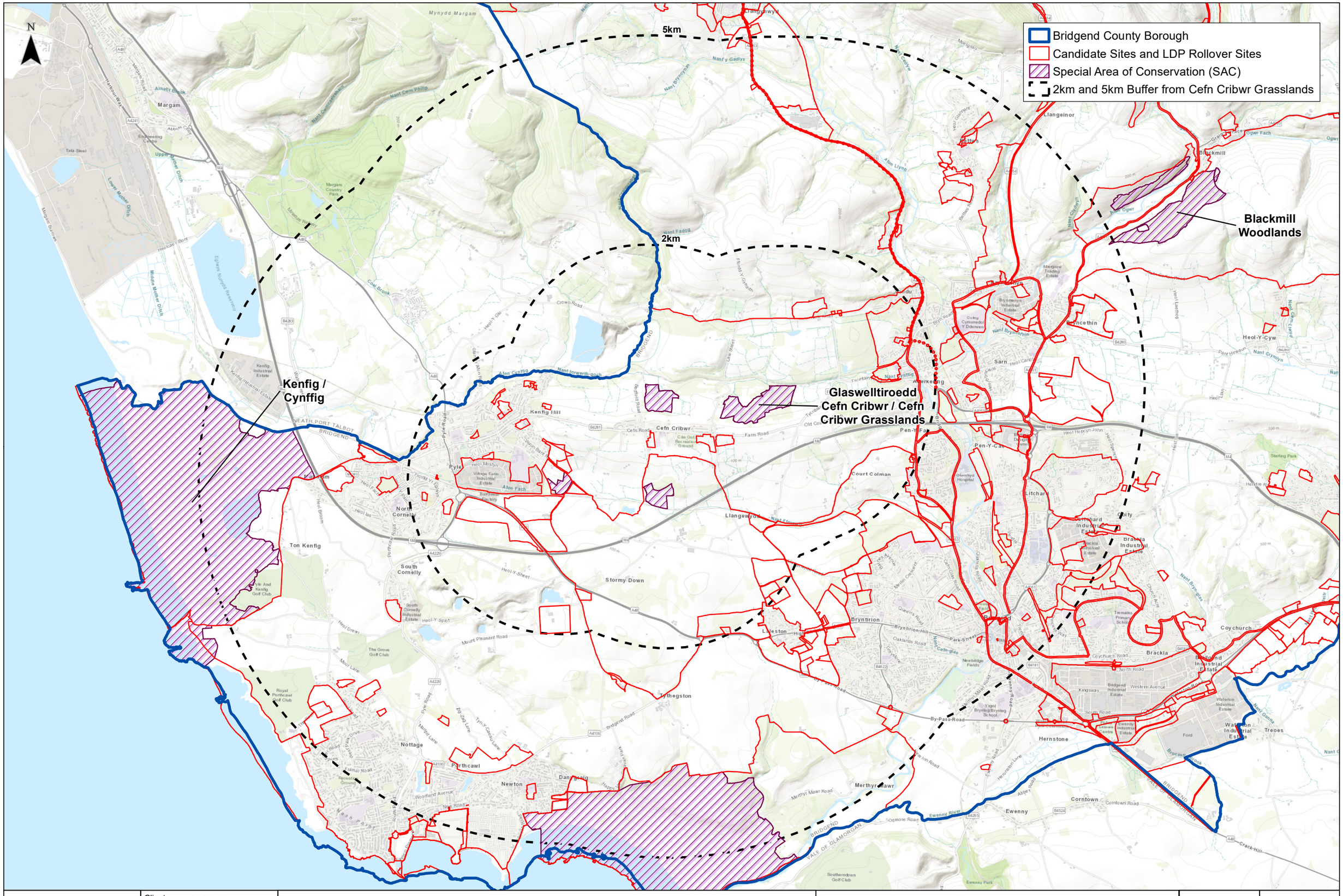

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BRIDGEND LDP REVIEW

Candidate Sites and LDP Rollover Sites within 2km and 5km of Cefn Cribwr Grasslands SAC

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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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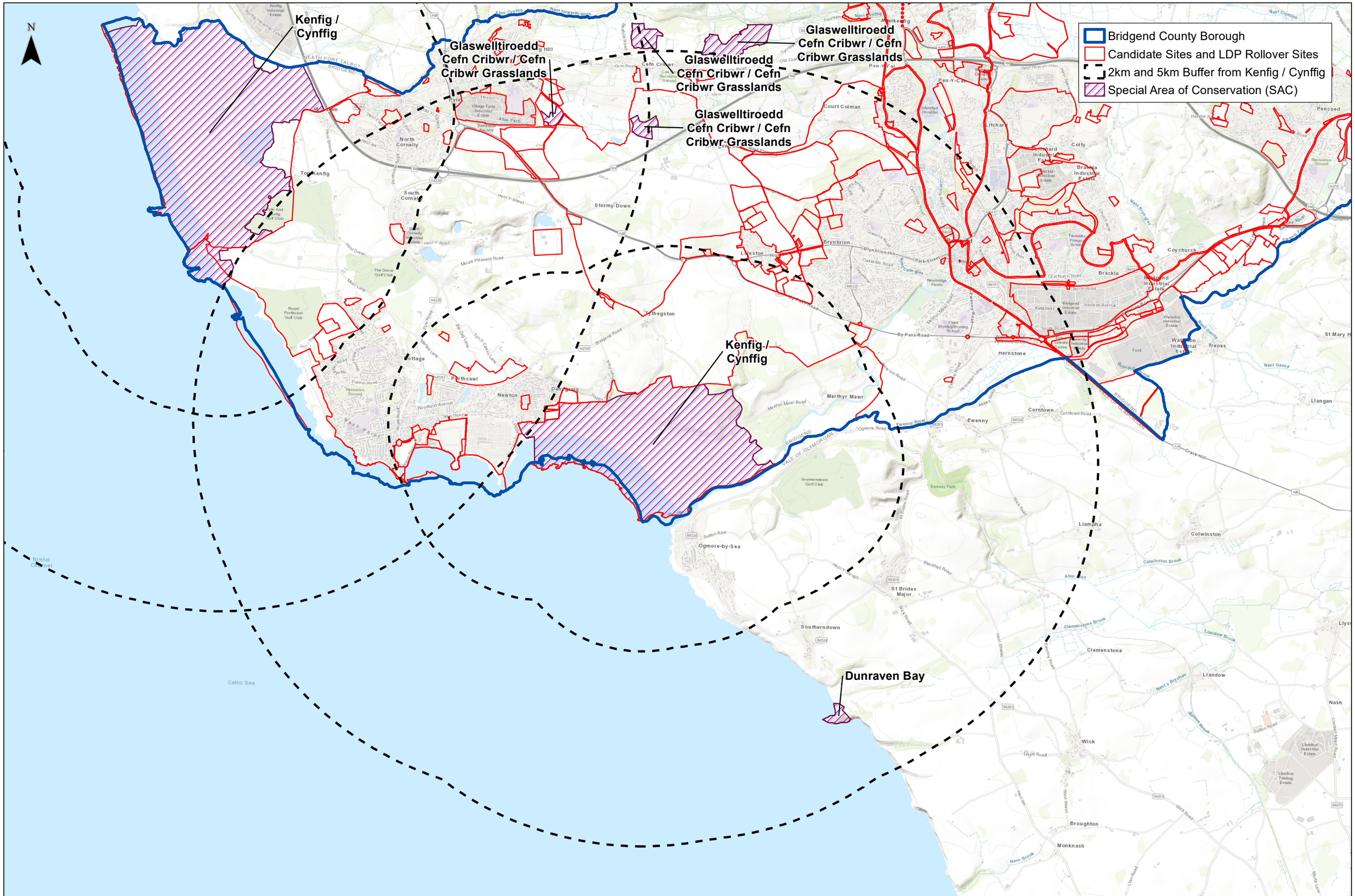

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BRIDGEND LDP REVIEW

Candidate Sites and LDP Rollover Sites within 2km and 5km of Kenfig / Cynffig SAC

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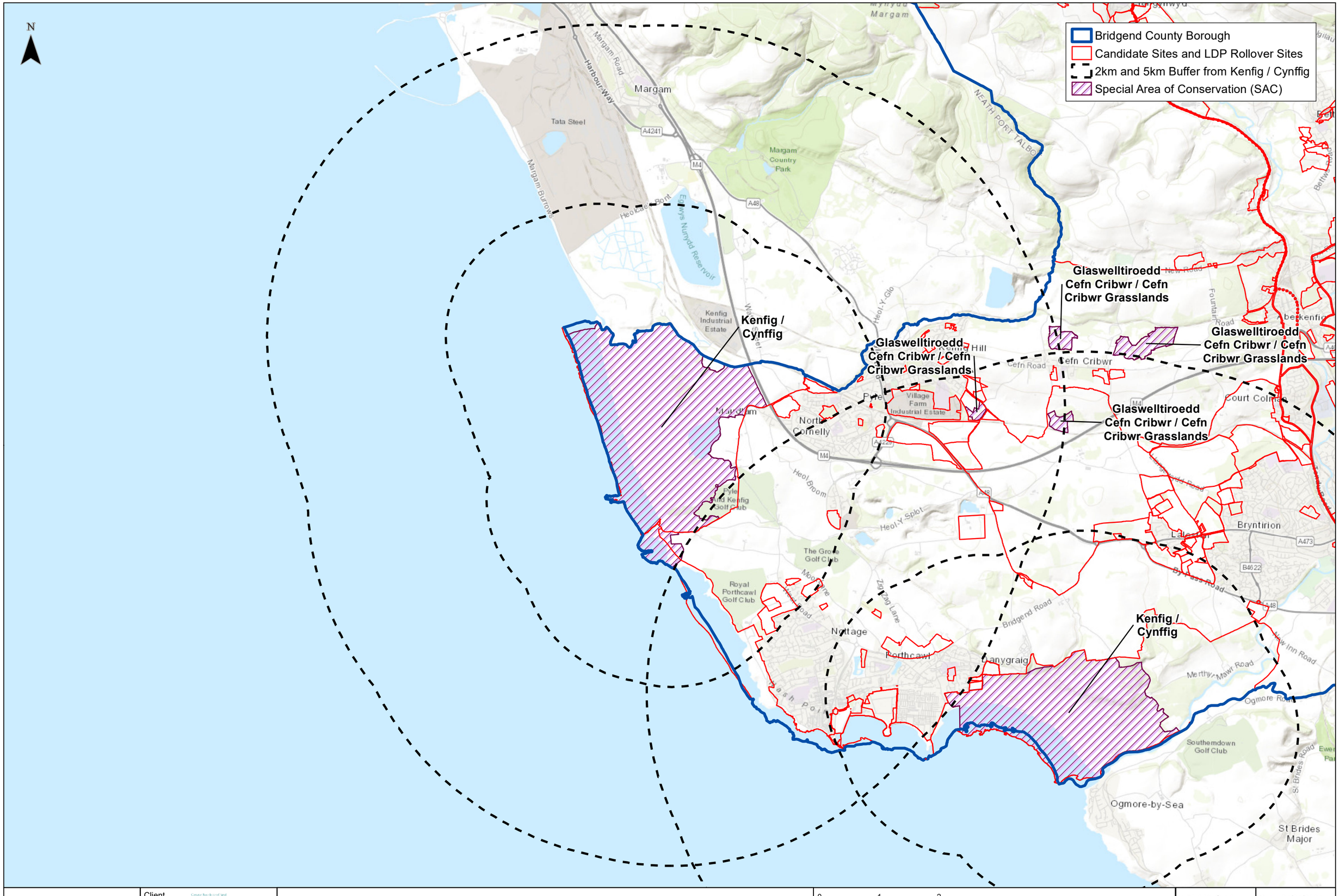

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10 References

PBA (2018). Bridgend LDP Review: Initial HRA Screening Report

PBA (2019). Bridgend LDP Review: LDP Pre-Deposit Documents (LDP Preferred Strategy) Habitats Regulations Assessment Screening Report

CIEEM (2021) Advice on Ecological Assessment of Air Quality Impacts. Chartered Institute of Ecology and Environmental Management. Winchester, UK.

DTA Publications. The Habitats Regulations Assessment Handbook. www.dtapublications.co.uk

Dragosits, U., Carnell, E.J., Tomlinson, S.J., Misselbrook, T.H., Rowe, E.C., Mitchell, Z., Thomas, I.N., Dore, A.J., Levy, P., Zwagerman, T., Jones, L., Dore, C., Hampshire, K., Raoult, J., German, R., Pridmore, A., Williamson, T., Marner, B., Hodgins, L., Laxen, D., Wilkins, K., Stevens, C., Zappala, S., Field, C. & Caporn, S.J.M. 2020. Nitrogen Futures. JNCC Report No. 665. JNCC, Peterborough, ISSN 0963-8091.

Holman et al (2019). A guide to the assessment of air quality impacts on designated nature conservation sites – version 1.0, Institute of Air Quality Management, London.

Welsh Assembly Government (2009). Technical Advice Note 5 (TAN5): Nature Conservation and Planning.

Welsh Government (2019). Development Plans Manual, Edition 3 (Consultation Draft).

Appendix A Core Management Plan (Including Conservation Objectives) for Blackmill Woodlands SAC

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

CORE MANAGEMENT PLAN

(INCLUDING CONSERVATION OBJECTIVES)

for

Blackmill Woodlands
Special Area of Conservation

Date: 28 March 2008

Approved by: **David Mitchell**

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

Cyngor Cefn Gwlad Cymru
Countryside Council for Wales

NATURA 2000

Ramsar

Llywodraeth Cynulliad Cymru
Welsh Assembly Government
CORFF NODDEDIG | SPONSORED BODY

CONTENTS

PREFACE

This document provides the main elements of CCW's management plan for the sites named. It sets out what needs to be achieved on the sites, 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 sites. 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.

At least 90% of the site will be covered by semi-natural broadleaved woodland. The trees will be locally native broadleaved species, with a dominance of oak in the canopy. In the long term, the canopy will include trees of a wide range of age classes, with particular attention given to retaining old or veteran trees and encouraging natural regeneration of tree species, in particular oak. Dead wood, standing and fallen, will be maintained where possible to provide habitat for invertebrates, fungi and other woodland species. The tree canopy will not be completely closed; approximately 10% of the woodland will include a naturally occurring dynamic, shifting pattern of gaps.

2. SITE DESCRIPTION

2.1 Area and Designations Covered by this Plan

Grid references: **SS929859**

Unitary authority: **Bridgend County Borough Council**

Area (hectares): **71.01**

Designations covered: **SAC, 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

Blackmill Woodlands is an example of **old sessile oak woods** at the southern extreme of the habitat's range in Wales, and contributes to representation of the habitat in Wales and in south-west England. The ground flora is restricted by the relative dryness of the site, but the main habitat features of sessile oak *Quercus petraea* canopy - acidic ground flora of bilberry *Vaccinium myrtillus* and wavy hair-grass *Deschampsia flexuosa*, and moderate fern and bryophyte cover - are present. The woodlands have a long cultural history of management, reflected in the distinctive gnarled appearance of many of the trees.

2.3 Outline of Past and Current Management

These woodlands are situated entirely on common land and have been subject to rights of common since the Middle Ages. These rights include the lopping of branches for firewood, which has resulted in the distinctive gnarled form of many of the trees. The most significant consequence of past management is that many of the trees are of a similar age and provide a limited range of opportunities for typical woodland plants and animals. The woodland has been subject to significant grazing pressure in the past. However, the Allt y Rhiw block has been fenced in the last ten years, and the increase in ground flora and natural regeneration has been significant.

Woodland management should focus on restoring an uneven age structure and providing increased opportunity for natural regeneration through removal of grazing and gap creation/maintenance.

2.4 Management Units

The plan area has been divided into management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based on tenure with the block of woodland to the north (Craig Tal y Fan, Unit 2) under the control of Llangeinor Commoners Association and the block to the south (Allt y Rhiw, Unit 1) subject to control by Coity Wallia Commoners Association.

See accompanying management unit map.

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

Unit number	**SAC**	**SSSI**	**CCW owned**	**Other**
Blackmill Woodlands SA, SSSI				
1	✔	✔		
2	✔	✔		

3. THE SPECIAL FEATURES

3.1 Confirmation of Special Features

Designated feature	***Relationships, nomenclature etc***	***Conservation Objective in part 4***
SAC features		
Annex I habitats that are a primary reason for selection of this site 1: **Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (code: 91A0)**	Generally referred to as Old sessile oak woods throughout this document.	1
SSSI features		
Semi natural broadleaved woodland	On this site, the SSSI feature is identical to the SAC feature.	

3.2 Special Features and Management Units

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

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

Other Features
Sym - habitats, species and earth science features that are of importance in a unit but are not the main drivers of management or focus of monitoring. These features will benefit from

management for the key feature(s) identified in the unit. These may be classed as 'Sym' features because:

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

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

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

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

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

Blackmill Woodlands		
	1	**2**
SAC	✔	✔
SSSI	✔	✔
SAC features		
1. Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	**KH**	**KH**
SSSI features		
3. Semi-natural broadleaved woodland	**KH**	**KH**

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] Web link: http://www.jncc.gov.uk/page-2199

4.1 Conservation Objective for Feature 1:

Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

Vision for feature 1
There is only one feature for the site, and so the vision for this feature is the same as that for the site (please refer to section 1). It is required that the feature be in a favourable conservation status, where all of the conditions set out in the Performance Indicators table (below) are satisfied, and all factors affecting the achievement of these conditions are under control.

Performance indicators for Feature 1

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

Performance indicators for feature condition		
Attribute	***Attribute rationale and other comments***	***Specified limits***
A1. Extent	A lower limit for the extent of the woodland habitat has been set in order to allow for the presence of a bracken fringe and areas of semi improved grassland surrounding the woodland blocks, which are thought to add to the diversity of the site. This limit has been set at 90%, which more or less reflects the current situation within the SAC. Monitoring is likely to be a map-based exercise. The area of sessile oak woodland will be mapped as a baseline extent and the total area measured. Repeat monitoring will either re-map the site or review the baseline map in the field.	*Upper limit*: 100% cover of woodland habitat *Lower limit*: 90% cover of woodland habitat
A2.Canopy Composition	Oak makes up 70% of the canopy forming trees 95% of the canopy forming trees are native species	*Lower limit* 70% Oak *Upper limit* N/A *Upper limit* N/A *Lower limit* 95% native species
A2. Canopy cover and regeneration	In 70% of canopy gaps there will be 2 viable saplings, at least one of which will be oak. In the shorter term (over one reporting cycle) there will be 5 oak seedlings or a presence of birch regeneration in these areas. Gap creation rate is on average 0.5% per annum which in the longer term will result in 25% turn over of the woodland over 50 years	*Upper limit* N/A *Lower limit:* Presence of 2 viable saplings, at least one oak,within the three permanent 50m2 monitoring plots present on site. However, in the shorter term (over one reporting cycle) there will be 5 oak seedlings or a presence of birch regeneration in these areas.

