

Caerphilly 2nd Replacement Local Development Plan 2020- 2035

Habitats Regulations Assessment

Caerphilly County Borough Council

October 2026

Quality information

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1. Introduction

1.1 Background to the project

AECOM was appointed by Caerphilly County Borough Council (CCBC) to undertake the HRA of the emerging 2nd Replacement Local Development Plan for the County Borough of Caerphilly for the period 2020-2035 (hereafter referred to as the '2RLDP' or the 'Plan'). The objectives of the assessment are to:

- Identify any aspects of the Plan that would cause a likely significant effect on any Habitat Sites, which include Special Areas of Conservation (SACs), candidate SACs (cSACs), Special Protection Areas (SPAs) and potential SPAs (pSPAs) and as a matter of Government policy, Ramsar sites, both in isolation and in combination with other plans and projects;
- Determine whether appropriate assessment would be required; and
- Undertake an analysis to inform the appropriate assessment, with a view to whether any aspects of the plan would have an adverse effect on the integrity of any Habitat sites.

1.2 Legislation

The UK left the European Union (EU) on 31 January 2020 under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"). While the UK is no longer a member of the EU, a requirement for Habitats Regulations Assessment continues as set out in the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹. The ultimate aim of the Directive is to "*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*" (Habitats Directive, Article 2(2)).

The Habitats Directive applies the precautionary principle to Habitat sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects with predicted adverse impacts on Habitat sites may still be permitted if there are no reasonable alternatives to them and there are Imperative Reasons of Overriding Public Interest. (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network.

In order to ascertain whether or not site integrity will be affected, a Habitats Regulations Assessment should be undertaken of the plan or project in question.

¹ These don't replace the 2017 Regulations but are just another set of amendments.

Box 1. The legislative basis for Appropriate Assessment

Conservation of Habitats and Species Regulations 2017 (as amended)

The Regulations state that:

“A competent authority, before deciding to ... give any consent for a plan or project which is likely to have a significant effect on a European site ... shall make an appropriate assessment of the implications for the site in view of that site's conservation objectives... The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site”.

Over the years the phrase ‘Habitats Regulations Assessment’ has come into wide currency to describe the overall process set out in the Conservation of Habitats and Species Regulations from screening through to IROPI. This has arisen in order to distinguish the process from the individual stage described in the law as an ‘appropriate assessment’. Throughout this report we use the term Habitats Regulations Assessment for the overall process.

In spring 2018 the ‘Sweetman’ European Court of Justice ruling² clarified that ‘mitigation’ (i.e. measures that are specifically introduced to avoid or reduce a harmful effect on a Habitats Site that would otherwise arise) should **not** be taken into account when forming a view on Likely Significant Effects. Mitigation should instead only be considered at the Appropriate Assessment stage. Appropriate assessment is not a technical term: it simply means ‘an assessment that is appropriate’ for the plan or project in question. As such, the law purposely does not prescribe what it should consist of or how it should be presented; these are decisions to be made on a case by case basis by the competent authority. As this report consists of a test of likely significant effect, mitigation measures are therefore not taken into consideration at this stage.

1.3 Report structure

Section 2 of this report summarises the methodology for the assessment. Section 3 details background information on the Habitat Sites discussed in this report. Section 4 identifies the possible pathway by which adverse effects on protected Habitat sites could arise. Section 5 discusses the results from the test of likely significant effects and Section 6 covers the Appropriate Assessment. The full initial policy screening table is present in Appendix A.

² People Over Wind and Sweetman v Coillte Teoranta (C-323/17)

2. Methodology

2.1 Introduction

This section sets out our approach and methodology for undertaking the HRA. Habitats Regulations Assessment itself operates independently from the Planning Policy system, being a legal requirement of a discrete Statutory Instrument.

2.2 A proportionate assessment

Project-related HRA often requires bespoke survey work and novel data generation in order to accurately determine the significance of adverse effects. In other words, to look beyond the risk of an effect to a justified prediction of the actual likely effect and to the development of avoidance or mitigation measures.

However, the draft CLG guidance³ makes it clear that when implementing HRA of land-use plans, the AA should be undertaken at a level of detail that is appropriate and proportional to the level of detail provided within the plan itself:

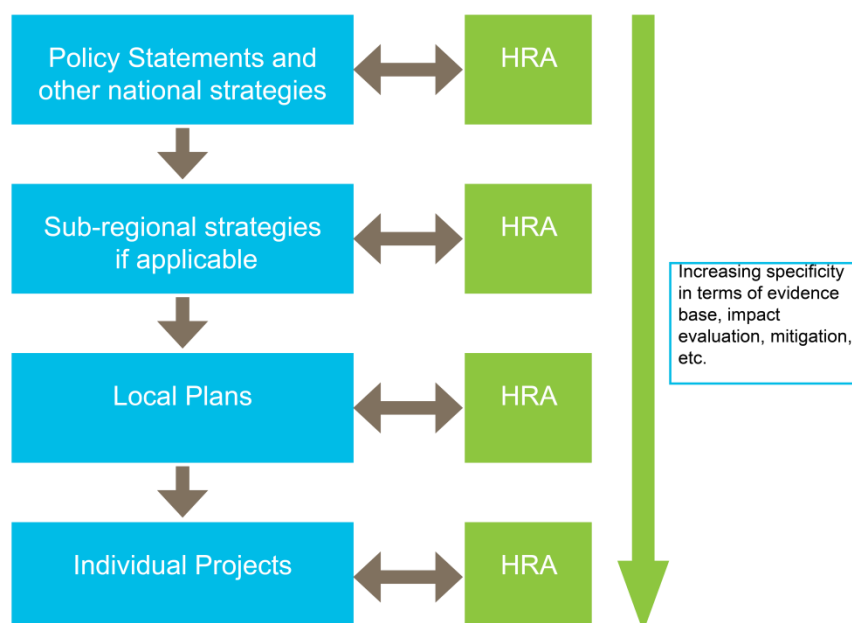
‘The comprehensiveness of the [Appropriate] assessment work undertaken should be proportionate to the geographical scope of the option and the nature and extent of any effects identified. An AA need not be done in any more detail, or using more resources, than is useful for its purpose. It would be inappropriate and impracticable to assess the effects [of a strategic land use plan] in the degree of detail that would normally be required for the Environmental Impact Assessment (EIA) of a project.’

In other words, there is a tacit acceptance that appropriate assessment can be tiered and that all impacts are not necessarily appropriate for consideration to the same degree of detail at all tiers (**Box 2**).

For a Local Development Plan the level of detail concerning the developments that will be delivered is usually insufficient to make a highly detailed assessment of significance of effects. For example, precise and full determination of the impacts and significant effects of a new settlement will require extensive details concerning the design of the town, including layout of greenspace and type of development to be delivered in particular locations, yet these data will not be decided until subsequent stages.

The most robust and defensible approach to the absence of fine grain detail at this level is to make use of the precautionary principle. In other words, the plan is never given the benefit of the doubt; it must be assumed that a policy/measure is likely to have an impact leading to a significant adverse effect upon a Habitat site unless it can be clearly established otherwise.

³ CLG (2006) Planning for the Protection of European Sites, Consultation Paper

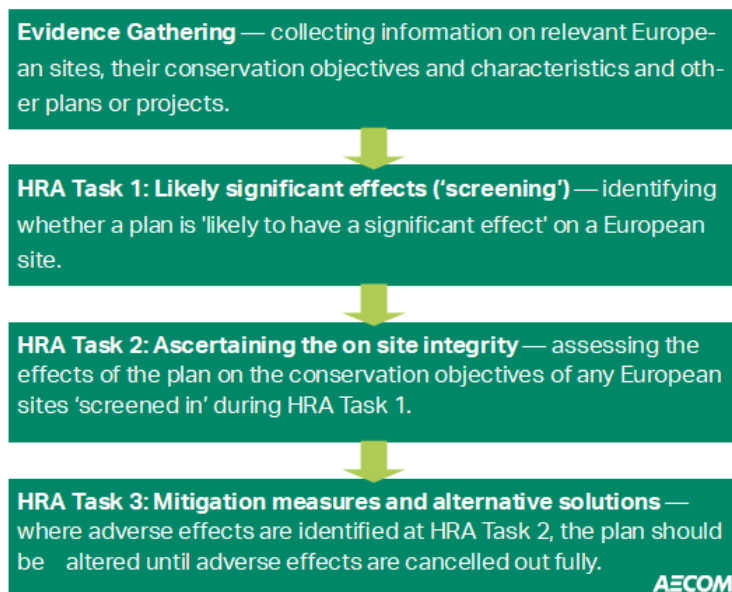


Box 2. Tiering in HRA of Land Use Plans

2.3 The process of HRA

Central government have released general guidance on appropriate assessment.⁴

Plate 3 outlines the stages of HRA according to guidance. In Wales, Habitats Regulations Assessment is also informed by Technical Advice Note 5: Nature Conservation and Planning (Welsh Government, 2009) and The Planning Series 16: Habitats Regulations Assessment. These documents provide additional guidance regarding the application of the Habitats Regulations within the Welsh planning system. The stages are essentially iterative, being revisited as necessary in response to more detailed information, recommendations, and any relevant changes to the plan until no likely significant effects remain.



⁴ <https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site>

Box 3. Four-Stage Approach to Habitats Regulations Assessment

In practice, this broad outline requires some amendment in order to feed into a developing land use plan. The following process has been adopted for carrying out the HRA.