		Gaps are defined as any area with a min distance across of 1.5x ht of canopy
A3.Ground flora condition/Quality indicators	<80% of the ground flora to consist of rank vegetation greater than 50cm high. There are no other significant problems in 90% of the woodland (e.g. tipping, nettle patches due to eutrophication etc.) These specifications are to ensure the ground vegetation is not too rank to deter regeneration and lower plants, addressing the 'grazing' issues below.	*Upper limit:* 80% rank ground flora (>50cm high) *Lower limit: None*
A4. Veteran tree density	The density of veteran trees (defined as circumference >200cm at breast height) is at least 1 per hectare	*Upper limit:* N/A? *Lower limit:* 1 veteran tree/Ha
A5. Dead wood	Dead wood, standing or fallen, present	*Upper limit:* N/A *Lower limit:* 5 pieces >20cm in diameter
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	Sheep grazing has, and continues to have, a major impact on the condition of the site with significant problems as a result of the heavy grazing in the Craig Tal-y-Fan (unit 2) woodland block. Excessive sheep grazing leads to a severely impoverished ground flora and severely inhibits the growth or recruitment of young seedlings and saplings for regeneration. Cessation of all grazing over a long period could be detrimental to the field layer, especially bryophytes, as they can become shaded out. The ideal is either to mimic the very low level within a natural woodland ecosystem, or to periodically vary grazing pressure. The site is currently undergoing a recovery period following heavy grazing and absence or removal of grazing should be the aim in the short to medium term.	*Upper limit*: 0.1LSU/Ha/yr *Lower limit*: N/A
F2. Non-native species	No more than 5% of canopy forming trees are non-native	*Upper limits:* 5% cover of non-native trees in the canopy. AND: invasive non-native shrubs in the understorey or shrub layer

		Lower limit: None
F3. Air pollution	Possible in combination effect of EA permitted licences, currently under investigation	To be confirmed

5. ASSESSMENT OF CONSERVATION STATUS AND MANAGEMENT REQUIREMENTS

This part of the document provides:

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

5.1 Conservation Status and Management Requirements of Feature 1: Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles

Conservation Status of Feature 1

Broad Attribute	Allt Y Rhiw (Unit 1)	Craig Tal Y Fan (Unit 2)
Extent	PASS	PASS
Structure and Natural Processes	FAIL	FAIL
Regeneration	FAIL	FAIL
Composition	PASS	PASS
Quality Indicators	PASS	PASS

The results summarised in Table 3 indicate that both Allt y Rhiw and Craig Tal-y-Fan failed to meet the limits set for two of the broad attributes, namely Structure, Natural Process and Regeneration. A closer look at the data reveals that both woodland blocks had insufficient gaps in the canopy, although the average number of gaps per sample was slightly higher for Craig Tal Y Fan than for Allt Y Rhiw. With regard to regeneration, seedlings > 5cm high were seen throughout Allt Y Rhiw and as a result this woodland block passed the limits set for this attribute. However fewer seedlings were seen throughout Craig Tal Y Fan and this woodland block failed this attribute. It is worth noting however that this attribute needs to be assessed over a ten-year period. Both woodland blocks failed to have sufficient seedlings and saplings within canopy gaps. To summarise, the feature within this site is considered to be in **unfavourable condition.** However **Unit 1** should be classified as **unfavourable recovering** and **Unit 2** as **unfavourable declining.**

Management Requirements of Feature 1

The site has been subject to a number of woodland grant schemes in recent years, which have achieved a number of positive management outcomes such as removal of sheep grazing from unit 1 and coupe felling to produce viable gaps in the canopy.

- Continue with proactive woodland management in unit 1 (namely, thinning to promote regeneration in even aged stands and development of a less even aged structure in parts of the site) It is envisaged that this management will be undertaken as part of a Better Woodlands for Wales Scheme to be drawn up by Coed Cymru in consultation with the owners, occupiers Bridgend County Borough Council and CCW.
- Work towards removal of sheep grazing in unit 2 through negotiation with the Llangeinor Commoners Association.

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.

- Negotiate removal of grazing and on-going exclusion of sheep in unit 2
- Formulate Better Woodlands for Wales scheme within Unit 1 for selective thinning, and gap creation.
- Negotiate management agreement for continued exclusion of sheep in Unit 1

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
1	001058	Allt y Rhiw	There are areas within this unit that are dense and even aged with low light levels, which is hampering the recruitment of saplings. There is a good level of initial regeneration of seedlings but lower levels of saplings in many areas, no doubt as a consequence of the low light levels in certain areas. Ongoing stock exclusion is a priority aim and meetings are planned with the Coity Walia Commoners to discuss a management agreement to achieve this for the long term. Overall this unit is recovering following a long period of overgrazing.	Yes
2	001059	Craig Tal-y-Fan	This unit is currently subject to grazing by the Llangeinor Commoners association, which has resulted in a lack of regeneration throughout this unit. As a consequence the woodland is mature and even aged. The understorey is also dominated by bracken in some areas.	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[2]:

Favourable: maintained;
Favourable: recovered;
Favourable: un-classified
Unfavourable: recovering;
Unfavourable: no change;
Unfavourable: declining;
Unfavourable: un-classified
Partially destroyed;
Destroyed.

Conservation management Acts or undertaking of all kinds, including but not necessarily limited to **actions,** taken with the aim of achieving the **conservation objectives** of a site. Conservation management includes the taking of statutory and non-statutory measures, it can include the acts of any 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.

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

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

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

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

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

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

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

Integrity See **site integrity**

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

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.

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

Management Unit An area within a site, defined according to one or more of a range of criteria, such as topography, location of **features**, tenure, patterns of land/sea use. The key characteristic of management units is to reflect the spatial scale at which **conservation management** and **monitoring** can be most effectively organised. They are used as the primary basis for differentiating priorities for conservation management and monitoring in different parts of a site, and for facilitating communication with those responsible for management of different parts of a site.

Monitoring An intermittent (regular or irregular) series of observations in time, carried out to show the extent of compliance with a formulated standard or degree of deviation from an expected norm. In **Common Standards Monitoring**, the formulated standard is the quantified expression of favourable **condition** based on **attributes**.

Operational limits The levels or values within which a **factor** is considered to be acceptable in terms of its influence on a **feature**. A factor may have both upper and lower operational limits, or only an upper limit or lower limit. For some factors an upper limit may be zero.

Performance indicators The **attributes** and their associated **specified limits**, together with **factors** and their associated **operational limits,** which provide the standard against which information from **monitoring** and other sources is used to determine the degree to which the **conservation objectives** for a **feature** are being met. Performance indicators are part of, not the same as, conservation objectives. See also **vision for the feature**.

Plan or project **Project:** Any form of construction work, installation, development or other intervention in the environment, the carrying out or continuance of which is subject to a decision by any public body or statutory undertaker.
Plan: a document prepared or adopted by a public body or statutory undertaker, intended to influence decisions on the carrying out of **projects.**
Decisions on plans and projects which affect Natura 2000 and Ramsar sites are subject to specific legal and policy procedures.

Site integrity The coherence of a site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is designated.

Site Management Statement (SMS) The document containing CCW's views about the management of a site issued as part of the legal notification of an SSSI under section 28(4) of the Wildlife and Countryside Act 1981, as substituted.

Special Feature See **feature**.

Specified limit The levels or values for an **attribute** which define the degree to which the attribute can fluctuate without creating cause for concern about the **condition** of the **feature**. The range within the limits corresponds to favourable, the range outside the limits corresponds to unfavourable. Attributes may have lower specified limits, upper specified limits, or both.

Unit See **management unit.**

Vision for the feature The expression, within a **conservation objective**, of the aspirations for the **feature** concerned. See also **performance indicators.**

Vision Statement The statement conveying an impression of the whole site in the state that is intended to be the product of its **conservation management.** A 'pen portrait' outlining the **conditions** that should prevail when all the **conservation objectives** are met. A description of the site as it would be when all the **features** are in **favourable condition**.

8. REFERENCES

2003: CCW SAC monitoring report (available on request.)

Appendix B Core Management Plan (Including Conservation Objectives) for Cefn Cribwr Grasslands SAC

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

CORE MANAGEMENT PLAN
(INCLUDING CONSERVATION OBJECTIVES)

for

Glaswelltiroedd Cefn Cribwr/ Cefn Cribwr Grasslands Special Area of Conservation

Version: 3

Date: 6th March 2008

Approved by: **David Mitchell**

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

Cyngor Cefn Gwlad Cymru
Countryside Council for Wales

NATURA 2000

Ramsar

Llywodraeth Cynulliad Cymru
Welsh Assembly Government
CORFF NODDEDIG SPONSORED BODY

CONTENTS

Preface

This document contains the main elements of CCW's management plan for the site(s) named. The full management plan consists of this document together with fully expanded Parts 1, 5 and 6. Parts 1, 5 and 6 are or will be accessible via the CCW website.

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

1. VISION FOR THE SITE

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

During the summer, the Cefn Cribwr SSSIs are oases of wildlife amongst the industry and agriculturally improved farmland of the area. Plant communities vary across the four SSSIs, depending on soil conditions, producing a mosaic of vegetation rich in wildlife.

The sward height is between 10 and 30 cm high, but it is still fairly easy to walk through, and large tussocks of purple moor-grass are only found occasionally in the damper ground.

Over most of the damp ground, purple-moor grass and several different sedges and rushes are found, together with the tiny yellow flowers of tormentil. Later in the year the blue, button-like flowers of devils-bit scabious are visited by many bees and butterflies.

Much of the damper grassland has some natural lime-enrichment, and here the vegetation can be particularly species-rich, with up to 30 different species in a square metre. Characteristic plants include meadow thistle (conspicuous in early summer with nodding purple heads) and saw-wort (with sharp-edged leaves, and small purple flowers later in the year). Some of this vegetation also contains plants that indicate more acidic conditions, such as cross-leaved heath, heather and cushions of bog moss.

Particularly wet areas are dominated by tall rushes with water-mint, the yellow pea-like flowers of greater bird's-foot trefoil and the tiny white stars of marsh bedstraw. In a few such places, which are flushed by springs of lime-rich water, the uncommon blunt-flowered rush is dominant and it is here that the rare marsh fern grows.

In drier areas, grasses such as crested dog's-tail and sweet vernal-grass are common, together with more showy flowers such as black knapweed, bird's-foot-trefoil, tormentil and devil's-bit scabious.

By contrast, it is hard to find plants which are common in modern, intensively managed grasslands. In particular, rye-grass and white clover are rarely seen in any of the four SSSIs.

On warm sunny days in late May, June and early July, marsh fritillary butterflies should be a common sight. The females will be searching for large plants of devil's-bit scabious on which to lay their eggs. In autumn, the ground is dotted with the tiny web-like structures in which the caterpillars spend the winter.

2. DESCRIPTION OF THE SITE

2.1 Site location & area

Grid reference: SS870830
Unitary authority: Pen-y-bont ar Ogwr/ Bridgend
Area (hectares): 58.35

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

See accompanying map of management units.

2.2 Outline description

This is one of four sites selected to represent *Molinia* meadows in south and central Wales, one of the major UK strongholds for this habitat type. At this site, there are extensive stands of *Molinia – Cirsium dissectum* fen-meadow (M24), including the heathy sub-type with cross-leaved heath *Erica tetralix* as well as other forms with a stronger representation of native grasses, rushes and small sedges. Transitions to stands of more acidic *Molinia* and *Juncus* pasture, dry neutral grassland and wet scrub vegetation are well represented. Uncommon and declining species associated with the *Molinia* meadows at this site include the nationally rare viper's-grass *Scorzonera humilis* and the nationally scarce soft-leaved sedge *Carex montana*.

The Cefn Cribwr group of SSSIs is also of importance for the presence of marsh fritillary butterflies. This small species, whose wings have an attractive chequerboard pattern of red, brown and cream, is now rare throughout Britain, and is only found where its food plant, devil's bit scabious, grows in abundance. It is mainly on the wing during June. In autumn, the tiny black caterpillars gather together in tens or even hundreds, to spend the winter buried in tussocky vegetation in characteristic webs.

This butterfly is now considered endangered in Europe. Wales (together with Ireland, Scotland and parts of western England) has a special responsibility for its conservation. Recent research has shown that the marsh fritillary will only survive in areas where suitable habitat is plentiful within a short flying distance. Small, isolated fields of marshy grassland, however suitable in other ways, cannot be colonised, and this is one of the reasons that the Cefn Cribwr area is so important.

Marsh fritillary have been recorded in recent years from 3 of the SSSI units – Caeau Cefn Cribwr, Bryn Bach and Pen y Castell, but not Waun Fawr SSSI. Suitable breeding habitat occours at all four SSSI units but by far the most extensive area is at Bryn Bach. One marsh fritillary web was found at Bryn Bach in 2007, and that was the only record from from this SAC for this year.

Marshy grassland

Including stands of Eu-molinion, other acid Molinia grassland M25, M22, blunt-flowered rush meadow and M23 rush pasture.

Neutral grassland

Areas of neutral grassland (MG5a & c) are found throughout each of the 4 SSSI units, most extensively in Caeau Cefn Cribwr and Bryn Bach SSSI.

Vipers grass (*Scorzonera humilis*)

S. humilis is frequent to abundant in several hectares of mostly marshy grassland contained in five fields at Caeau Cefn Cribwr SSSI. Using the National Vegetation Classification (NVC), *S. humilis* is most frequent in *Molinia caerulea - Cirsium dissectum* fen meadow, **M24**. It also extends into *Molinia caerulea - Potentilla erecta* mire, **M25**, *Juncus acutiflorus* rush-pasture, **M23**, *Scirpus cespitosus - Erica tetralix* wet heath, **M15**, and *Cynosurus cristatus - Centaurea nigra* grassland, **MG5** (Rodwell, 1991). Single plants were seen in two nearby fields of similar habitat.

Marsh fern (*Thelpyteris palustris*)

This clonal fern is found in one large area of a field within the Caeau Cefn Cribwr SSSI . It forms a prominent component of an area of blunt-flowered rush pasture (M22). The only other extant site for this species in Glamorgan is at Crymlyn Bog.

Bog myrtle (*Myrica gale*)

Here this species is on the edge of its eastern range in Wales. It is found in three of the component SSSIs of the SAC: Bryn Bach, Caeau Cefn Cribwr and Pen y Castell.

2.3 Outline of past and current management

Typically, the site has been used as grazing pasture for cattle and ponies, although some areas have also been grazed by sheep. Bryn Bach SSSI is grazed by cattle and has been for many years before notification. Caeau Cefn Cribwr is also mostly cattle grazed with some units wholly horse grazed. Pen y Castell is divided between two owners; one half is horse grazed and the other has recieved no grazing in recent years but used to be cattle grazed. Waun Fawr is cattle grazed but has recieved some sheep grazing in the recent past.

The three southern fields of Waun Fawr SSSI were limed in 1991. CCW has no other management information on this site before 1991.

2.4 SSSIs and Management Units within the site

Component SSSIs

The Glaswelltiroedd Cefn Cribwr/Cefn Cribwr Grasslands SAC is notified as four component SSSIs:

- Caeau Cefn Cribwr;
- Pen y Castell, Cefn Cribwr;
- Bryn-bach, Cefn Cribwr; and
- Waun-fawr, Cefn Cribwr.

Each component SSSI may have additional land or features that are not part of the SAC interest features.

Management Units

The individual SSSIs have been divided into management units. This will allow differentiation between different designations within the SSSI (namely SAC and non-SAC), and where appropriate between different tenure blocks, and between parcels of land that have differing management needs.

The basis for the division of Management Units within the Cefn Cribwr Grasslands SAC and component SSSI was primarily tenure, with reference to features and land management requirements. The unit names follow the letter codes used in the Phase II grassland survey.

Unit no.	**Unit name**	**SAC**	**SSSI**	**NNR/ CCW**	**Other**
Caeau Cefn Cribwr					
1	CCC Fields A, B, C, D	✔	✔		
2	CCC Field I	✔	✔		
3	CCC Field L	✔	✔	✔	
4	CCC Field M	✔	✔	✔	
5	CCC Field N	✔	✔		
11	CCC Field P		✔		
12	CCC Fields J & K		✔	✔	
13	CCC Field G		✔		
14	CCC Field H		✔		
Pen y Castell, Cefn Cribwr					
9	PyC Field D & part F	✔	✔		
10	PyC Field E & part F	✔	✔		
17	PyC Field B		✔		
Bryn-bach, Cefn Cribwr					
6	BB Field B, I - O	✔	✔		
15	BB Fields E - G		✔		
7	BB Field D	✔	✔		
16	BB Field A		✔		
Waun-fawr, Cefn Cribwr					
8	Wf Fields A - F	✔	✔		

3. CONFIRMATION OF FEATURES

3.1 Confirmation of features, relationship with and other designations & nomenclature, and Conservation Objectives numbering

Designated feature	***Relationships, nomenclature etc***	***CO no.***
SAC features		
Annex I habitats that are a primary reason for selection of this site ***1. Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) (EU Habitat Code: 6410)**	Generally referred to as '*Eu Molinion* grassland' throughout this document.	1
Annex II species present as a qualifying feature, but not a primary reason for site selection **2. Marsh fritillary butterfly *Euphydryas* (*Eurodryas, Hypodryas*) *aurinia (EU Species Code: 1065)***		2
SPA features		
Not applicable		
Ramsar features		
Not applicable		
SSSI features		
3. Marshy grassland		3
4. Dry neutral grassland		4
5. Viper's grass *Scorzonera humilis*		5
6. Marsh fern *Thelypteris thelypteroides*		6
7. Bog myrtle *Myrica gale*		**7**

3.2 Special Features and Management Units

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

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

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

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

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

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

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

Background information on Cefn Cribwr SAC

Cefn Cribwr SAC comprises four component SSSIs: Cefn Cribwr SSSI, Pen y Castell SSSI, Bryn Bach SSSI and Waun Fawr SSSI. These sites are included in the Natura 2000 series primarily for the areas of Eu Molinion grassland habitat present, with occasional colonisation by the marsh fritillary butterfly adding to their importance. None of the sites is believed to support a core marsh fritillary colony, but some are known to hold small breeding populations periodically (typically following 'good' years at core breeding sites). As such these sites probably play the role of satellite sites within a larger metapopulation, and in most years marsh fritillaries will not be present.

The sites also host five SSSI features, namely marshy grassland (a broad type that can also include Eu Molinion grassland), neutral grassland, viper's grass, marsh fern and bog myrtle.

In general, where Eu Molinion vegetation is present it is considered to be the main focus of management, not only because it is a threatened and declining habitat in Europe, but also because the marsh fritillary and viper's grass (the two key species on the site) are strongly associated with this vegetation.

Caeau Cefn Cribwr SSSI is the most complex of the component SSSI in the SAC, with nine discrete management units and all seven SAC and SSSI habitats and species present.

As viper's grass is found at one of only three UK sites the management of the Eu Molinion and marshy grassland in the three management units where it occurs (Units 1-3) should aim to maintain or increase the population. The marsh fritillary will benefit from sympathetic habitat management in these units, as will the neutral grassland in Unit 1 and the bog myrtle in Unit 3. Elsewhere on the site, in Units 5, 7 and 8, the marshy grassland will be managed to create optimum marsh fritillary habitat. The main focus of the management in Units 4, 6 and 9 is the neutral grassland, though here again, the recommended grazing regime is also sympathetic to requirements of the marshy grassland, marsh fern and bog myrtle.