2.4 Physical scope

The physical scope of the assessment i.e. the range of Habitat sites to be considered will be based upon a combination of tracing impact pathways and using distances derived from various studies. Caerphilly County Borough Council previously agreed a 15km search area for Habitat sites with Natural Resources Wales.⁵ This report has adopted that Zone of Influence, with sites beyond this area considered where there are identified impact pathways,

The Habitat sites of relevance to this HRA are as follows:

Table 1. Physical scope of the HRA – Habitats sites of interest

Habitats site	Distance from the Caerphilly County Borough Boundary
Aberbargoed Grasslands SAC	Within the Caerphilly County Borough boundary
Cardiff Beech Woods SAC	Adjacent (within 0.5 km) to the south
Blaen Cynon SAC	13.5 km west
Brecon Beacons SAC	10 km north
Cwm Cadlan SAC	11.1 km west
Cwm Clydach Woodlands SAC	8.0 km east
Severn Estuary SPA (Wales)	5.7 km south and south west
Severn Estuary SAC (Wales)	5.7 km south and south west
Severn Estuary Ramsar (Wales)	5.7 km south and south west
Severn Estuary SAC (England)	15 km south
River Usk/Afon Wysg SAC	5.35 km east
USK Bat Sites SAC	6.75 km north
Llangorse Lake SAC	14.32 km north
Sugar Loaf Woodlands SAC	14.8 km north east
Coedydd Nedd y Mellte SAC	9.5 km west

2.5 The ‘in-combination’ scope – other plans and projects

It is a requirement of the Regulations that the impact and effects of any plan being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the Habitat sites(s) in question.

In practice, ‘in-combination assessment’ is of greatest importance when the plan would otherwise be screened out because the individual contribution is inconsequential. It is neither practical nor necessary to assess the ‘in-combination’ effects of the plan in the context of all other plans and projects within the region. The principal other plans and projects that have been considered for in-combination effects are:

- Cardiff Replacement Local Development Plan
- Rhondda Cynon Taf Revised Local Development Plan

⁵ Caerphilly County Borough (2025) 2nd Replacement Local Development Plan 2020-2035, Habitats Regulations Assessment: Initial Screening Report.

- Vale of Glamorgan Replacement Local Development Plan
- Monmouthshire Local Development Plan
- Blaenau Gwent Local Development Plan
- Newport Replacement Local Development Plan
- Torfaen Local Development Plan
- Travel Plans that would include schemes in Caerphilly including;
 - Llwybr Newydd: the Wales transport strategy 2021 (<https://www.gov.wales/llwybr-newydd-wales-transport-strategy-2021>)
 - Welsh Government Roads Review, February 2023 (<https://www.gov.wales/roads-review>)
 - National transport delivery plan 2022 to 2027 (<https://www.gov.wales/national-transport-delivery-plan-2022-2027>)
 - South East Wales Valleys Local Transport Plan 2015-2030112
- Water Resources Management Plans (WRMPs) covering Caerphilly:
 - Dwr Cymru Welsh Water - WRMP 2024113
- Drainage and Wastewater Management Plans (DWMPs) covering Caerphilly:
 - Dwr Cymru Welsh Water – DWMP24

2.6 Stage One: Likely Significant Effect test (screening)

The first stage of any Habitats Regulations Assessment is a Likely Significant Effect (LSE) test - essentially a high level assessment to decide whether the full subsequent stage known as Appropriate Assessment is required. The essential question is:

‘Is the Plan, either alone or in combination with other relevant projects and plans, likely to result in a significant effect upon Habitat sites?’

The objective is to ‘screen out’ those plans and projects (or site allocations/policies) that can, without any detailed appraisal, be said to be unlikely to result in significant adverse effects upon Habitat sites, usually because there is no mechanism or pathway for an adverse interaction with Habitat sites. This stage is undertaken in Section 4 of this report.

In evaluating significance, AECOM have relied on our professional judgement as well as the results of previous stakeholder consultation regarding development impacts on the Habitat sites considered within this assessment.

2.7 Stage Two: Appropriate Assessment

Habitat Site(s) which have been ‘screened in’ during the previous Task will have a detailed assessment undertaken on the effect of the policies on the Habitat Site(s) site integrity. Avoidance and mitigation measures to avoid adverse significant effects will be incorporated where necessary.

As established by case law, ‘appropriate assessment’ is not a technical term; it simply means whatever further assessment is necessary to confirm whether there would be

adverse effects on the integrity of any Habitat sites that have not been dismissed at Likely Significant Effects. Since it is not a technical term it has no firmly established methodology except that it essentially involves repeating the analysis for the likely significant effects stage, but to a greater level of detail on a smaller number of policies and sites, this time with a view to determining if there would be adverse effects on integrity. For the air quality pathway the appropriate assessment is where detailed traffic and air quality modelling is reported.

One of the key considerations during appropriate assessment is whether there is available mitigation that would entirely address the potential effect. In practice, the appropriate assessment takes any policies or allocations that could not be dismissed following the high-level Likely Significant Effects analysis and analyse the potential for an effect in more detail, with a view to concluding whether there would actually be an adverse effect on integrity (in other words, disruption of the coherent structure and function of the Habitat site(s)).

The analysis first subjects each policy or site allocation to screening based upon potential pathways of impact. That is documented in [Appendix A](#). The results of that screening are summarised in Section 5. Policies that cannot be screened out are then taken forward to appropriate assessment in Section 6. Therefore, it should be noted that Appendix A does not present a summary of the whole assessment process.

3. Relevant Habitats Sites

3.1 Aberbargoed Grasslands SAC

3.1.1 Introduction

Aberbargoed Grasslands covers an area of 42.5ha and lies on a southwest facing hillside in the Rhymney Valley, 1km east of Bargoed. The site occupies an urban fringe position, between 200m and 290m above sea level. The fields in the south and west of Aberbargoed Grasslands have impeded drainage and contain a mixture of marshy grassland communities. Areas of particular interest are characterised by abundant purple moor grass *Molinia caerulea* and meadow thistle *Cirsium dissectum* with devil's bit scabious *Succisa pratensis* and carnation sedge *Carex panicea*. Other species such as saw-wort *Serratula tinctoria* and lousewort *Pedicularis sylvatica* occur frequently in heavily flushed areas. Associated stands of *Molinia caerulea* – *Potentilla erecta* mire contain abundant purple moor grass with tormentil *Potentilla erecta*, mat grass *Nardus stricta*, common sedge *Carex nigra* and spotted orchid *Dactylorhiza maculata*. Small stands of rush pasture are scattered across the site, with soft rush *Juncus effusus*, greater bird's foot trefoil *Lotus uliginosus* and marsh bedstraw *Galium palustre*.

3.1.2 Qualifying Features⁶

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinia caerulea*)

⁶ [UK0030071.pdf](#) (Accessed 25/09/26)

Annex II species that are a primary reason for selection of this site

- Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *Aurinia*

A large and relatively isolated population of marsh fritillary *Euphydryas aurinia* is present on a series of damp pastures and heaths in Gwent, representing the species on the eastern edge of its range in Wales.

3.1.3 Conservation Objectives⁷

The overarching conservation objectives are outlined in the Core Management Plan for the Aberbargoed Grasslands SAC published by Natural Resources Wales. While this document also provides conservation vision statements for the Annex I habitat, only the conservation objectives for the primary qualifying feature are presented here. 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 support a sustainable metapopulation of the marsh fritillary in the Aberbargoed area. This will require at least 50ha of suitable habitat, although not all of this will be within the SAC;

- 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 25ha of the total site area will be marshy grassland suitable for supporting marsh fritillary, with larval foodplant *Succisa pratensis* (devils bit scabious) present and only a low cover of scrub;
- At least 6.25ha will be good marsh fritillary breeding habitat, dominated by purple moor-grass *Molinia caerulea*, with *S. pratensis* present throughout and a vegetation height of 10-20cm over the winter period; and
- All factors affecting the achievement of the foregoing conditions are under control.

3.1.4 Threats/Pressures to Site Integrity⁸

While there is no Site Improvement Plan for the SAC, the main pressures and threats to site integrity can be inferred from the site's Core Management Plan, which outlines the management techniques that are required to achieve the conservation objectives for the SAC. The main threats and pressures to the site integrity of the SAC are the following:

- Appropriate grazing level

3.2 Cardiff Beech Woods SAC

3.2.1 Introduction

The Cardiff Beech Woods SAC is a 114.45ha large site comprising broad-leaved deciduous woodland (99.5%) and some developed tracts (0.5%). It represents an area of semi-natural broadleaved woodland dominated by beech. The SAC is considered one of the best examples of beech forest in the UK, representing this habitat close to its western limit of distribution. Mosaics and transitions to other woodland types are

⁷ [Aberbargoed Grasslands - Special Areas of Conservation](#) [Accessed 13/10/2026]

⁸ [Microsoft Word - Aberbargoed Grasslands Core SAC plan jan08.doc](#) [Accessed on the 13/10/2026]

found throughout the SAC, such as acidic beech woodland and oak *Quercus* and ash *Fraxinus excelsior* woods. Characteristic and notable species in the ground flora include ramsons *Allium ursinum*, sanicle *Sanicula europea*, bird's-nest orchid *Neottia nidus-avis* and yellow bird's-nest orchid *Monotropa hypopitys*.

The SAC also supports significant stretches of *Tilio-Acerion* forests of slopes, screes and ravines, comprising ash *Fraxinus excelsior*, wych elm *Ulmus glabra* and small-leaved lime *Tilia cordata*. Introduced sycamore *Acer pseudoplatanus* is frequently present throughout.

3.2.2 Qualifying Features⁹

Annex I habitats that are a primary reason for selection of this site:

- Asperulo-Fagetum beech forests

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- *Tilio-Acerion* forests of slopes, screes and ravines (* priority feature)

NRW's 2020 Baseline Evaluation project¹⁰ assessed the condition of qualifying features across Wales' protected sites. The data indicate that both qualifying woodland types are currently in unfavourable condition as indicated through various performance indicators.