Note: Even if marsh fritillaries bred regularly in Units 1-3,there is a strong case for viper's grass being selected as the key species to drive the management: Cefn Cribwr supports one of only three populations in the UK, while the marsh fritillary occurs at several hundred known locations.

Caeau Cefn Cribwr	**Management unit**								
	1	**2**	**3**	**4**	**5**	**11**	**12**	**13**	**14**
SAC	✔	✔	✔	✔	✔				
SSSI	✔	✔	✔	✔	✔	✔	✔	✔	✔

NNR/CCW owned			✔	✔			9		
SAC features									
1. Eu Molinion meadows	**KH**	**KH**	**KH**	***x***	***KH***	***x***	***x***	***x***	***x***
2. Marsh fritillary butterfly	**Sym**	**Sym**	**Sym**	***x***	**KS**	**Sym**	**KS**	**KS**	**Sym**
SSSI features									
3. Marshy grassland	**Sym**	**Sym**	**Sym**	***x***	**sym**	**Sym**	**KH**	**KH**	**KH**
4. Dry neutral grassland	**Sym**	***x***	***x***	**KH**	**Sym**	**KH**	***x***	***x***	***x***
5. Viper's grass *Scorzonera humilis*	**KS**	**KS**	**KS**	***x***	***x***	***x***	***x***	***x***	***x***
6. Marsh fern *Thelypteris palustris*	***x***	***x***	***x***	***x***	***x***	***x***	**Sym**	***x***	***x***
7. Bog myrtle *Myrica gale*	***x***	**Sym**	***x***	***x***	***x***	***x***	***x***	**Sym**	***x***

Pen y Castell is a relatively small and straightforward site, comprising three management units. The main focus of the management in Unit 1 and Unit 2 is the Eu Molinion vegetation, which will be managed to create optimum marsh fritillary habitat, the marshy grassland in these units will also be under sympathetic management. Neutral grassland is the main management focus in Unit 3, with the marshy grassland again under sympathetic management to benefit marsh fritillary butterflies.

Pen y Castell	**Management unit**								
	9	**10**	**17**						
SAC	✔	✔							
SSSI	✔	✔	✔						
NNR/CCW owned									
SAC features									
1. Eu Molinion meadows	**KH**	**KH**	***x***						
2. Marsh fritillary butterfly	**KS**	**KS**	**Sym**						
SSSI features									
3. Non SAC marshy grassland	**Sym**	**Sym**	**Sym**						
4. Dry neutral grassland	***x***	***x***	**KH**						
5. Bog myrtle	x	**sym**	**x**						

Bryn Bach Although the largest SSSI in the SAC, the site was treated as three discrete management units, making unitisation straightforward. Units 1 and 3 are dominated by marshy grassland vegetation (including EU Molinion in Unit 1) and managed to benefit marsh fritillary butterflies. The management of Unit 2 focuses on the neutral grassland habitat, which is restricted to this management unit on the site. Bog myrtle occurs in Unit 1.

Bryn Bach	**Management unit**								
	6	**15**	**7**	**16**					
SAC	✔		✔						
SSSI	✔	✔	✔	✔					
NNR/CCW owned									
SAC features									
1. Eu Molinion meadows	**KH**	***x***	***x***	***x***					
2. Marsh fritillary butterfly	**KS**	**Sym**	**KS**	**KS**					
SSSI features									
3. Non SAC marshy grassland	**Sym**	**Sym**	**KH**	**KH**					
4. Dry neutral grassland	***x***	**KH**	***x***	**x**					
5. Bog myrtle	**sym**	**x**	***x***	**x**					

Waun Fawr Eu Molinion is the main focus of the management effort at Waun Fawr, which is a single management unit comprising several fields. The management across the site aims to create optimum

marsh fritillary habitat, which is also sympathetic management for the remaining areas of marshy grassland and the neutral grassland present on the site.

Waun Fawr	**Management unit**								
	8								
SAC	✔								
SSSI	✔								
NNR/CCW owned									
SAC features									
1. Eu Molinion meadows	**KH**								
2. Marsh fritillary butterfly	**Sym**								
SSSI features									
3. Non SAC marshy grassland	**Sym**								
4. Dry neutral grassland	**Sym**								

4. CONSERVATION OBJECTIVES

Outline of the legal context and purpose of the 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.

Format of the conservation objectives

There is one conservation objective for each feature listed in section 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.

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] Web link: http://www.jncc.gov.uk/page-2199

Conservation Objective for Feature 1:
***Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) (EU Habitat Code: 6410)**

4.1(1) Vision for feature 1

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

- *eu-Molinion* marshy grassland will occupy between 50% and 55% of the total site area.
- The remainder of the site will be other semi-natural habitat or areas of permanent pasture.
- The following plants will be common in the *eu-Molinion* marshy grassland: purple moor-grass *Molinia caerulea*; meadow thistle *Cirsium dissectum*; *Carex hostiana; Carex pulicaris*; devil's bit scabious *Succisa pratensis*; carnation sedge *Carex panicea;* saw wort *Serratula tinctoria* and; tormentil *Potentilla erecta*.
- Cross-leaved heath *Erica tetralix* and common heather *Calluna vulgaris* will also be common in some areas.
- Rushes and species indicative of agricultural modification, such as perennial rye grass *Lolium perenne* and white clover *Trifolium repens* will be largely absent from the *eu-Molinion* marshy grassland.
- Scrub species such as willow *Salix* (excluding *Salix repens*) and birch *Betula* will also be largely absent from the *eu-Molinion* marshy grassland.
- All factors affecting the achievement of the foregoing conditions are under control.

4.2(1) Performance indicators for feature 1 (*Note:* The performance indicators are part of the conservation objective, not a substitute for it)

Table 1. Limits for maintenance of the *eu-Molinion* feature at Cefn Cribwr cSAC.

Conservation Objective for maintenance management		To maintain the *eu-Molinion* grassland at Cefn Cribwr SAC in favourable condition where
Extent	Upper Limit	As mapped (date?)(55% of the site (no encroachment into areas of neutral grassland *Myrica gale*, wet heath, flushes or swamp))
	Lower Limit	See Map 1 (as mapped during Phase II, apart from two additional areas described as potential habitat at Penycastell and Waun Fawr SSSI).
Quality	Upper Limit	None set
	Lower Limit	70% of the *eu-Molinion* grassland on **each** SSSI to be species rich fen meadow (all four SSSI have to pass in order for the SAC feature to be considered favourable).
Site Specific Habitat Definitions		
Eu-Molinion grassland		*Molinia caerulea* with *Cirsium dissectum* **or** *Molinia caerulea* with *Carex hostiana* **and** *Carex pulicaris*
Species rich fen meadow		Eu-Molinion grassland with *Succisa pratensis, Carex panicea, Potentilla erecta* and *Erica tetralix* (Bryn Bach only) within a 50cm radius **and** <25% in total of mesic grasses (*Holcus lanatus, Nardus stricta* and *Agrostis sp*.) **and** <20% *Cirsium palustre* **and** <50% *Juncus sp*. **and** *Trifolium repens, Ranunculus repens, Pteridium aquilinum, Betula, Quercus, Salix* (not *Salix repens*), *Alnus* and *Rubus* are absent **and** The vegetation height is between 10-50cm when measured with a Boorman's Disc

Performance indicators for feature condition			
Attribute	***Attribute rationale and other comments***	***Specified limits***	***Project code***
A1. Extent of *Eu Molinion* grassland	Monitoring is likely to be a map-based exercise. The area of *eu-Molinion* marshy grassland will be mapped as a baseline extent and the total area measured. Repeat monitoring will either re-map the site or review the baseline map in the field. *Eu-Molinion* grassland is defined	**Caeau Cefn Cribwr** *Upper limit*: As limited by other habitat types *Lower limit*: 30% of Management Units 1, 2 , 3 & 5 **Pen y Castell**	

	as stands of grassland vegetation where Molinia caerulea is present with Cirsium dissectum or with Carex hostiana and/or Carex pulicaris and with: *Succisa pratensis* *Carex panicea* *Serratula tinctoria* *Potentilla erecta* Lower limits are based on current extent *As mapped by Phase II survey with interpretation of possible expansion into other non SAC habitat i.e. scrub/bracken.*	*Upper limit*: As limited by other habitat types *Lower limit*: 10% of Management Units 1 & 2 **Bryn Bach** *Upper limit*: As limited by other habitat types *Lower limit*: 25% of Management Unit 1 **Waun Fawr** *Upper limit*: As limited by other habitat types *Lower limit*: 60% of Management Unit 1	
A2. Condition of the *Eu Molinion* grassland	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 *Succisa pratensis* as this is the host plant for the marsh fritillary butterfly – a key SAC species on this site. Limits for sward height in the late summer/ autumn have also been modified to ensure marshy grassland with a suitable vegetation structure is also available for the marsh fritillary population.	**Where** *Eu Molinion* grassland is the Key Habitat in the Management Units, **Caeau Cefn Cribwr -** 1, 2, 3 & 5 **Pen y Castell -** 1 & 2 **Bryn Bach -** 1 **Waun Fawr -** 1 *Upper limit*: Not required *Lower limit*: 70% of the *Eu Molinion* grassland is 'species-rich' fen meadow in good condition, characterised by: • key indicator species - *Molinia caerulea*, associated with: *Cirsium dissectum; Succisa pratensis; Carex panicea; Serratula tinctoria; Potentilla erecta* (plus *Calluna vulgaris*, *Erica tetralix* – Bryn-bach, Cefn Cribwr only); • negative indicator species – an absence or low frequency/cover of: *Holcus lanatus; Cirsium palustre; Trifolium repens; Ranunculus repens; Pteridium aquilinum;* • scrub- an absence or low frequency/cover of : *Betula; Quercus; Salix*(excluding *Salix repens*); *Alnus; Rubus;* • vegetation height - should be between 20-50cm in early	

		summer (Mid-May to end of June); • plant litter – should be no more than 10% cover. In addition and to ensure **suitable habitat for marsh fritillary** butterfly, *Lower limit: Succisa pratensis* will be present within 1 metre of 40% of sample points *Lower limit:* The sward height in 40% of the marshy grassland will be between 10 and 20 cm in late summer/autumn.	
Performance indicators for factors affecting the feature			
Factor	***Factor rationale and other comments***	***Operational Limits***	***Project code***
F1. Livestock grazing	The *eu-Molinion* marshy grassland has been maintained through traditional farming practices. Without an appropriate grazing regime, the grassland would become rank and eventually turn to scrub and woodland. Light grazing by cattle and ponies between April and November each year is essential in maintaining the marshy grassland communities.	*Upper limit*: Refer to management agreement *Lower limit*: The *eu Molinion* grasslands will be subject to light summer grazing by cattle and/or ponies at least 4 in every 5 years. Light summer grazing is defined as - cattle and/or ponies at a rate of 0.4 SU/ha/year for the period April to November	
F2. Hydrological regime	The marshy grassland communities are strongly influenced by the quantity and base status of the groundwater. Reductions in the quality and quantity of the water in the springs and watercourses feeding the site may lead to a loss of marshy grassland or changes in species composition. Conversely, reduced/impeded drainage may lead to ground-water stagnation and a different change in species composition, e.g. increased abundance of rushes.	No limits set. Pending a fuller understanding of current situation and habitat requirements.	
F3. Adjacent land use	Two of the component SSSIs lie close to opencast coal workings and other active mineral workings. These may have indirect effects on the hydrological regime (see above).	No limits set. May need to be considered in the future.	

Other factors considered include – Owner/occupier objectives - the owners/occupiers of the land typically have an interest in securing some financial/agricultural benefit from the land. This return could be optimised by the agricultural improvement of the land, e.g. by installing new drainage, fertiliser application, or re-seeding; however these operations would cause significant long-term damage to the *eu-Molinion* marshy grassland. This factor will be controlled through management agreements and the SSSI legislation. An operational limit is not required.

Conservation Objective for Feature 2:
Marsh fritillary butterfly *Euphydryas* (*Eurodryas, Hypodryas*) *aurinia* (EU Species Code: 1065)

4.1(2) Vision for feature 2

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

- The site will contribute towards supporting a sustainable metapopulation of the marsh fritillary in the Cefn Cribwr area. This will require a minimum of 50ha of suitable habitat, of which at least 10ha must be in good condition, although not all is expected to be found within the SAC. Some will be on nearby land within a radius of about 2km.
- The population will be viable in the long term, acknowledging the extreme population fluctuations of the species.
- Habitats on the site will be in optimal condition to support the metapopulation.
- At least 40ha within the SAC & associated SSSI will be marshy grassland suitable for supporting marsh fritillary, with *Succisa pratensis* present and only a low cover of scrub.
- At least 8ha will be marsh fritillary breeding habitat in good condition, dominated by purple moor-grass *Molinia caerulea*, with *S. pratensis* present throughout and a vegetation height of 10-20cm over the winter period.
- Suitable marsh fritillary habitat is defined as stands of grassland where *Succisa pratensis* is present and where scrub more than 1 metre tall covers no more than 10% of the stands
- Optimal marsh fritillary breeding habitat will be characterised by grassland where the vegetation height is 10-20 cm, with abundant purple moor-grass *Molinia caerulea*, frequent "large-leaved" devil's-bit scabious *Succisa pratensis* suitable for marsh fritillaries to lay their eggs and only occasional scrub. In peak years, a density of 200 larval webs per hectare of optimal habitat will be found across the site. (Fowles 2004[2])
- The marshy grassland will be well sheltered by hedgerows and mature trees.
- All factors affecting the achievement of the foregoing conditions are under control.

[2] *Fowles AP (2004) Conservation objective for Marsh Fritillaries on marshy grassland. CCW internal document.*

4.2(2) Performance indicators for feature 2 (*Note:* The performance indicators are part of the conservation objective, not a substitute for it)

Performance indicators for feature condition			
Attribute	***Attribute rationale and other comments***	***Specified limits***	***Project code***
A1. Density of larval webs	Larval web density in a 'good' year for marsh fritillary has been identified as a measurable performance indicator of the population. During peaks in the population cycle a density of 200 webs per hectare of suitable habitat is an appropriate target to set as defining favourable condition for strong populations. Estimate the density of larval webs via random transects running across the area of suitable habitat, counting all webs up to one metre either side of the transect. For this site, the total transect area should cover a minimum of 5% (1.25ha) of the area of suitable habitat. The transects should also be representative of the proportion of good to suitable habitat (see Feature 1 & 3 – Attribute 2. Wide fluctuations in abundance occur, with dramatic crashes in population size occurring every ten years or so. Recovery from these crashes may take 4 or 5 yrs.	*Upper limit:* not required *Lower limit:* at least 200 per hectare in at least one year every six years. Recording should be (initially) targeted on those Management Units where the marsh fritillary is a Key Species (KS), these are, **Caeau Cefn Cribwr** 5, 7 & 8 **Pen y Castell** 1 & 2 **Bryn Bach** 1 & 3	
A2. Distribution of larval webs	In most cases the marsh fritillary occurs in metapopulations where dispersal from a core population during good years permits colonisation of nearby patches of habitat. Periodic extinctions and colonisations of patches can be tolerated as long as sufficient habitat overall is in good condition for breeding.	*Upper limit:* not required *Lower limit:* Larval webs should be present every year on at least three of the four component SSSI. Recording should be (initially) targeted on those Units where the marsh fritillary is a Key Species (KS), these are, **Caeau Cefn Cribwr** 5, 7 & 8 **Pen y Castell** 1 & 2 **Bryn Bach** 1 & 3	
Performance indicators for factors affecting the feature			
Factor	***Factor rationale and other comments***	***Operational Limits***	***Project code***
F1. Extent & quality of the marshy	The marsh fritillary is a highly localised and sedentary butterfly that inhabits unimproved *Molinia*	Refer to Feature 1 & 3 - Attributes 1 & 2. Any Management Units where marsh fritillary is a Key	

grassland as habitat for marsh fritillary	grassland in the lowlands. It has an annual life-cycle and feeds as a larva on *Succisa pratensis*, especially on large-leaved plants that are growing amongst vegetation that is between 10 and 20 cms tall in late summer/autumn. The larvae over-winter communally amongst litter in such situations and the shelter provided by leaf litter and tussocks is considered to be important. The conditions stipulated in the conservation objective/performance indicators for Feature 1 (*Eu Molinion* marshy grassland) and Feature 3 (other nonSAC marshy grassland) will ensure that these requirements are met.	Species (KS) or will benefit from sympathetic management (Sym), these are **Caeau Cefn Cribwr** 1, 2, 3, 5, 6, 7, 8, 9 **Pen y Castell** 1, 2 & 3 **Bryn Bach** 1, 2 & 3 **Waun Fawr** 1	
F2. Livestock grazing	Necessary habitat requirements will met through the appropriate management of Feature 1 (*Eu Molinion* marshy grassland) and Feature 3 (other non SAC marshy grassland).	Refer to Feature 1 & 3.	
F3. Shelter belts	Hedgerows, woodland and mature trees in and around the site provide the sheltered conditions which the marsh fritillary require. These should be retained and managed.	On each component SSSI *Upper limit:* As limited by other habitat types *Lower limit:* at any given time least 80% of the existing mature hedgerows (over 4 metres tall) should be retained. The remaining 20% should be subject to a sustainable hedgerow management rotation. The existing blocks of woodland should be retained.	
F4. Hydrological regime	Refer to Feature 1 (*Eu Molinion* marshy grassland) and Feature 3 (other nonSAC marshy grassland).	Refer to Feature 1 & 3.	
F5. Burning	Burning is not a sympathetic habitat management tool for maintaining marsh fritillary populations.	*Upper limit:* Burning should only be employed in the restoration of *Eu Molinion*/marshy grassland, where marsh fritillaries are **known not to breed**.	

Other factors considered include –

Owner/occupier objectives - the owners/occupiers of the land typically have an interest in securing some financial/agricultural benefit from the land. This return could be optimised by the agricultural improvement of the land, e.g. by installing new drainage, fertiliser application, or re-seeding. However these operations would cause significant long-term damage to the marsh fritillary habitat, namely the marshy grassland. This factor will be controlled through management agreements and the SSSI legislation. An operational limit is not required.

Weather conditions - Weather conditions have an effect on the breeding success of the marsh fritillary. In particular, poor weather conditions during the adult flight period will reduce opportunities for mating, egg-laying and dispersal from core areas. Weather conditions during early spring influence the rate of larval development of the marsh fritillary and the effects of the parasitic wasp (see below). This factor is outside the influence of the site manager and an operational limit is not required.

Parasites - The larvae of marsh fritillaries can be parasitised by species of braconid wasp of the *Cotesia* genus. The parasites can have good years and infect a large number of larval webs, causing a crash in the subsequent adult population of marsh fritillary. This factor is outside the influence of the site manager; and an operational limit is not required.