3.2.3 Conservation Objectives¹¹

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.

⁹ <https://sac.jncc.gov.uk/site/UK0030109> [Accessed on the 13/10/2026]

¹⁰ Available at: <https://naturalresources.wales/evidence-and-data/research-and-reports/protected-sites-baseline-assessment-2020/?lang=en> [Accessed on the 13/10/2026]

¹¹ <https://naturalresources.wales/media/672066/FINAL%20Cdf%20Beech%20Woods%20SAC%20Man%20Plan.pdf> [Accessed on the 13/10/2026]

3.2.4 Threats / Pressures to Site Integrity¹²

The following performance indicators for factors affecting the Cardiff Beech Woods SAC are specified in NRW's Core Management Plan:

- Recreational use
- Atmospheric pollution
- Development pressure
- Commercial forestry
- Mineral extraction

3.3 Blaen Cynon SAC

3.3.1 Introduction

Blaen Cynon contains an extensive complex of damp pastures and heaths supporting the largest metapopulation of marsh fritillary *Euphydryas aurinia* on the southern edge of the Bannau Brycheiniog National Park. The marsh fritillary butterfly *Euphydryas aurinia* is found in a range of habitats in which its larval food plant, devil's-bit scabious *Succisa pratensis*, occurs. Marsh fritillaries are essentially grassland butterflies in the UK, and although populations may occur occasionally on wet heath, bog margins and woodland clearings, most colonies are found in damp acidic or dry calcareous grasslands. Populations of marsh fritillary vary greatly in size from year to year, and, at least in part, this is related to cycles of attack from parasitic wasps. Adults tend to be sedentary and remain in a series of linked metapopulations, forming numerous temporary sub-populations, which frequently die out and recolonise.

Blaen Cynon also supports a range of habitats. Marshy grassland, and flush and spring are of particular importance as they provide habitat for the marsh fritillary. Also present are areas of raised bog, species-rich neutral grassland, acid grassland and semi-natural broadleaved woodland.

3.3.2 Qualifying Features¹³

Annex II species that are a primary reason for selection of this site:

- Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia*

3.3.3 Conservation Objectives¹⁴

The overarching conservation objectives are outlined in the Core Management Plan for the Blaen Cynon SAC published by Natural Resources Wales.

- The site will contribute towards supporting a sustainable metapopulation of the marsh fritillary in the Penderyn/Hirwaun 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.

¹² Ibid.

¹³ <https://sac.jncc.gov.uk/site/UK0030092> [Accessed on the 25/09/2026]

¹⁴ <https://naturalresources.wales/media/671013/Blaen%20Cynon%20core%20management%20plan.pdf> [Accessed on the 25/09/2026]

- The population will be viable in the long term, acknowledging the extreme population fluctuations of the species.
- A minimum of 30% of the total site area will be grassland suitable for supporting marsh fritillary. (As the total area of the SAC is 66.62 ha, 30% represents approximately 20 ha.)
- At least 40% of the suitable habitat (approximately 8 ha) must be in optimal condition for breeding marsh fritillary.
- 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)

3.3.4 Threats and Pressures to Site Integrity¹⁵

While there is no Site Improvement Plan for the SAC, the main pressures and threats to site integrity can be inferred from the site’s Core Management Plan, which outlines the management techniques that are required to achieve the conservation objectives for the SAC.

The main threats and pressures to the site integrity of the SAC are the following:

- Inappropriate grazing
- Scrub Encroachment

3.4 River Usk/Afon Wysg SAC

3.4.1 Introduction

The River Usk SAC originates in the west of the Bannau Brycheiniog National Park and flows south-east, joining the Severn Estuary at Newport. The overall form of the catchment is long and narrow, with steep tributaries inflowing along the way to the Severn Estuary. The underlying geology is primarily Devonian Old Red Sandstone resulting in well buffered low-acidity waters. This geology also drives the low-moderate nutrient that characterises the SAC. However, along its course the nutrient status of the SAC is significantly modified by land use within the catchment, which is mainly pastoral and occasional woodland forestry.

The ecological structure and function of the site is highly dependent on hydrological and geomorphological processes, as well as the quality and connectivity of riparian habitats. This is especially the case for mobile animals, such as migratory fish and otters that move throughout the site. For example, the maintenance of a good hydrological regime (i.e. water quality and flows) and a consequent maintenance of

¹⁵ <https://naturalresources.wales/media/671013/Blaen%20Cynon%20core%20management%20plan.pdf> [Accessed on the 25/09/2026]

current velocity, water depth, dissolved oxygen levels and nutrient status are integral for fish to move around the river.