Metapopulations - Some consideration needs to be given to setting the conservation objectives for this marsh fritillary population in the context of other near-by populations

Conservation Objective for Feature 3:
Non-SAC marshy grassland

4.1(3) Vision for feature 3

As Feature 1 (*Eu Molinion* marshy grassland) with non-SAC marshy grassland occupying between X and Y %

4.2(3) Performance indicators for feature 3 (*Note:* The performance indicators are <u>part of</u> the conservation objective, not a substitute for it)

Performance indicators for feature condition			
Attribute	***Attribute rationale and other comments***	***Specified limits***	***Project code***
A1. Extent of marshy grassland	Monitoring is likely to be a map-based exercise. The area of *eu-Molinion* marshy grassland will be mapped as a baseline extent and the total area measured. Repeat monitoring will either re-map the site or review the baseline map in the field. *Eu-Molinion* grassland is defined as stands of grassland vegetation where at least four of the following species are present: *Molinia caerulea* *Cirsium dissectum* *Succisa pratensis* *Carex panicea* *Serratula tinctoria* *Potentilla erecta* Lower limits are based on current extent at time of initial Phase II survey plus any scope for quick expansion into other non-qualifying habitat	Where marshy grassland is the Key Habitat (KH) or sym habitat in the Management Units, **Caeau Cefn Cribwr -** 1, 2, 3, 5 - 9 **Pen y Castell -** 1 & 2 **Bryn Bach –** 1 - 4 **Waun Fawr -** 1 **Caeau Cefn Cribwr** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent? **Pen y Castell** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent **Bryn Bach** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent **Waun Fawr** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent	
A2. Condition of the *marshy* grassland	As per Feature 1(Eu Molinion grassland)	As per Feature 1(Eu Molinion grassland)	
Performance indicators for factors affecting the feature			
Factor	***Factor rationale and other comments***	***Operational Limits***	***Project code***
AS FEATURE 1			

Conservation Objective for Feature 4:
Neutral grassland

4.1(4) Vision for feature 4

4.2(4) Performance indicators for feature 4(*Note:* The performance indicators are part of the conservation objective, not a substitute for it)

Performance indicators for feature condition			
Attribute	***Attribute rationale and other comments***	***Specified limits***	***Project code***
A1. Extent of neutral grassland	Monitoring is likely to be a map-based exercise. The area of neutral grassland will be mapped as a baseline extent and the total area measured. Repeat monitoring will either re-map the site or review the baseline map in the field. Lower limits are based on current extent at time of initial Phase II survey plus any scope for quick expansion into other non-qualifying habitat	Where neutral grassland is the Key Habitat (KH) or sym habitat in the Management Units, **Caeau Cefn Cribwr – 4 & 6** **Pen y Castell – 3** **Bryn Bach – 2** **Waun Fawr -** 1 **Caeau Cefn Cribwr** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent **Pen y Castell** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent **Bryn Bach** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent **Waun Fawr** *Upper limit*: As limited by other habitat types *Lower limit*: Current extent	
A2. Condition of the neutral grassland	In good condition, the neutral grassland can be identified as 'species-rich neutral grassland', characterised by: o key indicator species – *Festuca rubra, Cynosurus cristatus* and *Agrostis capillaris*, associated with: *Centaurea nigra; Lotus corniculatus; Succisa pratensis; Potentilla erecta;* o negative indicator species – an absence or low frequency/cover of: *Holcus lanatus; Trifolium repens; Ranunculus repens; Pteridium aquilinum; Lolium perenne;*		

	o scrub- an absence or low frequency/cover of: *Betula; Quercus; Salix; Alnus; Rubus;* o average vegetation height - should be between 10-20cm in early summer (Mid-May to end of June); o plant litter – should be no more than 10% cover.		

Conservation Objective for Feature 5:
Viper's grass (*Scorzonera humilis*)

4.1(5) Vision for feature 5

To be completed

4.22(5) Performance indicators for feature 5 (*Note:* The performance indicators are part of the conservation objective, not a substitute for it)

Performance indicators for feature condition			
Attribute	***Attribute rationale and other comments***	***Specified limits***	***Project code***
A1.	• The number and distribution of flowering/fruiting plants is:	Where vipers grass is the Key species(KS) in the Management Units, **Caeau Cefn Cribwr -** 1, 2, 3 **Caeau Cefn Cribwr** **Upper limit:** not required. **Lower limit:** at least 1000 plants, present in last mapped extent (five fields *Upper limit*:	

Conservation Objective for Feature 6: Marsh fern (Thelypteris palustris)

4.1(6) Vision for feature 6

To be completed

4.22(6) Performance indicators for feature 6 (*Note:* The performance indicators are part of the conservation objective, not a substitute for it)

Performance indicators for feature condition			
Attribute	***Attribute rationale and other comments***	***Specified limits***	***Project code***
A1.	• The distribution of Thelypteris palustris is:	Where marsh fern is a sym species in the Management Unit, **Caeau Cefn Cribwr –** 2 **Caeau Cefn Cribwr** **Upper limit:** not required. **Lower limit:** at least 1000+ ramets in at least one location (South east corner of unit 2).	

Conservation Objective for Feature 7:
Bog myrtle (Myrica gale)

4.1(7) Vision for feature 7

To be completed

4.22(7) Performance indicators for feature 7 (*Note:* The performance indicators are part of the conservation objective, not a substitute for it)

Performance indicators for feature condition			
Attribute	***Attribute rationale and other comments***	***Specified limits***	***Project code***
A1.	• The distribution of *Myrica gale* is:	Where bog myrtle is a sym species in the Management Units, **Caeau Cefn Cribwr –** 2 & 8 **Pen y Castell –** 2 **Bryn Bach –** 1 **Bryn Bach** **Upper limit:** not required. **Lower limit:** present in at least fields K and O (ref. Phase II survey	

5.ASSESSMENT OF CONSERVATION STATUS AND RATIONALE: SUMMARY

This part of the document provides:

- A summary of the assessment of the conservation status of each feature or, (where features are aggregated for the purposes of objective setting), each group of features.

- A summary of the management rationale required to maintain the features in, or restore them to, favourable conservation status.

Part 6 of the document contains a summary of the Action Plan arising from the management rationale

Assessment of conservation status and management rationale for Feature 1: *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) (EU Habitat Code: 6410)

5.1(1) Conservation status assessment for feature 1

This assessment relates to monitoring results from 2001 and provisional results from monitoring undertaken in 2007.

The current status of the feature is **Unfavourable**

The status within each management unit where Eu-Molinion is Key Habitat:

Caeau Cefn Cribwr SSSI:
MU1 Unfavourable
MU2 Unfavourable
MU3 Unfavourable
MU5 Unfavourable

Pen y Castell SSSI:
MU1 Unfavourable
MU2 Unfavourable

Bryn Bach SSSI:
MU1 Unfavourable

Waun Fawr SSSI:
MU1 Unfavourable

5.2(1) Management rationale for feature 1

Habitat management
The *eu-Molinion* marshy grassland has been maintained through traditional farming practices.

Livestock grazing Without an appropriate grazing regime, the grassland would become rank and eventually turn to scrub and woodland. Conversely, overgrazing, or grazing by inappropriate stock (particularly sheep) would also lead to unwanted changes in species composition, through selective grazing, increased nutrient inputs and poaching. Grazing levels (the number of grazing animals and the period of grazing) need to be assessed against feature condition and modified accordingly. The preferred livestock regime is light grazing by cattle and ponies between April and November at a rate of 0.4LSU/ha/yr.

Scrub and rushes Grazing alone may not be sufficient to prevent the gradual encroachment of scrub, woodland or bracken. A scrub control programme may need to be implemented. The abundance of rushes may also increase and may need to be controlled by topping subject to condition assessments.

The habitat management required on this site will be best achieved through management agreements with the owners/occupiers. Agreements should specify grazing periods and levels and other details necessary for the management of the site, namely scrub control, rush topping, and fencing/gates required.

- Secure management agreement/leases with appropriate owners/occupiers on all areas of the SAC;

- Maintain and ensure compliance with management agreements;
- Liase with owners/occupiers.

Hydrology

The *eu-Molinion* marshy grassland is dependent on a number of springs and watercourses feeding the site. Investigation is required to achieve a better understanding of the hydrological regime and to confirm that adjacent mineral workings are having no significant adverse effects.

- In liaison with the Environment Agency, investigate the hydrological regime of the cSAC and the relationship with adjacent mineral workings.

Off-site pollution

The effects of the releases of lime dust into the atmosphere from the adjacent works on the SSSI are not known; these emissions are subject to the authorisation of other competent authorities, particularly the Environment Agency. Investigation is required to establish the existence and significance of any adverse effects.

- In liaison with the Environment Agency, investigate the effects of lime deposition on the eu-Molinion marshy grassland.

Note: The management requirements for the *Eu-Molinion* marshy grassland (SAC feature) are consistent with those of other SSSI features, namely the SSSI marshy grassland, the dry neutral grassland and the species interests of the site.

Assessment of conservation status and management rationale for Feature 2: Marsh fritillary butterfly *Euphydryas* (*Eurodryas, Hypodryas*) *aurinia* (EU Species Code: 1065)

5.1(2) Conservation status assessment for feature 2

Both larvae and adults of marsh fritillary have been recorded on the site more recently, but it is suspected that the site does not currently support the required density of larval webs that would indicate a sustainable metapopulation.
The current status of the feature is **unfavourable**

The status within each management unit where marsh fritillary butterfly is the Key species:

Caeau Cefn Cribwr SSSI:
MU5 **Unfavourable**
MU7 **Unfavourable**
MU8 **Unfavourable**

Pen y Castell SSSI:
MU1 **Unfavourable**
MU2 **Unfavourable**

Bryn Bach SSSI:
MU1 **Unfavourable**
MU3 **Unfavourable**

5.2(2) Management rationale for feature 2

Habitat management
All the habitat management requirements for the marsh fritillary will be met through the appropriate management of the *Eu-Molinion* grassland (Feature 1) and the non-SAC marshy grassland (Feature 3).

The links between breeding success of the marsh fritillary, weather conditions and parasite populations are generally accepted, however the management of the site can do little to influence the effects.

The life cycle and population dynamics of the marsh fritillary, particularly the periodic population crashes, make it difficult assess whether the population is in a state to maintain itself in the long-term. In addition, further site specific data is required to establish confidence in the influence of grazing levels on habitat condition for marsh fritillaries. Annual monitoring of larval web densities and habitat condition are required until some confidence on these issues is achieved.

Assessment of conservation status and management rationale for Feature 3: Marshy grassland

5.1(3) Conservation status assessment for feature 3

The current status of the feature is **Unfavourable** (as Eu-Molinion is unfavourable)

The status within each management unit where Marshy grassland is the Key Habitat:

Caeau Cefn Cribwr SSSI:
MU5 **Unfavourable**
MU7 **Unfavourable**
MU8 **Unfavourable**

Bryn Bach SSSI:
MU3 **Unfavourable**

5.2(3) Management rationale for feature 3

The management requirements of the SSSI marshy grassland are entirely consistent with those of the areas of *Eu-Molinion* marshy grassland (Feature 1) and these two features will be managed collectively.

Assessment of conservation status and management rationale for Feature 4: Dry neutral grassland

5.1(4) Conservation status assessment for feature 4

This feature has not been formally monitored but visits and observations over the years suggest that although grazed at correct levels over most of the site there has been some scrub encroachment in Caeau Cefn Cribwr SSSI, Pen y Castell SSSI and Bryn Bach SSSI.

The status within each management unit where Dry neutral grassland is the Key Habitat:

Caeau Cefn Cribwr SSSI:
MU4 **Unfavourable**
MU6 **Unfavourable**
MU9 **Unfavourable**

Pen y Castell SSSI:
MU3 **Unfavourable**

Bryn Bach SSSI:
MU2 **Unfavourable**

5.2(4) Management rationale for feature 4

The management requirements of the dry neutral grassland are very similar to those stated in the management rationale for the Eu-Molinion feature above – summer grazing at similar levels but this feature can cope with slightly increased levels. Care should be taken with scrub encroachment.

Assessment of conservation status and management rationale for Feature 5: Viper's grass (*Scorzonera humilis*)

5.1(3) Conservation status assessment for feature 5

Provisional monitoring / surveillence was undertaken in 1997 and numbers of individuals were high (1000 +) in management Unit 1. Casual observations over subsequent years and as recently as 2007 suggest that it is present at similar levels. Small populations have been noted in units 2 & 3 of Caeau Cefn Cribwr in the latter recently but not seen in unit 2 for a number of years , no other populations of *Scorzonera* has been noted elsewhere within the SAC.

The status within each management unit where **Viper's grass (*Scorzonera humilis*)** is the Key Species:

Caeau Cefn Cribwr SSSI:
MU1 **Favourable**
MU2 **Unfavourable**
MU3 **Favourable**

5.2(4) Management rationale for feature 5

The management requirements of viper's grass are very similar to those stated in the management rationale for the Eu-Molinion feature above – summer grazing at similar levels but this feature can cope with slightly increased levels. Care should be taken with scrub encroachment.

Assessment of conservation status and management rationale for Feature 6: Marsh fern (*Thelypteris palustris*)

5.1(3) Conservation status assessment for feature 6

No formal monitoring has been undertaken for this feature but observations since it's discovery in 1994 suggest it is stable within the single area that it occurs within Unit 2 of Caeau cefn cribwr SSSI. The last observation was in 2007.

The status within each management unit where **marsh fern (Thelypteris palustris)** is the Key Species:

Caeau Cefn Cribwr SSSI:
MU2 **Favourable**

Assessment of conservation status and management rationale for Feature 7: Bog myrtle (*Myrica gale*)

5.1(3) Conservation status assessment for feature 7

No formal monitoring has been undertaken for this feature but observations since it's discovery in 1991 suggest it is stable within the areas that it occurs within Caeau Cefn Cribwr SSSI, Pen y Castell SSSI and Bryn Bach SSSI. The last observation was in 2007.

Caeau Cefn Cribwr SSSI:
MU2 **Favourable**
MU8 **Favourable**

Pen y Castell SSSI

MU2 **Favourable**

Bryn Bach SSSI:
MU1 **Favourable**

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?
2	000827	CCC Field I	Parts of this field are very wet, mostly through base-rich flushing but also in places from a blocked ditch on the southern boundary, in process of being addressed under existing management agreement. It requires only very light grazing, by cattle, in summer. This management is in place under a management agreement. Field is grazed as a unit with an improved field up-slope from it and there is a need to watch for any problems that may arise from this in future.	No
1	000828	CCC Fields A- D	Appropriate grassland management (light summer grazing by cattle) is in place under a management agreement. Viper's-grass also thrives under this regime. A slight reduction in grazing pressure is desirable for the benefit of marsh fritillaries.	Yes
3	000830	CCC Field L	Direct management by CCW is in place following several years without any grazing in the late 1990s. This restoration management is now showing results and needs to be maintained.	No
4	000831	CCC Field M	Direct management by CCW is in place after several years without grazing in the late 1990s. This small field supports neutral grassland (not a SAC feature) and has suffered from encroachment of bramble from all boundaries. Any further spread of bramble must be prevented and this will be an annual task.	Yes
5	000832	CCC Field N-O	These two small fields have been left ungrazed in some recent years and subject to limited horse-grazing and ad-hoc scrub clearance in others. There is a need for CCW to liase with the owner to ensure that management is more structured.	Yes
6	000843	BB Field B, I-O	A series of several fields, most of which are affected by scrub encroachment, particularly willow. (The most westerly field of this unit is affected only along boundaries.) A programme of scrub clearance has been initiated under an existing management agreement but the work will take several years at current rate of progress and could potentially be intensified. Light summer grazing by cattle is in place and was also the historic management here for at least 15 years before the agreement started. There is an adjacent sandstone quarry, currently not working below the water table. Its existing planning permission includes a condition that before any sub-water-table working takes place, a monitoring borehole must be installed in the SAC and water levels must be recorded for a year. The greatest potential benefit would be obtained by starting water-level recording sooner rather than later, even though there is no intention to work below the water table yet.	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
7	000845	BB Field D	There is a need for CCW to re-establish contact with the owner of this field and check that grazing levels and type are still appropriate	Yes
8	000848	Wf Fields A-F	Light summer grazing by cattle takes place under existing management agreement. The grassland is recovering from past sheep-grazing before notification (December 2000) and also by stray sheep at intervals since. Fences were repaired in early 2007 so this should not be a problem in future.	No
9	000849	PyC Field D and part F	Currently grazed by horses under an existing management agreement. New owners took over at about the same time the SSSI was notified. They cleared large amounts of scrub after a period of neglect, during which SAC feature grassland had been reduced to 'islands' in each field. This accounts for the current condition of the outer parts of the fields where recovery may be expected to take years.	No
10	000850	PyC Field E and part F	These fields are grazed from time to time by cattle, but not necessarily at the right levels or right time of year. There is a need for CCW to re-establish contact with the tenant and owners to establish a better grazing regime. Some scrub control is also desirable, and would ideally be arranged by CCW under an agreement.	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[3]:

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 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

[3] See JNCC guidance on Common Standards Monitoring http://www.jncc.gov.uk/page-2272

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.**[4]

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.

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.

Metapopulation **A group of distinct populations of a species, separated by areas of either unoccupied, or unsuitable, habitat. These populations can support one another, so that when one population becomes extinct, the species can recolonise from a nearby population.**

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

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

an expected norm. In **Common Standards Monitoring**, the formulated standard is the quantified expression of favourable **condition** based on **attributes**.

Operational limits The levels or values within which a **factor** is considered to be acceptable in terms of its influence on a **feature**. A factor may have both upper and lower operational limits, or only an upper limit or lower limit. For some factors an upper limit may be zero.

Performance indicators The **attributes** and their associated **specified limits**, together with **factors** and their associated **operational limits,** which provide the standard against which information from **monitoring** and other sources is used to determine the degree to which the **conservation objectives** for a **feature** are being met. Performance indicators are part of, not the same as, conservation objectives. See also **vision for the feature**.

Plan or project **Project:** Any form of construction work, installation, development or other intervention in the environment, the carrying out or continuance of which is subject to a decision by any public body or statutory undertaker.
Plan: a document prepared or adopted by a public body or statutory undertaker, intended to influence decisions on the carrying out of **projects.** Decisions on plans and projects which affect Natura 2000 and Ramsar sites are subject to specific legal and policy procedures.

Site integrity The coherence of a site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is designated.

Site Management Statement (SMS) The document containing CCW's views about the management of a site issued as part of the legal notification of an SSSI under section 28(4) of the Wildlife and Countryside Act 1981, as substituted.

Special Feature See **feature**.

Specified limit The levels or values for an **attribute** which define the degree to which the attribute can fluctuate without creating cause for concern about the **condition** of the **feature**. The range within the limits corresponds to favourable, the range outside the limits corresponds to unfavourable. Attributes may have lower specified limits, upper specified limits, or both.

Unit See **management unit.**

Vision for the feature The expression, within a **conservation objective**, of the aspirations for the **feature** concerned. See also **performance indicators.**

Vision Statement The statement conveying an impression of the whole site in the state that is intended to be the product of its **conservation management.** A 'pen portrait' outlining the **conditions** that should prevail when all the **conservation objectives** are met. A description of the site as it would be when all the **features** are in **favourable condition**.

8. REFERENCES

Woodman J & Mockridge C 1993. CCW Phase II Lowland Grassland Survey, Bryn-bach (Site Code: SS88/6) site pack. Countryside Council for Wales.

Woodman J & Mockridge, C 1993. CCW Phase II Lowland Grassland Survey, Waun-fawr (Site Code: SS88/4) site pack. Countryside Council for Wales.

Woodman J & Mockridge, C 1993. CCW Phase II Lowland Grassland Survey, Cefn Cribwr Meadows SSSI and Annex (Site Code: SS88/7) site pack. Countryside Council for Wales.

Woodman J & Mockridge, C 1994. CCW Phase II Lowland Grassland Survey, Pen y Castell (Site Code: SS88/10) site pack. Countryside Council for Wales.

Appendix C Core Management Plan (Including Conservation Objectives) for Kenfig SAC

CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

CORE MANAGEMENT PLAN
(INCLUDING CONSERVATION OBJECTIVES)

FOR

Kenfig/Cynffig SAC

Date: 9th April 2008 (Minor map edit, February 2013)

Approved by: David Mitchell

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

Cyngor Cefn Gwlad Cymru
Countryside Council for Wales

NATURA 2000

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CONTENTS

PREFACE

This document provides the main elements of the 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 the 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 the 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 overall aim for the SAC is that the natural coastal and dune-forming processes that determine the dynamics and proportions of habitats at Kenfig should be allowed to continue. Existing habitats should be maintained where possible by management of factors within human control.

Approximately 57% of the site comprises sand dunes, supporting a broad range of plant community types. Natural processes largely govern the area of the dunes, which grade from shifting embryonic dunes with an abundance of bare sand (between a quarter and a half of the dune area), to a more fixed stable dune community. This range of communities, with a high proportion of sparsely vegetated and open dune slacks or wet hollows, should be maintained or increased. The condition of these habitats is dependant on a number of factors including the nutrient state of the aquatic system and quantity of water, as well as the management regime.

Although salt marsh makes up less than 2% of the site, this habitat is rare along the Glamorgan coast. Here it includes plant species such as sea heath and samphire (*Salicornia spp.*). Natural processes, largely determine the area of the salt marsh but where possible the area should be maintained or increased.

Nationally rare and scarce plants, such as petalwort and fen orchid, which are associated with the dunes, should not reduce in range within their habitats, or lose the ability to reproduce and sustain themselves through factors within human control. Populations of other national and local rarities such as rough stonewort, hair-like pondweed, Irish ruffwort, chalk hook-moss, variegated horsetail, maiden pink, sea stock, rock sea-lavender, round-leaved wintergreen and dune fescue should also be maintained.

Populations of rare invertebrates including shrill carder bee, grizzled skipper and small blue butterflies, medicinal leech, strandline beetle (*Eurynebria complanata*) and the weevils *Pachytychius quinquepunctatus*, *Glocianus pilosellus* should be maintained. The site should also support a diverse invertebrate assemblage such as solitary wasps, stiletto flies, robber flies and mining bees, which are associated with the range of sand dune habitats present.

The site should also support nationally and locally rare fungi, associated with the sand dune habitats, including the nail fungus *Poronia punctata*, the ink cap fungus *Coprinus ammophilae*, the stalked puffball *Tulostoma brumale* and the milk-cap fungus *Lactarius controversus*, as well as a diverse assemblage of other macrofungi.

Several nationally important and species rich intertidal communities are found within the coastal front of the SAC, such as rock pools, soft piddock bored substrata and sand influenced biogenic reefs, including honeycomb worm *Sabellaria* reefs. The inter-tidal communities should remain mainly undisturbed, with sustainable populations maintained by maritime influences, and tidal movement.

Management of the site should promote the natural diversity of the sand dune and salt marsh habitats. Due to the nature of the site this will involve clearance of scrub, as natural seral progression would otherwise result in the dune system becoming dominated by scrub and woodland. In the case of the Merthyr Mawr section, this will include control of sea buckthorn.

Kenfig pool is a fine example of a moderately nutrient rich lake with a rich bottom-growing flora of stoneworts. This habitat type is characterised by water with a high base content usually confined to areas of limestone and other base-rich substrates from which the dissolved minerals are derived. Such water bodies are characterised by very clear water and low nutrient status. They are therefore largely restricted to situations where the catchment or aquifer from which they are supplied with water remains relatively unaffected by intensive land-use or other sources of nutrients, and they are most often found in areas supporting mosaics of semi-natural vegetation. The stoneworts are the most prominent component of the vegetation at Kenfig Pool and they occur as dense beds that cover a significant part of the lake bottom over sandy and muddy marl deposits. Kenfig Pool contains a number of rare and local stonewort species. This element of the site may need to be managed to ensure the nutrient state of the lake is maintained and that there are no detrimental impacts from existing or future management activities.

2. SITE DESCRIPTION

2.1 Area and Designations Covered by this Plan

Grid references: Eastings and Northings 279070, 181910 (Kenfig centre of site)
286280, 176890 (Merthyr Mawr centre)

Unitary authorities: **Bridgend County Borough Council**
Vale of Glamorgan
Neath and Port Talbot

Area (hectares): 1191.67

Designations covered:
SAC consisting of 2 separate SSSI. 2 National Nature Reserves (NNR), a Local Nature Reserve (LNR), and a proposed LNR:
Kenfig/Cynffig SSSI
Kenfig Pool and Dunes NNR
Kenfig Pool and Dunes LNR
Merthyr Mawr SSSI
Merthyr Mawr Warren NNR
Newton Burrows LNR (proposed)

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

2.2 Outline Description

This plan covers the Kenfig SAC, which consists of two SSSI (Cynffig/Kenfig and Merthyr Mawr).

2.3 Outline of Past and Current Management

Natural succession to mature habitats within the dune systems can be detrimental to the plant communities of the dune grassland and humid dune slacks, including species of early successional habitats such as *Liparis loeselii* and *Petalophyllum ralfsii*. Kenfig and Merthyr Mawr have a long history of human land use, including grazing, aggregate extraction and military training, although the latter activities ceased a long time ago. Offshore aggregate extraction continues to the present day. Both component parts of the SAC are National Nature Reserves and therefore used as a public open space, with recreational activities including walking, fishing and horse riding, which can impact on management.

Livestock grazing at Kenfig was practised under a commons type regime during the period of medieval township, and rabbits were present from the 13th Century onwards, although myxamatosis and viral haemorrhagic disease later reduced the population. In recent years Kenfig Pool and Dunes NNR has predominantly been grazed by sheep, although cattle have been re-introduced to part of the site in the last few years. The grazing as a whole is currently under review. Selected dune slacks are mown to provide appropriate conditions for maintenance of these particular habitats. Other management takes place to encourage rabbit grazing; this includes mowing and burrow creation on drier areas adjacent to dune slacks. Overall, Kenfig is similar to many dune systems in the UK in that it has become over-stabilised and is losing much of the successionally young habitat types. There has been some management to restore this habitat, with the creation of three ‘scrapes’ in dune slacks adjacent

to those containing *L. loeselii* and *P. ralfsii* populations, where the vegetation was taken back to bare sand.

At Merthyr Mawr NNR, the main focus of ongoing management is control of *Hippophae rhamnoides*, which is an introduced species here, and scrub. This management will benefit the two main SAC features represented on this component of the site - dune grassland and *P. ralfsii*. Merthyr Mawr is currently grazed by rabbits, with cattle also grazing on part of the site.

It is thought that the dune slacks at Kenfig and Merthyr Mawr as well as Kenfig Pool are mainly fed by groundwater, and possibly a deep Carboniferous Limestone aquifer (Davidson & Appleby, 2003). There are also three small ephemeral streams that enter Kenfig Pool. Maintenance of the natural hydrological regime of both dune systems is critical for the maintenance of the character, composition and condition of the features.

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.

A map showing the management units referred to in this plan is shown below:

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

Unit number	SAC	SSSI	NNR	LNR
Kenfig SSSI				
1	✔	✔		✔
2	✔	✔	✔	✔
3		✔		
4		✔		
5	✔	✔	✔	✔
6	✔	✔	✔	✔
7	✔	✔		
8	✔	✔		
9	✔	✔		
Merthyr Mawr SSSI				
10	✔	✔	✔	
11	✔	✔	✔	
12	✔	✔		Proposed
13	✔	✔		Proposed
14	✔	✔		
15	✔	✔		
16		✔		

3. THE SPECIAL FEATURES

3.1 Confirmation of Special Features

Designated feature	***Relationships, nomenclature etc***	***Conservation Objective in part 4***
SAC features		
Annex I habitats that are a primary reason for selection of this site	*Referred to in this plan as:*	
2130 Fixed dunes with herbaceous vegetation (`grey dunes`) * Priority Feature	Fixed Dunes	3
2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)	Dune slacks with Salix	1/2
2190 Humid dune slacks	Dune slacks	1/2
3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.	*Chara* beds	4
Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site		
1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	Salt marsh	5
Annex II species that are a primary reason for selection of this site		
1395 Petalwort *Petalophyllum ralfsii*	Petalwort	6
1903 Fen orchid *Liparis loeselii*	Fen Orchid	7
SSSI features		
The following is a list of current SSSI features; where these directly relate to SAC and SPA features, they have not been listed.		
Sand dune		
Standing water Marl/High alkalinity		
Dune woodland		
Sand influenced biogenic reefs (eg. *Sabellaria* Honeycomb worm reefs)		
Rock pools		
Soft piddock bored substrata		
Stonewort assemblage		
Assemblage of Red Data Book and/or Nationally scarce plants		
Dune macrofungi assemblage		
Tulostoma melanocyclum (fungi)		

Dune invertebrate assemblage		
Glocianus pilosellus (weevil)		
Bombus sylvarum (shrill carder bee)		
Colletes cunicularis (mining bee)		
*Pyrgus malvae (*grizzled skipper)		
Cupido minimus (small blue butterfly)		
Hirudo medicinalis (medicinal leech)		
Pachytychius quinquepunctatus (weevil)		
Eurynebria complanata (strandline beetle)		

3.2 Special Features and Management Units

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

Key Features

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

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

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

Other Features

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

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

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

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

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

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

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

	Management units															
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
SAC	✔	✔			✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	
SSSI	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
NNR		✔			✔	✔				✔	✔					
LNR	✔	✔			✔	✔										
SAC features																
1**. 2190 Humid dune slacks**	**x**	**KH**	**x**	**Sym**	**KH**	**x**	**KH**	**KH**	**x**	**KH**	**x**	**x**	**x**	**x**	**x**	**x**
2. **2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)**	**x**	**Sym**	**x**	**Sym**	**Sym**	**x**	**Sym**	**Sym**	**x**	**KH**	**x**	**x**	**x**	**x**	**x**	**x**
3. **2130 Fixed dunes with herbaceous vegetation (`grey dunes`)**	**x**	**Sym**	**Sym**	**Sym**	**KH**	**x**	**Sym**	**Sym**	**x**	**KH**	**KH**	**KH**	**KH**	**x**	**x**	**x**
4. **3140 Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp.**	**x**	**x**	**x**	**x**	**x**	**KH**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
5. **1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)**	**x**	**Sym**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**Sym**	**x**	**x**	**x**	**x**	**x**	**x**
6**.1395 Petalwort *Petalophyllum ralfsii***	**x**	**KS**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**Sym**	**x**	**x**	**x**	**x**	**x**	**x**
7**.1903 Fen orchid *Liparis loeselii***	**x**	**KS**	**x**	**x**	**KS**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
SSSI features																
Note : The following is a list of current SSSI features; where these directly relate to SAC and SPA features, they have not been listed.																
Assemblage of Red Data Book and/or Nationally scarce plants	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**x**	**x**
Dune invertebrate assemblage	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**x**	**x**
Pyrgus malvae (grizzled skipper)	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**x**	**x**
Dune macrofungi assemblage	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**Sym**	**Sym**	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**Sym**	**Sym**
Dune woodland	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**Sym**	**Sym**	**Sym**	**Sym**	**x**	**KH**	**KH**

Tulostoma melanocyclum (fungi)	x	x	x	x	x	x	x	x	x	Sym	Sym	Sym	Sym	x	x	x
Glocianus pilosellus (weevil)	x	x	x	x	x	x	x	x	x	Sym	Sym	Sym	Sym	x	x	x
Sand influenced biogenic reefs	KH	x	x	x	x	x	x	x	KH	x	x	x	x	KH	x	x
Bombus sylvarum (shrill carder bee)	x	Sym	Sym	Sym	KS	x	Sym	Sym	x	x	x	x	x	x	x	x
Colletes cunicularis (vernal mining bee)	x	Sym	Sym	Sym	Sym	x	Sym	Sym	x	x	x	x	x	x	x	x
Cupido minimus (small blue)	x	Sym	Sym	Sym	Sym	x	Sym	Sym	x	x	x	x	x	x	x	x
Hirudo medicinalis (medicinal leech)	x	x	x	x	x	Sym	x	x	x	x	x	x	x	x	x	x
Rock pools	x	x	x	x	x	x	x	x	KH	x	x	x	x	x	x	x
Soft piddock bored substrata	Sym	x	x	x	x	x	x	x	Sym	x	x	x	x	Sym	x	x
Pachytychius quinquepunctatus (a weevil)	x	Sym	Sym	Sym	Sym	x	Sym	Sym	x	x	x	x	x	x	x	x
Eurynebria complanata (strandline beetle)	x	x	x	x	Sym	x	x	x	x	x	x	x	x	KS	x	x
Stonewort assemblage	x	Sym	x	x	Sym	KS	x	Sym	x	x	x	x	x	x	x	x
Sand dune	x	KH	KH	KH	KH	x	KH	KH	x	Sym	Sym	Sym	Sym	x	x	x

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 SAC and SPA 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 the 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 that have an important influence on the condition of the feature are identified in the performance indicators.

[1] Web link: http://www.jncc.gov.uk/page-2199

4.1 Conservation Objective for Feature 1 and 2: 2190 Humid dune slacks and. 2170 Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)

NB The division between 'humid dunes' and 'dunes with *Salix repens* ssp. *argentea* is unclear and difficult to define. The humid dune slack habitat includes both successionally young and mature slacks, which equate to NVC communities SD13-16. The dunes with *Salix repens* spp. *argentea* equate to drier areas of mature dune slack, and the low hummocks found around dune slacks which support *Salix repens*. These are sometimes known as hedgehog dunes. Because of the difficulties in separating these two habitats, for the purposes of monitoring these features are considered together.

Vision for feature 1

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

- Dunes with *Salix repens* and humid dune slacks will occur as part of the dune system, their location will be determined by natural processes and appropriate grazing management
- A range of successional stages will be found in both features
- Factors affecting the features will be under control

Performance indicators for Feature 1 & 2

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

Performance indicators for feature condition		
Attribute	***Attribute rationale and other comments***	***Specified limits***
A1. Extent	Provided the stated proportion of the dunes with *Salix repens* / humid dune slack habitat is in the required condition (see below) then dune slacks will be deemed to be in favourable condition.	*Upper limit*: None set?? *Lower limit*: As mapped 1997
A2. Quality	The *Salix repens*/humid dune slack features are found on both dune systems that make up this SAC. However, 95% of the slack habitat is found at Kenfig (Hurford & Perry, 2000). Therefore, in the context of the SAC, the condition and extent of dune slack habitat at Merthyr Mawr SSSI is of relatively little significance. The condition of these areas at Merthyr Mawr will continue to be assessed as *Petalophyllum* habitat rather than as part of the dune slack features. A range of dune slack habitat should be present from early successional stages with a large proportion of bare ground through to later stages with more closed vegetation and a significant proportion of *Salix repens*. Limits have been set to reflect this range	*Upper limit*: N/A *Lower limit* >30% of the humid dune slack habitat in Area Y AND >45% of the humid dune slack habitat in Area Z is either embryo or successionally – young slack vegetation AND >70% of the humid dune slack vegetation outside of Areas Y and Z is either successionally young or orchid rich slack vegetation. Areas Y and Z are shown on Map 1. Vegetation composition in areas Y

	of habitat types within these two features. Working on the premise that we want slacks represented by a range of stages of maturity (condition) from successionally young through to mature, but that if we have the former we can always get the latter. It is desirable to have a greater proportion of earlier successional forms. These are represented by embryo dune slacks, characterised by open ground containing clonal patches of *S. repens* and the presence of species such as *Carex arenaria, Sagina nodosa,*and *Juncus articulatus*, and successionally-young dune slacks, characterised by bare sand and thalloid liverworts, with the presence of species such as *Carex viridula* spp. *viridula, Juncus articulatus, Anagallis tenella, Samolus valerandi, Eleocharis quinqueflora, Ranunculus flammula,* and *Liparis loeselii* The other successional stages include humid dune slack vegetation, characterised by moist vegetation on level ground between sloping dunes, with *Salix repens* present along with one other species indicative of damp ground e.g. *Pyrola rotundifolia* or *Equisetum variegatum*, and orchid-rich dune slack vegetation, characterised by the presence of a larger number of orchid species such as *Epipactis palustris, Dactylorhiza incarnata, Gymnadenia conopsea, Pyrola rotundifolia*. The negative indicator species *Phragmites australis, Molinia caerulea, Calamagrostis epigejos* should be infrequent.	and Z will be within the acceptable limits where the following conditions are met – Within any 1 m radius there is 25-50% open ground with *Salix repens* forming clonal patches and at least two of the following species present: *Carex arenaria, Sagina nodosa* or *Juncus articulatus*, **or** Within any 50 cm radius there is bare soil, thalloid liverworts and at least four of the following species present: *Carex viridula* spp. *viridula, Juncus articulatus, Anagallis tenella, Samolus valerandi, Eleocharis quinqueflora, Ranunculus flammula, Liparis loeselii* AND where within any 1m radius none of the following species are present: *Phragmites australis, Molinia caerulea, Calamagrostis epigejos*. In addition, vegetation composition outside of areas Y and Z will be within the acceptable limits where the following conditions are met within any 50 cm radius there is bare soil, thalloid liverworts and at least four of the following species present: *Carex viridula* spp. *viridula, Juncus articulatus, Anagallis tenella, Samolus valerandi, Eleocharis quinqueflora, Ranunculus flammula, Liparis loeselii* **or** within any 50cm radius at least two of the following species are present: *Epipactis palustris, Dactylorhiza incarnata, Gymnadenia conopsea, Pyrola rotundifolia,* **AND** within any 1m radius none of the

		following are present: *Phragmites australis*, *Molinia caerulea*, *Calamagrostis epigejos*
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	Grazing is important for the maintenance of the slack vegetation. Both low numbers of rabbits and livestock graze the slacks at Kenfig SSSI and rabbits only at Merthyr Mawr SSSI. Undergrazing can lead to the dune slack vegetation becoming dominated by rank grasses or bushy *Salix repens* leading to a loss of species diversity and to scrub invasion leading to drying out of the slacks and total loss of the slack habitat as it is shaded out by the scrub. Overgrazing can lead to loss of species diversity as herbs are grazed out and are replaced by grasses. Trampling of the vegetation can lead to physical damage to the vegetation and soil structure and invasion by weed species.	Refer to limits on habitat quality A2
F2. Water Level &Water Quality	The exceptional wetness and diversity of the Kenfig dune system is directly dependent on the hydrological and hydro-chemical regime. The slack vegetation is influenced and maintained by both a high water table and maintenance of suitable water quality. The major water quality concerns are related to elevated macro-nutrient levels. Elevated levels of nitrogen have been found at Burrows Well (a karstic spring) on the Merthyr Mawr component and there is also some indication that dune slacks are becoming increasingly eutrophic. The nature of the underlying limestone aquifer means that off-site activities a considerable distance away can potentially have an impact on the SAC. This effect may occur both spatially and temporally.	***Upper limit***: No change to natural hydrological regime. Abstraction in the catchment should be regulated **Lower limit:** None set