Example of the species that the SAC is designated for include the sea lamprey *Petromyzon marinus*, Atlantic salmon *Salmo salar* and bullhead *Cottus gobio*. Especially the Atlantic salmon requires unmodified river channels and an obstruction-free migratory route to its spawning gravels. The River Usk SAC is also an important site for otters, acting as a refuge for the species in the 1950s and subsequently as a source population for the re-colonisation of south-east Wales. None of the SAC flows through Torfaen. However, at its closest point, the river system lies only approx. 1.2km to the south of Torfaen, relatively close to its confluence with the Severn Estuary SPA / Ramsar.

3.4.2 Qualifying Features¹⁶

The site has been designated as a SAC for several features.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation

Annex II species that are a primary reason for selection of this site:

- Sea lamprey *Petromyzon marinus*
- Brook lamprey *Lampetra planeri*
- River lamprey *Lampetra fluviatilis*
- Twait shad *Alosa fallax*
- Atlantic salmon *Salmo salar*
- Bullhead *Cottus gobio*
- Otter *Lutra lutra*

Annex II species present as a qualifying feature, but not a primary reason for site selection:

- Allis shad *Alosa alosa*

3.4.3 Conservation Objectives¹⁷

The overarching conservation objectives are outlined in the Core Management Plan for the River Usk SAC published by Natural Resources Wales. While this document provides conservation vision statements for all Annex II species, only the conservation objectives for the water course are presented here, as this is essential to maintain the species in favourable conservation status.

- The capacity of the habitats in the SAC to support each feature at near-natural population levels, as determined by predominantly unmodified ecological and

¹⁶ <https://sac.jncc.gov.uk/site/UK0013007> [Accessed on the 15/01/2020]

¹⁷ https://naturalresources.wales/media/673384/River_Usk%20SAC%20core%20plan.pdf. As published by the Countryside Council for Wales (2008). [Accessed on the 15/01/2020]

hydromorphological processes and characteristics, should be maintained as far as possible, or restored where necessary.

- The ecological status of the water environment should be sufficient to maintain a stable or increasing population of each feature. This will include elements of water quantity and quality, physical habitat and community composition and structure. It is anticipated that these limits will concur with the relevant standards used by the Review of Consents process given in Annexes 1-3.
- Flow regime, water quality and physical habitat should be maintained in, or restored as far as possible to, a near-natural state, in order to support the coherence of ecosystem structure and function across the whole area of the SAC.
- All known breeding, spawning and nursery sites of species features should be maintained as suitable habitat as far as possible, except where natural processes cause them to change.
- Flows, water quality, substrate quality and quantity at fish spawning sites and nursery areas will not be depleted by abstraction, discharges, engineering or gravel extraction activities or other impacts to the extent that these sites are damaged or destroyed.
- The river planform and profile should be predominantly unmodified. Physical modifications having an adverse effect on the integrity of the SAC, including, but not limited to, revetments on active alluvial river banks using stone, concrete or waste materials, unsustainable extraction of gravel, addition or release of excessive quantities of fine sediment, will be avoided.
- River habitat SSSI features should be in favourable condition. In the case of the Usk Tributaries SSSI, the SAC habitat is not underpinned by a river habitat SSSI feature. In this case, the target is to maintain the characteristic physical features of the river channel, banks and riparian zone.
- Artificial factors impacting on the capability of each species feature to occupy the full extent of its natural range should be modified where necessary to allow passage, eg. weirs, bridge sills, acoustic barriers.
- Natural factors such as waterfalls, which may limit the natural range of a species feature or dispersal between naturally isolated populations, should not be modified.
- Flows during the normal migration periods of each migratory fish species feature will not be depleted by abstraction to the extent that passage upstream to spawning sites is hindered.
- Flow objectives for assessment points in the Usk Catchment Abstraction Management Strategy will be set by Natural Resources Wales as necessary. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 1 of the Core Management Plan.
- Levels of nutrients, in particular phosphate, will be set by Natural Resources Wales for each Water Framework Directive water body in the Usk SAC, and measures taken to maintain nutrients below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 2 of the Core Management Plan.
- Levels of water quality parameters that are known to affect the distribution and abundance of SAC features will be set by Natural Resources Wales for each Water

Framework Directive water body in the Usk SAC, and measures taken to maintain pollution below these levels. It is anticipated that these limits will concur with the 16 standards used by the Review of Consents process given in Annex 3 of the Core Management Plan.

- Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects.
- Levels of suspended solids will be set by Natural Resources Wales for each Water Framework Directive water body in the Usk SAC. Measures including, but not limited to, the control of suspended sediment generated by agriculture, forestry and engineering works, will be taken to maintain suspended solids below these levels.

3.4.4 Threats and Pressures to Site Integrity¹⁸

While there is no Site Improvement Plan for the SAC, the main pressures and threats to site integrity can be inferred from the site's Core Management Plan, which outlines the management techniques that are required to achieve the conservation objectives for the SAC.

The main threats and pressures to the site integrity of the SAC are the following:

- Inappropriate habitat management (e.g. barriers to migration)
- Water quality (including a particular issue with phosphorus in the River Usk above the tidal limit)
- Water flow / level
- Noise / acoustic disturbance
- Non-marine fisheries: recreational and commercial
- Increased sedimentation / siltation

3.5 Severn Estuary SPA / Ramsar

3.5.1 Introduction

The Severn Estuary SPA / Ramsar is located between the borders of Wales and England in south-western Britain. It is a 24,700.91ha large estuary with extensive intertidal mudflats, sandflats, rocky platforms and small islands. The coastline is fringed by saltmarsh, grazing marsh, freshwater and brackish ditches. Its seabed is mainly rocky, gravelly and sub-tidal sandbanks. Due to the estuary's funnel shape, the Severn experiences the second highest tidal range in the world.

Because of this extreme tidal condition, the SPA / Ramsar is inhabited by plant and animal assemblages that tolerate the physical conditions in the tidal-swept liquid mud, sand and rock. The invertebrate community is species-poor and harbours high densities of ragworms and lugworms. These form important food sources for migrant and wintering waders. The SPA / Ramsar has particular importance as a stopover point for spring and autumn migrant waders, and overwintering swans, ducks and waders. The site also has an extensive intertidal zone, as a consequence of its tidal range. The

¹⁸ https://naturalresources.wales/media/673384/river_usk-sac-core-plan.pdf . [Accessed on the 13/10/2026]

closest part of the Severn Estuary SPA / Ramsar lies approx. 7km to the south of Torfaen in the adjoining county of Newport.

3.5.2 SPA Qualifying Features¹⁹

This site qualifies under **Article 4.1** of the Directive (79/409/EEC) by supporting populations (counts are all at time of designation and could have changed since) of European importance of the following species listed on Annex I of the Directive:

Over winter

- Bewick's swan *Cygnus columbianus bewickii*, 280 individuals representing at least 4.0% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6)

This site also qualifies under **Article 4.2** of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

On passage

- Ringed plover *Charadrius hiaticula*, 655 individuals representing at least 1.3% of the Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6)

Over winter

- Curlew *Numenius arquata*, 3,903 individuals representing at least 1.1% of the wintering Europe - breeding population (5 year peak mean 1991/2 - 1995/6)
- Dunlin *Calidris alpina alpina*, 44,624 individuals representing at least 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6)
- Pintail *Anas acuta*, 599 individuals representing at least 1.0% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)
- Redshank *Tringa totanus*, 2,330 individuals representing at least 1.6% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6)
- Shelduck *Tadorna tadorna*, 3,330 individuals representing at least 1.1% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6)

Assemblage qualification: A wetland of international importance

- The area qualifies under **Article 4.2** of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl.

Over winter, the area regularly supports 93,986 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: Gadwall *Anas strepera*, shelduck *Tadorna tadorna*, pintail *Anas acuta*, dunlin *Calidris alpina alpina*, curlew *Numenius arquata*, redshank *Tringa totanus*, Bewick's swan *Cygnus columbianus bewickii*, wigeon *Anas penelope*, lapwing *Vanellus vanellus*, teal *Anas crecca*, mallard *Anas platyrhynchos*, shoveler *Anas clypeata*, pochard *Aythya ferina*, tufted duck *Aythya fuligula*, grey plover *Pluvialis*

¹⁹ <http://archive.jncc.gov.uk/default.aspx?page=2066> [Accessed on the 13/10/2026]

squatarola, white-fronted goose *Anser albifrons albifrons*, whimbrel *Numenius phaeopus*.

According to NRW's most recent site condition assessment²⁰, three of the qualifying species in the Severn Estuary SPA are in unfavourable condition, including Bewick's swan, European white-fronted goose and dunlin. For all species this is due to long-term population declines, potentially fuelled by shifts in winter distribution and reflecting population declines at the national scale. However, access and recreation are also identified as a potential source for population-level effects.

3.5.3 Ramsar Qualifying Features²¹

The Severn Estuary is designated as a Ramsar site under the following criteria:

Criterion 1

Due to the immense tidal range (second-largest in world), which affects both the physical environment and biological communities

Habitats Directive Annex I features present include sandbanks which are slightly covered by sea water all the time, estuaries, mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows (*Glauco-Puccinellietalia maritima*)

Criterion 3

Due to unusual estuarine communities, reduced diversity and high productivity

Criterion 4

This site is important for the run of migratory fish between sea and river via estuary. Species include salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla*. It is also of particular importance for migratory birds during spring and autumn.

Criterion 5: Assemblages of international importance

Species with peak counts in winter

70,919 waterfowl (5 year peak mean 1998/99-2002/2003).