F3. Natural coastal processes	Dune mobility is essential for the development of embryonic and successionally young slacks. Embryonic slacks form at the base of eroding dunes but slacks can also be destroyed by the advance of a mobile dune or modified as layers of sand are deposited on the slack	***Upper limit:*** There should be no constraints on the movement of sand. ***Lower limit***: None set
F4. Recreational and visitor pressure	Vehicles or pressure from visitors including camping can cause damage or loss of to slack vegetation, compaction and erosion. Illegal off road motorcycling and use of 4X4s is a particular problem at Kenfig SSSI. Uncontrolled horse riding at Merthyr Mawr may cause damage to vegetation and protected species	***Upper limit:*** • Vehicle or visitor damage should not impact on the feature. ***Lower limit:*** None set.
F5.Scrub encroachment	There are on going programmes of scrub clearance within the dune slacks. Mowing has also taken place at Kenfig SSSI. The removal of scrub helps prevents the loss of slack habitats to scrub and woodland	Refer to limits on habitat quality A2
F6. Air Quality	Several features on the Kenfig part of the SAC are potentially sensitive to air quality impacts, either directly from high levels of ethylene/ethane or indirectly through changes to water chemistry through deposition of atmospheric nitrogen. Atmospheric nitrogen oxide (NOx) levels may be exceeded due to proximity of several nearby sources including industrial (steel works/chemical works/power station), agricultural (chicken farms – ammonia), old landfill sites (methane), transport (M4) and wind blown particulates (adjacent tips). The current air pollution assessment criteria for Kenfig SAC are taken from the Environment Agency (EA) Review of Consents (RoC) data and the APIS website (http://www.apis.ac.uk/index.html) Critical loads are assigned for habitats. For species the broad habitat is used as a surrogate. All[2] SAC features are nutrient sensitive, whilst humid dune	Critical level or exposure[3] (over the averaging/summing period): Acid - 4 keq ha^{-1} yr^{-1} (calendar year) NO_X as NO_2 - 30 µg m^{-3} (calendar year) SO_2 – 20 µg m^{-3} (calendar year and winter Oct 1 to Mar 31) Nitrogen - 10-20 kg ha^{-1} yr^{-1} (calendar year) Ammonia - 3 µg m^{-3} (calendar year) Ozone – 3000 ppb h (3 months)

[2] Freshwater critical loads are still being developed and therefore the assessment excludes Hard oligo-mesotrophic standing waters

[3] Note that these based on best available data and are not definitive target values. They are likely to require re-evaluation and will require further consultation with other competent authorities and stake holders

	slacks, fixed dunes with herbaceous vegetation, and *L. loeselii* are also acid sensitive.	
Owner/occupier objectives	All parts of the Kenfig Dunes SSSI are owned by a charitable organisation, the Kenfig Corporation Trust, dedicated to holding the site in trust for the benefit and enjoyment of the community of Kenfig, allowing unrestricted access in time and space. Bridgend County Borough Council manages the site, in consultation with other parties through the Kenfig NNR management committee. Their aim is to maintain and enhance its value for nature conservation, including the provision of educational and public interpretation resources, run from the visitor centre. CCW manage the grazing licences. Fishing is a traditional activity and is dealt with through a separate lease with The Kenfig Hill and District Angling Association.	Maintain regular communication with the Kenfig Corporation Trust, Bridgend County Borough Council, Kenfig Hill and District Angling Association, and graziers Manage grazing leases

4.2 Conservation Objective for Feature 3: 2130 Fixed dunes with herbaceous vegetation (`grey dunes`)

Vision for feature 3

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

- Fixed dunes with herbaceous vegetation (grey dunes) will occur where older, shifting dunes become more stabilised and in early successional stages become colonised by lichens and other species indicative of the transition from less mobile habitat.
- The habitat will encompass a range of successional stages throughout the area, determined by patterns of natural factors and grazing.
- Grey dunes will comprise a significant part of the dune system but will increase and decrease in extent and location as natural processes determine the landscape of the dune systems
- All factors are under management control

Performance indicators for Feature 3

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. Extent	Grey dunes should be distributed throughout this SAC. To ensure this, a target has been included that states that all SSSI within this SAC, that contain	*Upper limit*: None set?? *Lower limit*: As mapped 1997

	these features have to be in good condition for this SAC feature to be considered favourable overall. Some fluctuations are likely in the extent due to losses to other components of the dune system or increases at the expense of other components. These losses and gains where due to natural factors will be accepted, but there must be no loss due to direct or indirect human activities.	
A2. Quality	Sampling is targeted at the successionally young stages on the premise that if we have these it is always possible to get more mature communities. Grey dunes should cover a range of steps to maturity from successionally young through to mature. It is desirable to have a greater proportion of earlier successional forms characterised by bare sand or the moss *Thymus polytrichus* and the presence of species such as *Phleum arenarium, Vulpia membranacea, Cladonia foliacea, Arenaria serpyllifolia, Sedum acre, Anthyllis vulneraria, Erodium maritimum, Aira praecox, Arenaria serpyllifolia, Sedum acre* and *Catapodium marina, Pilosella officinarum, Geranium molle and Viola tricolor*. In more species rich closed sward the species can also include *Lotus corniculatus, Leontodon autumnalis, Polygala vulgaris Rhinanthus minor, Ranunculus bulbosa, Euphrasia* sp., *Trifolium arvense, Linum catharticum,* and *Lotus corniculatus* Presence of negative indicator species show that there is a problem with one, or a combination of the following factors, grazing, over stabilisation, or eutrophication. Species indicative of negative change include – *Rosa pimpinellifolia* >50cm in height, *Arrhenatherum elatius, Chamerion angustifolium, Clematis vitalba* and *Heracleum sphondylium*	*Upper limit*: N/A *Lower limit* At Kenfig NNR – within Area X 40% of the fixed dune grassland is referable to successionally young grassland or closed rich grassland **AND** within Area Y 70% of the fixed dune grassland is referable to successionally young grassland or closed rich grassland **AND** within Area Z 75% of the fixed dune grassland is referable to successionally young grassland or closed rich grassland. Vegetation composition in areas Y, Z and X will be within the acceptable limits where the following conditions are met – within 50cm of any point there is 10-30% bare sand/ or >10% moss or *Thymus polytrichus* with at least three of the following species present: *Phleum arenarium, Vulpia membranacea, Cladonia foliacea, Arenaria serpyllifolia, Sedum acre or Thymus polytrichus* **or** within 50cm of any point there is a closed sward dominated by forbs, where six of the following species are present; *Anthyllis vulneraria*,

		Rhinanthus minor, Polygala vulgaris, Ranunculus bulbosa, Thymus polytrichus, Euphrasia sp., *Trifolium arvense, Linum catharticum, Sedum acre* or *Lotus corniculatus* **AND** at Merthyr Mawr NNR – within Area A 40% of the fixed dune grassland is referable to successionally young grassland or closed rich grassland **AND** within Area B at least 30% of the fixed dune grassland is referable to successionally young grassland or closed rich grassland **AND** Within Area C least 50% of the fixed grassland is referable to successionally young grassland or closed rich grassland Vegetation composition in areas A, B and C will be within the acceptable limits where the following conditions are met – In Areas A, B and C, within 50cm of any point there is either 10-30% bare sand with at least three of the following species present; *Phleum arenarium, Erodium maritimum, Aira praecox, Arenaria serpyllifolia, Sedum acre* or *Catapodium marina* **or** there is a closed habitat with >50% moss or *Thymus* cover with at least three of the following species present *Arenaria serpyllifolia, Sedum acre, Thymus polytrichus, Lotus corniculatus, Pilosella officinarum, Geranium molle, Leontodon autumnalis, Viola*

		tricolor or *Polygala vulgaris* **or** there is a closed sward dominated by forbs with at least six of the following species present *Arenaria serpyllifolia*, *Sedum acre*, *Thymus polytrichus*, *Lotus corniculatus*, *Pilosella officinarum*, *Geranium molle*, *Leontodon autumnalis*, *Viola tricolor* or *Polygala vulgaris* are present **AND** In Area A, no more than 10% of the fixed dune grassland; In Area B no more than 30% of the fixed dune grassland, And in Area C no more than 50% of the fixed grassland Comprises: Within 1m of any point there should be no vegetation with *Rosa pimpinellifolia* >50cm, *Arrhenatherum elatius*, *Chamerion angustifolium*, *Clematis vitalba* or *Heracleum sphondylium* present
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	See rationale for feature 1&2	
F2. Natural coastal processes	See rationale for feature 1&2	
F3. Recreational and visitor pressure	See rationale for feature 1&2	
F4. Scrub encroachment	See rationale for feature 1&2	
F5. Air Quality	See rationale for feature 1&2	
F6. Owner/occupier objectives	See rationale for feature 1&2	

4.3 Conservation Objective for Feature 4: Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. 3140

Vision for feature 4

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

- Submerged *Chara* beds (mainly *Chara aspera* and *C. virgata*) growing in relatively shallow water form the predominant submerged macrophyte vegetation throughout most of the lake.
- *Chara* occur at more than 50% frequency along regular surveillance transects within the Western and Central arms.
- Charophyte species and uncommon pondweeds such as *Potamogeton gramineus* and *P.* x *nitens* are present in other embayments and pools, including *Tolypella glomerata* in dune pools.
- The lake is spring-fed so nutrient levels remain low. One of the main nutrients (phosphorus) reaches no more than 25 micrograms per litre in regular sampling areas. Nitrogen levels in the water are low (less than 1 milligram per litre) and declining or stable.
- The lake water is clear, but well vegetated with dense beds of submerged and marginal plants. A Secchi disc is visible on the lake bed in the deepest part of the lake (2.6m).
- Water depth is relatively stable, fluctuating naturally with groundwater.
- Reed, swamp and fringing bur-reed are restricted to shallow zones – covering not more than 10 % of the site.
- All factors affecting the achievement of these conditions are under control.

Performance indicators for Feature 4

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 standing water	There should be no loss of extent of standing water within Kenfig Pool. Reed growth around the South, North and Eastern shorelines should be monitored and managed to avoid further encroachment. To be measured through reference to aerial photography.	*Upper limit:* None set *Lower limit:* Open water surface extent should be not less than 29ha
A2. Extent of aquatic plant beds	Kenfig Pool is relatively shallow (c. 2m) and aquatic plants can grow across the entire bed of the lake. The extent of *Chara* beds has previously been recorded on GIS and this provides a useful baseline for future comparisons. Monitoring follows standard CSM procedure using a fixed point transect method with a grapnel and boat. Four GPS-marked transects are used.	Upper limit: none set. Lower limit: *Chara* beds of appropriate composition (see A3) should be the dominant vegetation type across the lake, covering 50% or more of the lakebed. AND Aquatic plants should be growing in the deepest part of the lake (2.6m)

A3. Vegetation composition: macrophyte community composition (Species, indicative of condition)	Certain species present in Kenfig are indicators of desired conditions. Monitoring follows standard CSM procedure using a fixed point transect method with a grapnel and boat. Four GPS-marked transects are used.	*Upper Limit:* None set *Lower Limit:* Characteristic charophyte species – currently *Chara aspera, C.contraria* and *C. virgata* – should be Dominant in 50% or more of sample points. Any other *Chara* or *Tolypella* species may count towards this target, except for *C. vulgaris*. AND The following species should be present: *Littorella uniflora*; *Potamamogeton gramineus*; *Potamogeton* x *nitens*
A4. Vegetation composition: (negative indicator species)	Certain species present in Kenfig are indicators of increased nutrient levels. Excessive growths of filamentous algae and some aquatic plants are indicative of increased nutrient loads and / or other ecological problems. Monitoring follows standard CSM procedure using a fixed point transect method with a grapnel and boat. Four GPS-marked transects are used. To accommodate natural variation in the plant community, it is acceptable for one of the listed species to increase, so long as this is balanced by a decrease in one or more of the others.	**Negative indicator species** *Upper Limit:* Benthic and epiphytic filamentous algal cover (non-*Chara*) low. No sample points have cover scores >2. AND No increase in overall DAFOR cover of the following macrophyte species: *Ceratophyllum demersum*; *Lemna trisulca*; *Myriophyllum spicatum*; *Potamogeton trichoides*; *Potamogeton pectinatus*; *Ranunculus circinatus*; *Zannichellia palustris*. *Lower Limit:* No loss of *Potamogeton trichoides*.
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Water quality and agricultural run-off	Water quality is vital to all forms of aquatic life. There is a large range of parameters that could be measured, and it is impractical to monitor all of them. Water quality monitoring at Kenfig will focus on nutrient enrichment, which is considered the most serious potential threat to the lake. Two plant nutrients are of particular importance, phosphate and nitrate. Phosphate is measured as total phosphate (TP). Annual Mean TP is currently 20µgl^{-1}. Nitrate is measured as Total nitrogen (TN) and nitrate (NO_3). Historically, nitrate has been viewed as being of little importance in lakes, but there is	Stable nutrients levels: *Upper limit*: Mean annual levels of Total Phosphate (TP) should not exceed 24 microgrammes per litre within the pool. This figure is an annual mean based on the availability of at least four different water samples, collected. AND Winter nitrate (November-February) <1 milligramme per litre. AND

	increasing evidence that it may play a key role. Mean annual Total Nitrogen Concentration (TN) is used because plants can utilise N at various stages of the nitrogen cycle. Winter Nitrate is a measure of nitrate loading to the lake and is correlated with aquatic plant species richness. Dissolved oxygen is measured during the summer, when oxygen levels are most likely to be low. Regular water quality sampling at established locations will be used to compare nutrient levels. Kenfig Pool is an EA Water Framework Directive Monitoring site, so monthly data should be available.	No excessive growth of cyanobacteria or green algae *Lower Limit*: $>5mg\ l^{-1}$ dissolved O_2 throughout the water column
F2. Hydrology	The lake appears to have a natural hydrological regime. It is fed by dune seepage, three small ephemeral streams, and possibly a deep Carboniferous Limestone aquifer (Davidson & Appleby, 2003). Since the lake is mainly groundwater-fed, it is difficult to estimate the exact catchment area. The extent of the drainage systems leading from the M4 motorway and the town of North Cornelly are also unknown, however it seems likely that most industrial and urban drainage bypasses the site (Monteith (ed.), 1996). Three small streams flowing into the site are thought to be the source of plant nutrients and in 1984 may have received some inputs from waste paper sludge treatment that was spread on adjacent fields. The aquifer may be a threat in that it could convey various pollutants from landfill quarries (ENSIS, 1996).	*Upper limit*: None set *Lower limit:* No change to natural hydrological regime. Abstraction in the catchment should be regulated.
F4. Sediment Load	Kenfig is a largely groundwater fed system, so there are few sedimentation problems at present. Any issues are most likely to arise from the small feeder streams and adjacent road or agricultural runoff. Monitoring will be by visual inspection for evidence of sedimentation during routine site visits.	*Upper limit:* No evidence of sedimentation. *Lower limit:* None set.

F5. Fishery management	Large populations of coarse fish (such as introduced carp for example) can distort the balance between the plant community, nutrient levels and the coarse fish population by eating small microscopic animals (zooplankton) that feed on tiny algae (phytoplankton). Overall the presence of a fishery at Kenfig pool poses little or no threat to the macrophyte communities apart from the continued presence of large carp in the pool. The risk arises from the possibility of carp spawning and resultant rise in population leading to damage through excessive turbidity as a result of the benthic feeding habits of carp. It is hoped that the carp will be removed through agreement with the KHDAA.	*Upper limit*: No further fish species introductions. **AND** No use of live bait. *Lower limit*: All fish stocking events and other fishery management to be based on existing fishery management plan.
F6. Introduced alien/exotic species	Non-native invasive species can fundamentally and irreversibly disrupt ecosystem structure and function. Non-native invasive species often out compete native counterparts, especially under disturbed conditions. A list of the most serious non-native invasive species is published by the UK Technical Advisory Group for the Water Framework Directive. Monitoring for these species will take place during regular monitoring visits, but site wardens and members of the local community will also be encouraged to notify CCW so that prompt action can be taken.	*Upper Limit*: No increase in *Elodea canadensis*. This species is currently rare. **AND** No common carp (*Cyprinus carpio*) present. **AND** No new non-native invasive species on the UKTAG Red List present. *Lower Limits*: Maintain vigilance regular routine site inspections and wardening.
F7. Changes in access and recreation	Kenfig pool has a high recreational worth, educational interest and landscape value. Close contact with the local community is also important to encourage interest in the site and to explain management issues that have to be tackled.	Maintain regular routine site inspections and wardening.

4.4 Conservation Objective for Feature 5: 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Vision for feature 5

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

- The quality of the saltmarsh is within specified limits
- There is no increase in erosion along the length of the transition from salt marsh to sand dune
- The saltmarsh flora will continue to include the following scarce species; *Limonium binervosum*, and *Frankenia laevis*
- Light grazing by rabbits and /or stock will continue to be tolerated within limits
- The damaging effects of pony riding will have been reduced or eliminated

Performance indicators for Feature 5

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	The performance indicators state that it is necessary to maintain the area of salt marsh mapped in 2000. However, it is suspected that there has been recent erosion of the eastern side of the marsh, by the River Ogmore. The 1981 survey recorded presence of a 'riverbank' (as opposed to a more gently sloping profile) along the edge of the middle marsh. This now extends along the length of the middle marsh, and further slumping was noted during Autumn 2004. It is proposed that, in the future, the extent of the salt marsh is determined by habitat mapping, using up to date aerial photography. However, it is noted that a change in extent is difficult to detect between the 1991 and 2000 aerial photographs, because the latter were taken at high tide. Also note that any change in extent as a result of river erosion is likely to result from natural change rather than through anthropogenic causes. It will be necessary to consider any future loss within the wider context; there is a small amount of un-notified habitat on the opposite river bank which appears to be accreting rather than eroding. It is acknowledged that this will be difficult	*Upper limit*: None set but should not impinge on the other Annex 1 habitat types *Lower limit*: None set but there should be no losses as a result of human intervention, directly or indirectly, but if these happen as a result of natural processes, then that is acceptable.

	because of the limited opportunity for salt marsh development along this stretch of coastline. There was 11.46 ha of saltmarsh present at Merthyr Mawr when mapped for the Merthyr Mawr Warren SSSI Vegetation Survey 2001. Much of the saltmarsh is being lost at Kenfig due to natural erosion and this should be seen as acceptable given that it is a 'natural process'.	
A2. Quality	Within the performance indicators targets have been set to enable us to determine if erosion from excessive trampling and an increase in the extent and distribution of *Frankenia laevis*, which are the other two main factors that could alter the quality of the salt marsh at Merthyr Mawr, are having an effect. Targets have been set for each of these based on the current situation. If trampling becomes an issue, a limit may be required for bare ground as well. The saltmarsh habitat at Kenfig has been subject to natural changes due to erosion and changes to the river geomorphology. There should be surveillance of the habitat although it is accepted that these natural processes may lead to loss or change.	*Upper limit*: None set *Lower limit*: The Atlantic salt marsh habitat at both Kenfig **AND** Merthyr Mawr is described as favourable **Merthyr Mawr** 50% of the vegetation within Area A (see map 3, draft SAC report) is referable to 'good condition middle marsh vegetation' **AND** There is no increase in erosion along the length of the transition from salt marsh to sand dune Vegetation composition in areas A will be within the acceptable limits where the following conditions are met for "Good condition middle marsh vegetation" defined as: **Within a 50cm radius in:** *Puccinellia maritima* is present along with three of the following species: *Aster tripolium*, *Suaeda maritima*, *Cochlearia officinalis*, *Spergularia media*, *Plantago maritima* or *Glaux maritima* AND *Frankenia laevis* is absent from the sward.
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Livestock grazing	Cattle belonging to the tenant of Ogmore Castle Farm previously grazed the saltmarsh. There are no plans to re-introduce grazing at the present time by either the tenant or CCW.	*Upper limit*: Damage to vegetation due to grazing should be rare or absent *Lower limit:* No limits set

	Rabbits grazing occurs across the saltmarsh	
F2. Nitrogen deposition	See rationale for Features 1&2	**See Feature 1&2**
F3. River bank erosion / sediment deposition	Currently, the river / saltmarsh interface is a hard bank for much of its length with only mild slumping. The opposite bank is generally a more gentle and even gradient from saltmarsh through a narrow band of mud to the river. The current SSSI boundary is the middle of the river. Bank erosion / deposition may result due to changes in the river channel, and peak river flow caused by upstream canalisation. Historical maps and aerial photographs seem to suggest limited meandering about a fairly fixed axis. Further investigation is required to provide an indication of future changes and to establish limits.	*Upper limit*: To be determined *Lower limit:* To be determined
F4. Trampling by horses	The saltmarsh is regularly used by pony riders, both individual riders and strings of up to 20+ horses from the trekking centre at Ogmore Castle Farm. Riders tend to stay to the upper edge of the saltmarsh in the southern half, and follow the route of the sewage pipeline in the northern half. However, tracks made by pony riders straying from this route and occasional vehicles (off road vehicles, coastguard, farm and sewage works staff) are clearly visible on other areas of the saltmarsh. It is agreed that there has been a loss of habitat since 1991, due to an increase in use of the track that runs along the western edge of the marsh by horse riders. Comparison of 1991 and 2000 aerial photographs show a decrease in vegetation cover and an increase in the amount of bare sand, principally within the middle marsh. The increased use has occurred as the result of an attempt to reduce the amount of erosion throughout the dune system by ensuring the majority of use is targeted to this one track. In many ways this represents a decision to prioritise features of	Limits are incorporated into the limits for extent and quality of the feature

	conservation interest across the site. Targets have been set within the performance indicators to ensure that this track does not become too wide – there is potential for riders to encroach further into the marsh, particularly during wet conditions when the track can be more difficult to negotiate.	
F5. Pollution	Salt marsh communities are sensitive to water chemistry, with increased nutrient levels leading to increased algal growth. They are also susceptible to toxic pollution from marine sources such as oil spills. There have been instances of pollution in the River Ogmore but there has been no record of consequential damage to the saltmarsh vegetation. Overflow from sewage works may be an issue but we have no data. Large-scale rubbish, particularly wheels with tyres, regularly migrates from the river and onto the saltmarsh causing local damage to the vegetation.	*Upper limit*: Damage due to pollution / litter should be absent *Lower limit:* No limits set
F6. *Frankenia laevis*	It is appears *F. laevis* has increased its extent and distribution at Merthyr Mawr since it was first discovered in 1981. There is some dispute as to whether it is native to this site or not. Further work e.g. genetic finger printing may help to establish its status but until this is known Andy Jones, CCW Higher Plants Specialist, has recommended that it is not eradicated. With this in mind it is difficult to know 1) whether there should be concern about increasing extent and distribution of this species, and therefore suitable targets need to be incorporated 2) presence of the species is simply accepted as a natural part of the salt marsh. Research suggests that it is associated with salt marsh and sand dune transition zones, favouring freely draining soils (ref: Ecological Flora of the BS, University of York). Therefore it may be reaching the limit of its expansion. Other species associated with the transition zone e.g. *Armeria maritima* and *Limonium* spp. continue to be present at least occasionally within the dense patches of *F. laevis*. In consideration of this, it has been agreed	Limits are incorporated into the limits for the quality of the feature (above)

	a target should be set based on the current level of 'invasion', with the caveat that further surveillance work will be undertaken to confirm the presumption that it is unlikely to encroach any further into the salt marsh.	

4.5 Conservation Objective for Feature 6: 1395 Petalwort *Petalophyllum ralfsii*

Vision for feature 6

Petalophyllum ralfsii will continue to be found at its current locations in each of the two SSSI within the SAC. The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The species will be found where conditions are suitable in sufficient numbers to form a viable and sustainable population
- The population will vary from year to year depending on conditions, especially in drier years, but the long term population will remain steady and sustainable
- Suitable dune slacks will have patches of bare ground that is being colonised by jelly lichens (*Collema* spp.) and *Barbula* mosses.
- The factors affecting the feature are under control

Performance indicators for Feature 6

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 + distribution	*P. ralfsii* is present at each of the two component SSSI. Baseline survey and previous surveillance show that the species is locally distributed at each site. Where it occurred the density of thalli was > 50 per m^2. The assumption is that if we have at least two patches of habitat with a relatively high density of thalli, that the species will also be present at a lower density elsewhere. Surveillance at Kenfig and Merthyr Mawr suggests that the thalli are numerous only one year in every fix or six. Monitoring of thalli should be carried out in patches of habitat where thalli are obviously numerous using a 1 x 1 metre quadrat, divided into 16 cells, with counts made at	Lower limit*: P. ralfsii* is present at a density of >50 thalli per m^2 in at least two locations more than 10 m apart in two humid dune slacks

	cell level. Concentrating the search over a small area at a time means thalli are less likely to be overlooked. Thalli counts should only be carried out in years when thalli are numerous.	
A2. Habitat Quality	*P. ralfsii* is a poor competitor and requires open vegetation to persist. It is most frequently found among successionally young, open dune slack vegetation. Limits for presence of this habitat at Kenfig have been set under feature 1/2 above. In optimum habitat it is found in association with other thalloid liverworts such as *Pellia endiviifolia, Aneura pinguis* and *Pressia quadrata*, the latter being a particularly good indicator of the presence of suitable habitat. The combination of bare ground is supported by the requirement for species such as *Carex viridula* ssp. *viridula, Juncus articulatus, Anagallis tenella, Samolus valerandi, Eleocharis quinqueflora*, and *Ranuculus flammula* to be present. The presence of negative indicator species such as *Phragmites australis, Hippophae rhamnoides, Molinia caerulea* and *Calamagrostis epigejos* is a direct threat. The requirement for at least one sizeable slack at each site to be in an embryonic state of development ensures that the local Petalophyllum population has the opportunity to persist into the foreseeable future.	*Lower limit* at each site >25% of at least one humid dune slack (>20 x 30m in area) is represented by embryo slack vegetation **AND** at each site >50% of at least one humid dune slack (> 30 x 20m in area) is represented by successionally-young slack vegetation: Vegetation composition in humid dune slack habitat suitable for *Petalophyllum ralfsii* will be within the acceptable limits where the following conditions are met – In more than 25% of at least one humid dune slack there is open vegetation with *Salix repens* forming clonal patches **AND** within any 1 m radius there is 25-50% bare ground with at least two of the following species present *Carex arenaria, Sagina nodosa or Juncus articulatus* **AND** >10% bare soil or thalloid liverwort cover, with at least one species of thalloid liverwort present within a 50 cm radius **AND** >2 of the following species are present within a 50cm radius; *Carex viridula ssp. viridula, Juncus articulatus, Anagallis tenella, Samolus valerandi, Eleocharis quinqueflora,*

		Ranunculus flammula, Liparis loeselii **AND** *Phragmites australis, Hippophae rhamnoides, Molinia caerulea, Calamagrostis epigejos* are absent within any 1m radius
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Habitat	The species requires early successional dune slack; this is the most significant factor. Low rates of sand accretion mean there are few opportunities for colonisation of newly formed habitats, while stabilisation is resulting in loss of suitable habitat in those areas already occupied by the species.	See above and feature 1&2
F2. Recreation and Access	Horse riding across the dunes at Merthyr Mawr has previously resulted in tracks passing through one of the main slacks where *Petalophyllum* occurs. This track has been 'diverted' through use of restrictions. In one slack where *Petalophyllum* is found, pedestrian visitor pressure is 'creating' suitable habitat at the edge of paths through trampling. This may also allow for spread of the species to other areas of suitable habitat within the slack. At Kenfig, scrambling bikes are cutting deep tracks through former *Petalophyllum* habitat. Although some return to bare ground would benefit this species, tracks in many places are deep and ridged, and do not give rise to suitable habitat.	Maintain vigilance regular routine site inspections and wardening
F3. Air Quality	See rationale for Features 1&2 above	

4.1 Conservation Objective for Feature 7: 1903 Fen orchid *Liparis loeselii*

Vision for feature 7

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

- Sufficient suitable habitat is present to support the populations
- The factors affecting the feature are under control

Performance indicators for Feature 7

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 and distribution	*L. loeselii* is found only on the Kenfig NNR part of the SAC. Presence in a number of discrete dune slacks ensures that the species is well distributed.	Extent: Lower limit: *L. loeselii* is present in >15 discrete dune slacks (see Map)
A2.Species population	*L. loeselii* is currently found within 9 slacks at Kenfig NNR (2007), although not all slacks contained flowering spikes. The main population is found within slacks managed by mowing. Numbers of flowering spikes within the more successionally young habitat have been declining with stabilisation of this habitat. This is not thought to be secure in the long term. Long-term surveillance indicates that *L. loeselii* used to have a wider distribution, with numbers >200 in certain slacks. The target has been set to reflect this. In good years flowering spikes can be numerous in suitable habitat, and counts of > 200 should be obtained within around 20 minutes.	Distribution: Lower limit: The number of flowering *L. loeselii* spikes is >200 in at least two humid slacks and >20 in a successionally-young humid dune slack and >5 in >14 other humid dune slacks
Performance indicators for factors affecting the feature		
Factor	***Factor rationale and other comments***	***Operational Limits***
F1. Habitat	Habitat is the most significant factor; the species requires early successional dune slacks. Refer to feature 1/2 for dune slack objective.	See Features 1and 2
F2. Recreation and Access	At Kenfig, scrambling bikes are cutting deep tracks through *Liparis* habitat. Although some return to bare ground would benefit this species, tracks in many places are deep and ridged, and do not give rise to suitable habitat.	

5. ASSESSMENT OF CONSERVATION STATUS AND MANAGEMENT REQUIREMENTS

This part of the document provides:

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

5.1 Conservation Status and Management Requirements of Feature 1 & 2: Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) (EU habitat code 2170) and Humid dune slacks (EU habitat code 2190)

These two features have been considered together as the issues and management of both are intimately linked.

Conservation Status of Feature 1 & 2

No distinction has been made between the **Humid dune slacks** and **Dunes with *Salix repens* ssp. *argentea*** as outlined in Section 1, and this monitoring data will be used to determine the condition of both features. Results show that the proportion of early successional stages in Areas Y and Z is below that required. Therefore, vegetation in both areas is considered to be unfavourable. Areas Y and Z contained the largest blocks of embryo and successionally young habitat in 1997. As the system is stabilising and no new natural areas of habitat have been created, we can assume that the slack habitats outside of the sample plots are also unfavourable, despite mowing and scraping has artificially created areas of habitat (see comments below). Therefore, the Humid dune slacks and Dunes with *Salix repens* ssp. *argentea* at Kenfig SAC are considered to be in **unfavourable declining** condition (August 2006 SAC Monitoring Report).

Management Requirements of Features 1 and 2
Management issues for this feature are the lack of creation of new dune slacks, excessive dune stabilisation and succession of older slacks to scrub in some areas, though this is variable over the SAC.

Natural coastal processes
The type and cover of vegetation communities present on the dune system at any given time is largely dependent on geomorphological processes. Management should be aimed at minimising any constraints to the natural movement of sand. This should allow the continued process of slack formation, maintaining a presence of embryo and successionally young slacks on site.

Modelling of coastal processes should be considered.

Liaison with other interested parties should continue, to ensure coastal strategies such as the Marine Aggregate Dredging Policy for south Wales and the Swansea Bay Shoreline Management Plan consider accretion/erosion issues at Kenfig and Merthyr Mawr.

A program of mechanical destabilisation of dunes, involving cutting, scarification and excavation of blowouts should be considered in targeted areas.

Grazing
Humid dune slacks and dunes with *Salix repens* are maintained by the seasonally high water table, grazing and scrub control. Grazing by domestic stock facilitates rabbit and hare grazing since rabbits tend to graze where the sward is already short. Grazing levels should be set to allow the maintenance of a low, species rich sward throughout the majority of the dune slacks and to reduce the spread of scrub.

Dune slacks should be lightly grazed, preferably by cattle during the summer. Grazing by cattle in winter is acceptable provided supplementary feeding and poaching do not take place. Winter sheep grazing is generally benign provided there is no supplementary feeding, however, sheep do not graze coarser vegetation, which gives this vegetation a competitive advantage.

Use of mineral licks should be considered to target grazing in particular areas.

Liaison with stakeholders and neighbours should be maintained to ensure suitable grazing regimes are implemented.

Management aimed at encouraging the return of rabbits and hares at Kenfig, such as mowing and burrow creation, should be continued, and rabbit grazing should be maintained at Merthyr Mawr.

Manage grazing licences/leases

Scrub

Continued scrub clearance is necessary at Merthyr Mawr and Kenfig since scrub encroachment has been considerable over the last 30 years and grazing alone cannot keep scrub in check. Where natural processes such as mobility, erosion, and wind scour are significant, scrub invasion is not an issue. Where slacks are more mature, scrub can become a problem especially when grazing ceases or is reduced for a period and early scrub encroachment is not controlled. As scrub becomes established shelter and seeding increases and the problem is then exacerbated as stock cannot gain easy access to graze.

The scrub clearance programmes at Merthyr Mawr, including removal of *H. rhamnoides*, needs to continue as set out in the Merthyr Mawr NNR Mangement Plan.

Identified areas of mature coastal woodland may be retained.

Mowing

Mowing has taken place within certain dune slacks at Kenfig on a regular basis over the past few years, to facilitate the spread of grazing and to some extent to control dense low willow scrub growth and re-growth following initial clearance management. Mowing has achieved good results by reducing the competitive advantage of coarse and woody growth thereby favouring desirable species such as marsh helleborine *Epipactis palustris*. Mowing may be considered as an option in certain targeted areas within Merthyr Mawr dune system.

Mowing may continue only as consented.

Hydrological regime

The dune slack communities are dependent on a high water table, particularly in the winter. The depth of the water table and degree of inundation throughout the winter months affects the type and composition of dune slack communities.

Management should aim to protect and maintain the natural hydrological regime of the dune slacks.

Onsite monitoring of dip wells needs to be reviewed and continued at appropriate intervals.

Water and air quality

Several features on the Kenfig part of the SAC are potentially sensitive to air and water quality impacts.

Management should aim to protect and maintain the required air and water quality.

Recreation and access
People and vehicle access should be managed so that it does not adversely affect the dune slack SAC features. Dune stabilisation works should only be considered in exceptional cases where severe erosion has been caused by vehicle or visitor pressure. The first action should be to manage the source of the problem.

Wardening and surveillance of camping, vehicle and visitor access that causes damage to the vegetation communities and physical damage to the dune slacks, needs to be continued.

Vehicle restrictions to the dunes need to be continued, and be reviewed as problems arise.

Wardening and surveillance of access for horse riders among certain areas of the dune slacks at Merthyr Mawr where it is impacting on *P. ralfsii* habitat should be continued, with access to sensitive habitats discouraged via deviation onto other less sensitive habitat.

Instances of inappropriate recreation leading to damage should be logged and reported to the appropriate Authorities including CCW.

5.2 Conservation Status and Management Requirements of Feature 3: Fixed dunes with herbaceous vegetation (`grey dunes`) (EU habitat code **2130)**

Conservation Status of Feature 3

The fixed dune with herbaceous vegetation feature of Kenfig/Cynffig SAC is considered to be in **Unfavourable declining conservation** status (August 2006 SAC Monitoring Report). This is due primarily to over-stabilisation, undergrazing and scrub development.

Management Requirements of Feature 3
Active management in the form of livestock grazing, preceded by mechanical excavation or scarification where appropriate, is required to reverse this trend and thereafter maintain (at least a proportion of) the herbaceous dune vegetation in a more open, early successional and mobile form. In some particularly stabilised areas the creation of dune blowouts may be considered.

Natural coastal processes – see management of Features 1&2 above

Grazing - see management of Features 1&2 above substituting fixed dune grassland for dune slack. Additionally, management within the fixed dune grassland for creation of burrows to encourage rabbit grazing should be continued in targeted areas.

Creation of burrows may continue only as consented.

Scrub- see management of Features 1&2 above substituting fixed dune grassland for dune slack

Mowing– Mowing has taken place in selected areas of fixed dune grassland at Kenfig on a regular basis over the past few years, to facilitate rabbit grazing and to control bracken growth and re-growth following initial clearance management. Mowing has achieved good results in these areas and this management should be continued. Mowing may be considered as an option in certain targeted areas within Merthyr Mawr dune system.

Mowing may continue only as consented.

Water and air quality - see management of Features 1&2 above

Recreation and access see management of Features 1&2 above

5.3 Conservation Status and Management Requirements of Feature 4: Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. 3140

Conservation Status of Feature 4
The Hard oligo-mesotrophic waters with benthic vegetation of *Chara* spp. feature of Kenfig/Cynffig SAC is considered to be in **unfavourable recovering** conservation status (2006).

The main reason for the unfavourable condition is the presence of introduced fish (carp). If carp removal can be carried out favourable condition should follow. (Burgess *et al*., 2006)

This analysis is based on the most recent Site Condition Assessments of Welsh SAC and SSSI Standing Water Features (Burgess *et al*., 2006). To make this assessments, data from CCW Contract Science Report no. 704 (Goldsmith *et al*. 2006) was employed, alongside further chemical and biological data collected by ENSIS Ltd. and the Environment Agency (EA) between 2003-2005. Data from previous reports and surveys was also utilised where available to provide a longer-term perspective and possible evidence of trends.

Management Requirements of Features 4

Fishery
Removal of the few remaining carp is an essential prerequisite to the site achieving favourable status.

- All fish stocking events and other fishery management to be assessed in light of advice within the fishery management plan (Giles, 2003) and in line with consultation protocols in place between landlords and tenants at Kenfig NNR.

Hydrology
Management should aim to protect and maintain the natural hydrological regime of Kenfig pool.

- No change to natural hydrological regime.
- Onsite monitoring of the Pool water levels needs to be reviewed and continued at appropriate intervals
- Abstraction in the catchment should be regulated.

Alien plant species
There should be no new non-native invasive species on the UKTAG Red List present.

- Maintain vigilance regular routine site inspections and wardening.
- No increase in *Elodea canadensis*. This species is currently rare.

Other Alien species

- The numbers of Canada geese present on the pool and surrounding land should be monitored.

Water and air quality
Water quality monitoring at Kenfig will focus on nutrient enrichment, which is considered the most serious potential threat to the lake

- Regular water quality sampling at established locations will be used to compare nutrient levels. Kenfig Pool is an EA Water Framework Directive Monitoring site, so monthly data should be available.
- Monitoring will be by visual inspection for evidence of sedimentation during routine site visits.
- No evidence of sedimentation.

- No excessive growth of cyanobacteria or green algae

5.4 Conservation Status and Management Requirements of Feature 5: Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1330

Conservation Status of Feature 5
The condition of the Atlantic salt meadows at Merthyr Mawr were assessed as favourable condition on the basis of SAC monitoring carried out in December, 2004?. In addition the SSSI salt marsh feature was assessed as being in favourable condition (December, 2004).

Management Requirements of Feature 5
Trampling by horses
It is likely that surface erosion caused by trampling by stock and/or horse riding has affected the saltmarsh for hundreds of years. However, the extent of this factor has probably increased in the last decade as horse riding has become more popular.

The saltmarsh gets a concentrated use as it is one of the main access points to the foreshore and is used on a frequent basis by the Ogmore Castle Farm trekking centre and stabling facility. This has resulted in a broad band 10m -15m wide of bare, trampled silty sand at the top of the saltmarsh. Unfortunately, this zone is one of the more interesting parts of the saltmarsh.

In 2004 CCW introduced a Horse Riding Permit Scheme, primarily for public safety reasons. The scheme included confining riding to selected routes avoiding sensitive areas and has incidentally, in the first instance at least, reduced the numbers of riding visits to the Warren as a whole. In the future, it may be necessary in the future to dictate the route or areas used for horse riding on the saltmarsh to prevent damage to the feature.

Actions required
- Liase landowner / stakeholders to reduce/eliminate damage by horses.
- Monitor loss/development of saltmarsh
- Monitor horse riding numbers
- Continue Merthyr Mawr Horse Riding Permit scheme / riding routes

Grazing (cattle and rabbits)

The 1981 report Merthyr Mawr vegetation report describes the lower marsh as being ‘a patchwork of vegetation dominated by *Puccinellia* which is kept short by grazing cattle.’ It also describes a domed part of the middle marsh with a dryer surface with abundant bare soil probably caused by cattle trampling. Significantly, this was also the location of the first *Frankenia* colony. Patches of ‘abundant *Agrostis stolonifera* and *Festuca rubra*’ are mentioned as occurring in the upper saltmarsh ‘away from the river’. Patches also occur near the river now and this may reflect the lack of cattle grazing.

Overall, however, the saltmarsh appears to exhibit the diverse mosaic of communities described in 1981 in spite of the absence of stock grazing. There is little indication of over-dominance of any species, with the possible exception of *Frankenia*. Since cattle trampling may have assisted the establishment and spread of this species, this is a good reason for not rushing into re-introducing this form of management.

The early report does not mention rabbit grazing although they do appear to be making a contribution now. This needs to be critically assessed since they may be making a significant contribution to the maintenance of the vegetation mosaic - and without creating the bare ground favoured by *Frankenia.*

Actions required

- Monitor rabbit numbers
- Determine and put in place optimal sward management.

Pollution / rubbish

A watching brief should be maintained on pollution sources / incidents in case of accumulative effects and on any catchment management proposals that may impact on the river.

The Estate has carried out rubbish collection from the saltmarsh for many years and more recently by CCW. This practise should continue. The appropriate authority should be encouraged to keep the river clear.

Actions required

- Maintain watching brief on pollution sources / incidents, remove damaging rubbish from saltmarsh and promote clearing rubbish from the river.
- Liase with B.C.B.C., and Welsh Water

Damage from vehicles

Although incidents of unauthorised access onto the saltmarsh using vehicles are few, access should be continued to be discouraged due to the damage that can be caused from such events.

- Vehicle restrictions on the saltmarsh to continue.
- Instances of inappropriate recreation leading to damage should be logged and reported to the appropriate Authorities including CCW.

5.5 Conservation Status and Management Requirements of Feature 6: Petalwort *Petalophyllum ralfsii* 1395

Conservation status of Feature 6

The *Petalophyllum ralfsii* of Kenfig/Cynffig SAC is considered to be in **unfavourable declining** conservation status (November 2007).

This analysis is based on the most recent SAC monitoring report for the feature, which shows that the performance indicators for the habitat and the extent, distribution and numbers of thalli were not met. Long-term surveillance indicates that *P. ralfsii* used to have a much wider distribution and that it was regularly found with greater than 50 thalli per m^2 in more than two discrete locations within more than two dune slacks. A full version of the monitoring data is available.

Management Requirements of Petalophyllum ralfsii

Management of *P. ralfsii* is entirely dependant on the presence of the required habitat, early successional dune slacks. Therefore for management requirements of the species, refer to section 1 & 2, management for Humid dune slacks.

5.6 Conservation Status and Management Requirements of Feature 6: Fen Orchid *Liparis loeselii* 1903

Conservation status of Feature 6

The *Liparis loeselii* of Kenfig/Cynffig SAC is considered to be in **unfavourable declining** conservation status (July 2007).

This analysis is based on the most recent SAC monitoring report for the feature, which shows that the number of plants and the number of slacks within which it occurs have decreased dramatically. Long-term surveillance indicates that *L. loeselii* used to have a much wider distribution and that on any occasion it was regularly found in six or more discrete dune slacks with numbers of flowering spikes greater than 200. A full version of the monitoring data is available.

Management Requirements of *Liparis loeselii*
Management of *Liparis* is entirely dependant on the presence of the required habitat, early successional dune slacks. Therefore for management requirements of the species, refer to section 1 & 2, management for Humid dune slacks.

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	001977	Unit 1	Kenfig Sands, also known as Sker Beach. Within SSSI and SAC but not NNR. However, Bridgend CBC's NNR team oversee it. Sand tends to diminish in winter and return in summer but the the sand supply is not sufficient for new embryo dunes to be created in the adjacent compartment (Kenfig 5).	No
2	001978	Unit 2	Kenfig northern dunes. In SAC and Cynffig/Kenfig SSSI, and in NNR managed by Bridgend CBC. Unit boundary follows fence, erected in Spring 2006 to permit cattle grazing. This compartment was grazed by cattle in summer 2006 for the first time for many years. Previous regime of sheep grazing now ended. Very few rabbits. Scrub control ongoing. Unit includes grey dunes, humid dune slacks, dunes with creeping willow and petalwort. Fen orchid was present in 1990s.	Yes
5	001979	Unit 5	Kenfig main compartment. In SAC, SSSI, and in NNR managed by Bridgend CBC. Includes grey dunes, humid dune slacks, dunes with creeping willow and fen orchid. Grazed by sheep in winter 2007-08 following approx 18 months without grazing. Previously grazed by sheep for much of the year but this was ended as summer grazing by sheep resulted in the preferential grazing of flowers. Cattle grazing is desirable but not practical at present because of un-fenced boundary with golf course, car park and road. Very few rabbits. NNR staff mow areas of grey dune in summer and selected dune slacks in late summer and autumn. Scrub control ongoing.	Yes

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
6	001980	Unit 6	Kenfig pool. SAC feature is hard oligo-mesotrophic waters with benthic vegetation of Chara spp. Important community of aquatic macrophytes. To maintain clear water it is desirable to remove the few remaining mature carp, which currently do not breed but might in future if temperatures rise. This unit includes reedbed on the northern and western margins of the pool, which was not present before about1930 but is now important for birds. It should not be allowed to encroach significantly onto open water, but should be maintained at approximately its current extent. Willow scrub in the reedbed requires control.	Yes
7	001981	Unit 7	Within SSSI but not SAC or NNR. Not fenced from the adjacent unit, compartment 5, which is part of the NNR. Very little grazing and few rabbits. Sheep have always tended to keep away from this area because of disturbance, although they could access it.	No
8	001982	Unit 8	Sker dunes. Boundary defined by ownership. Closely grazed, and so this relatively small area provides a marked contrast to the rest of the SSSI. This grazing regime benefits some species such as autumn ladies tresses orchid which is rare elsewhere on the site.	Yes
9	001983	Unit 9	Sker Point rocks. Much is now known about this inter-tidal area following research by Bridgend CBC over several years, with a view to future designation as a marine LNR.	No
10	001984	Unit 10	The main compartment of Merthyr Mawr SAC and SSSI, managed directly by CCW under a lease from the owner. Includes grey dunes, humid dune slacks, Atlantic salt meadows and petalwort. Grazed only by rabbits. Generally recovering following clearance of extensive areas of sea buckthorn, but petalwort slacks have encroaching creeping willow. CCW is investigating control of creeping willow by mowing. Control of ragwort and willowherb in areas from which scrub has been cleared is ongoing. Scrub clearance work must take account of Scheduled Ancient Monument. CCW is investigating fencing up to a third of the compartment in order to introduce grazing.	Yes
11	001985	Unit 11	Merthyr Mawr high dunes. SAC feature is grey dunes. Compartment boundary is a fence erected in 2005 to permit grazing by cattle. First grazed by cattle in winter 2005-06 and subsequently in summer. Need to maintain grazing and monitor results. Rabbits also present. Need to prevent any spread of scrub beyond the existing areas and perhaps clear more, but some will be retained. Scrub control must take account of Scheduled Ancient Monument.	Yes
12	001986	Unit 12	Compartment boundary follows ownership boundary but is not defined on the ground. Not grazed except by rabbits but this is possibly adequate. In the absence of fencing on the ownership boundary, which would be visually intrusive, cattle grazing could only take place together with adjacent land.	No

Unit Number	CCW Database Number	Unit Name	Summary of Conservation Management Issues	Action needed?
13	001987	Unit 13	Newton Burrows. In SAC and Merthyr Mawr SSSI. Proposed LNR managed by Bridgend CBC. Not grazed except by rabbits but this is considered adequate. Heavy recreational use would make any other grazing difficult to introduce. Some scrub control desirable, including small amounts of sea buckthorn.	Yes
14	001988	Unit 14	Merthyr Mawr beach. In SAC and SSSI.	No
15	001989	Unit 15	South-facing slope of Cwm y Gaer. In SAC and Merthyr Mawr SSSI. A small unit with no immediate management issues	No

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;

[4] See JNCC guidance on Common Standards Monitoring http://www.jncc.gov.uk/page-2272

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 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.

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.

[5] A full definition of favourable conservation status is given in Section 4.

Site integrity The coherence of a site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is designated.

Site Management Statement (SMS) The document containing CCW's views about the management of a site issued as part of the legal notification of an SSSI under section 28(4) of the Wildlife and Countryside Act 1981, as substituted.

Special Feature See **feature**.

Specified limit The levels or values for an **attribute** which define the degree to which the attribute can fluctuate without creating cause for concern about the **condition** of the **feature**. The range within the limits corresponds to favourable, the range outside the limits corresponds to unfavourable. Attributes may have lower specified limits, upper specified limits, or both.

Unit See **management unit.**

Vision for the feature The expression, within a **conservation objective**, of the aspirations for the **feature** concerned. See also **performance indicators.**

Vision Statement The statement conveying an impression of the whole site in the state that is intended to be the product of its **conservation management.** A 'pen portrait' outlining the **conditions** that should prevail when all the **conservation objectives** are met. A description of the site as it would be when all the **features** are in **favourable condition**.

8. REFERENCES

Burgess, A., Bennion, H. & Clarke, G. (2005). *Assessing reference conditions and ecological status for lakes using subfossil diatoms*. Final report to the Environment Agency under contract no. SC030103. ECRC Research Report No. 105.

Burgess, A., Goldsmith, B., and Hatton-Ellis, T. (2006). Site Condition Assessments of Welsh SAC and SSSI Standing Water Features. CCW Contract Science Report No: 705

Davidson, T. & Appleby, P.G. (2003). *The environmental history of Kenfig Pool, cSAC*. CCW Contract Science Report No. 561. Countryside Council for Wales, Bangor

Environment Agency (2005). http://www.environment-agency.gov.uk/http://maps.environment-agency.gov.uk/wiyby/data (to search for individual lake risk assessment details and maps)

Hurford, C. & Perry, K. (2000). Habitat Monitoring for Conservation Management and Reporting, 1: Case studies. Life - Nature, CCW

Joint Nature Conservation Committee (JNCC) (2005a). Common Standards Monitoring Guidance for Standing Waters Version March 2005. JNCC Report, JNCC, Peterborough. An electronic version of this report is available at: http://www.jncc.gov.uk/pdf/CSM_standingwaters_Mar05.pdf

JNCC (2005b). http://www.jncc.gov.uk/ProtectedSites/SACselection/SAC_habitats.asp

Monteith, D.T., Hildrew, A.G., Flower, R.J., Raven, P.J., Beaumont, W.R.B., Collen, P., Kreiser, A.M., Shilland, E.M. & Winterbottom, J.H. (2005). Biological responses to the chemical recovery of acidified freshwaters in the UK. *Environmental Pollution, 137*, 83-101.

Giles, N. (2003). A fishery management plant for Kenfig Pool, cSAC. CCW Contract Science Report no. 527. Countryside Council for Wales, Bangor

Goldsmith, B., Bennion, H., Hughes, M., Jones, V., Rose, C. & Simpson, G.L. (2006). Integrating Habitats Directive and Water Framework Directive monitoring: Baseline survey of Natura 2000 standing water habitats in Wales. CCW Contract Science Report No. 704. Countryside Council for Wales, Bangor

Newberry, C. (2007) Kenfig/Cynffig SAC Monitoring Report: Petalwort *Petalophyllum ralfsii*

Westwood, S., and Newberry, C. (2007) Kenfig/Cynffig SAC Monitoring Report: Fen orchid *Liparis loeselii*

The Ecological Flora of the British Isles at the University of York http://www.york.ac.uk/res/ecoflora/cfm/ecofl/index.cfm

Wilkinson, K. (2006). Kenfig SAC: Summary SAC Monitoring Report.

UK Air Pollution Information System http://www.apis.ac.uk/index.html

UK Technical Advisory Group for the Water Framework Directive. http://www.wfduk.org/tag_guidance/

Appendix D HRA Screening of Policies

Strategic Policies (and associated Thematic Policies)	Adverse effects alone or in-combination	Notes/Rationale
SP1: Regeneration and Sustainable Growth	No	The HRA has demonstrated allocations are unlikely to lead to likely significant effects, or where the potential for LSE have been identified, these are suitably addressed through policies within the LDP Deposit Plan, including SP17.
SP2: Regeneration Growth Area and Sustainable Growth Area Strategic Allocations	No	The HRA has demonstrated allocations are unlikely to lead to likely significant effects, or where the potential for LSE have been identified, these are suitably addressed through policies within the LDP Deposit Plan, including SP17.
SP3 - Design and Sustainable Place Making (PLA 1 - PLA 5)	No	Policy will not directly lead to development or create potential impact pathways to European Sites.
SP4 - Mitigating the Effects of Climate Change	No	Policy will not directly lead to development or create potential impact pathways to European Sites.
SP5 - Sustainable Transport and Accessibility (PLA 6 – PLA 12)	No	The HRA has demonstrated transport allocations are unlikely to lead to likely significant effects, or where the potential for LSE have been identified, these are suitably addressed through policies within the LDP Deposit Plan, including SP17.
SP6 - Sustainable Housing Strategy (COM 1 – COM 7)	No	The HRA has demonstrated allocations are unlikely to lead to likely significant effects, or where the potential for LSE have been identified, these are suitably addressed through policies within the LDP Deposit Plan, including SP17.

Strategic Policies (and associated Thematic Policies)	Adverse effects alone or in-combination	Notes/Rationale
SP7 - Gypsy, Traveller and Showpeople Sites (COM 8)	No	The implementation of SP7 through COM8 will ensure that delivery of the - Gypsy, Traveller and Showpeople Sites are unlikely to lead to likely significant effects, or where there is initial potential for LSE, these is suitably addressed through other policies including SP17.
SP8 - Health and Well-being	No	Policy will not directly lead to development or create potential impact pathways to European Sites.
SP9 - Social and Community Infrastructure (COM 9 – COM 13)	No	Policy will not directly lead to development or create potential impact pathways to European Sites.
SP10 – Infrastructure (COM 14)	No	Policy will not directly lead to development, contains requirements for protection of the natural environment, and promotes active travel and public transport.
SP11 - Employment Land Strategy (ENT 1 – ENT 5)	No	The HRA has demonstrated allocations are unlikely to lead to likely significant effects, or where the potential for LSE have been identified, these are suitably addressed through policies within the LDP Deposit Plan, including SP17.
SP12 - Retail Centres and Development (ENT 6 – ENT 9)	No	The HRA has demonstrated allocations are unlikely to lead to likely significant effects, or where the potential for LSE have been identified, these are suitably addressed through policies within the LDP Deposit Plan, including SP17.
SP13 - Decarbonisation and Renewable Energy (ENT 10 – ENT 12)	No	Policy will not directly lead to development or create potential impact pathways to European Sites.

Strategic Policies (and associated Thematic Policies)	Adverse effects alone or in-combination	Notes/Rationale
SP14 –Sustainable Development of Mineral Resources (ENT 13 – ENT 14)	No	Policy will not directly lead to development, and promotes the re-use and recycling of aggregates as an alternative to primary won aggregates. Policy also requires any extraction of minerals to result in no significant adverse impacts to natural heritage.
SP15 - Sustainable Waste Management (ENT 15 – ENT 16)	No	Policy will not directly lead to development, requires any waste management development to result in no significant adverse impacts to natural heritage.
SP16 – Tourism (ENT 17- ENT 18)	No	Policy will not directly lead to development. Policy wording has been developed to ensure promotion of recreation does not conflict with Conservation Objectives of European Sites.

Strategic Policies (and associated Thematic Policies)	Adverse effects alone or in-combination	Notes/Rationale
SP17 – Conservation and Enhancement of the Natural Environment DNP1: Development in the Countryside DNP2: Conversion of Rural Buildings DNP3: Replacement Dwellings in the Countryside DNP4: Special Landscape Areas DNP5: Local and Regional Nature Conservation Sites DNP6: Biodiversity, Ecological Networks, Habitats and Species DNP7: Trees, Hedgerows and Development DNP8: Green Infrastructure DNP9: Natural Resource Protection and Public Health	No	This Strategic Policy and associated Thematic Policies set out the protection within the Deposit Plan for European Sites, along with other designated areas, habitats, and species. The wording of SP17 is explicit on the protection for European Sites, along with robust assessment of development proposals using the HRA process. The associated Thematic Policies set out the requirement for delivery of biodiversity net gain, ecosystem resilience, green infrastructure, and protection of ecological networks, which will also help to support the protection of European Sites. The Policy will not directly lead to development or create potential impact pathways to European Sites.

Strategic Policies (and associated Thematic Policies)	Adverse effects alone or in-combination	Notes/Rationale
SP18 – Conservation of Historic Environment DNP10: Built Historic Environment and Listed Buildings DNP11: Conservation Areas	No	Policy will not directly lead to development or create potential impact pathways to European Sites.