Criterion 6: Species / populations occurring at levels of international importance

Species with peak counts in winter

- Tundra swan *Cygnus columbianus bewickii*; 229 individuals representing an average of 2.8% of the GB population (5 year peak mean 1998/99-2002/03)
- Greater white-fronted goose *Anser albifrons*; 2,076 individuals representing an average of 35.8% of the GB population (5 year peak mean 1996/97-2000/01)

²⁰ NRW. (January 2018). Special Protection Areas in Welsh waters – Indicative site level feature condition assessments 2018. NRW Evidence Report No. 236. 44pp. Available at: <https://cdn.cyfoethnaturiol.cymru/media/683655/special-protection-areas-in-welsh-waters.pdf> [Accessed on the 13/10/2026]

²¹ <https://jncc.gov.uk/jncc-assets/RIS/UK11081.pdf> [Accessed on the 13/10/2026]

- Common shelduck *Tadorna tadorna*; 3,223 individuals representing an average of 1% of the NW Europe population (5 year peak mean 1998/99-2002/03)
- Gadwall *Anas strepera strepera*; 241 individuals representing an average of 1.4% of the GB population (5 year peak mean 1998/99-2002/03)
- Dunlin *Calidris alpina alpina*; 25,082 individuals representing an average of 1.8% of the W Siberia and W Europe population (5 year peak mean 1998/99-2002/03)
- Common redshank *tringa totanus tetanus*; 2,616 individuals representing an average of 1% of the population (5 year peak mean 1998/99-2002/03)

Species / populations identified subsequent to designation for possible future consideration under criterion 6

Species regularly supported during the breeding season

- Lesser black-backed gull *Larus fuscus graellsii*; 4,167 apparently occupied nests, representing an average of 2.8% of the breeding population (Seabird 2000 Census)

Species with peak counts in spring / autumn

- Ringed plover *Charadrius hiaticula*; 740 individuals representing an average of 1% of the Europe and NW Africa population (5 year peak mean 1998/99-2002/03)

Species with peak counts in winter

- Eurasian teal *Anas crecca*; 4,456 individuals representing an average of 1.1% of the NW Europe population (5 year peak mean 1998/99-2002/03)
- Northern pintail *Anas acuta*; 756 individuals representing an average of 1.2% of the NW Europe population (5 year peak mean 1998/99-2002/03)

Criterion 8

The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla* use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad *Alosa alosa* and twaite shad *A. fallax* which feed on mysid shrimps in the salt wedge.

3.5.4 SPA Conservation Objectives

There are no Ramsar site Conservation Objectives. The Conservation Objectives for the Severn Estuary designated sites are lengthy and are therefore not reproduced in this document. They are provided here: [The Severn Estuary / Môr Hafren](#)

In broad terms the objectives are detailed and specific variations on the following generic requirement. To ensure the integrity of the site is maintained or restored as

appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

3.5.5 Threats and Pressures to Site Integrity²²

NRW and Natural England have published an advice note on the Severn Estuary EMS²³, which discusses the types of operations that may cause deterioration or disturbance to the qualifying features of the SPA. Furthermore, the following threats and pressures to the site integrity of the Severn Estuary SPA have been identified in Natural England's Site Improvement Plan:

- Public access / disturbance
- Physical modification
- Impacts of development
- Coastal squeeze
- Change in land management
- Changes in species distributions
- Water pollution
- Air pollution: Impact of atmospheric nitrogen deposition
- Marine consents and permits: Minerals and waste
- Fisheries: Recreational marine and estuarine
- Fisheries: Commercial marine and estuarine
- Invasive species
- Marine litter
- Marine pollution incidents

3.6 Severn Estuary SAC

3.6.1 Introduction

The Severn Estuary SAC was designated as a SAC in 2009, because it supports a significant number of habitats and species. It covers an area of 74,000ha and is designated partly for its estuary feature. Within this feature, subtidal sandbanks, intertidal mudflats and sandflats, Atlantic salt meadows and biogenic reefs are

²² <http://publications.naturalengland.org.uk/publication/4590676519944192> [Accessed on the 13/10/2026]

²³ Available at: <https://publications.naturalengland.org.uk/publication/3184206?category=3212324> [Accessed on the 13/10/2026]

included. The SAC also harbours three migratory fish species, including river lamprey, sea lamprey and twaite shad. The Severn Estuary also comprises hard substrate habitats, an assemblage of 114 estuarine and marine fish species and various waterfowl species. The Severn Estuary SAC overlaps with the Severn Estuary SPA / Ramsar.

3.6.2 Qualifying Features²⁴

Annex I habitats that are a primary reason for selection of this site:

- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- Sandbanks which are slightly covered by sea water all the time
- Reefs

Annex II species that are a primary reason for selection of this site:

- Sea lamprey *Petromyzon marinus*
- River lamprey *Lampetra fluviatilis*
- Twaite shad *Alosa fallax*

According to NRW's most recent site condition assessment²⁵, the majority of qualifying features in the Severn Estuary SAC are in unfavourable condition. For example, the distribution / extent, structure / function and typical species of Atlantic saltmarsh are all in unfavourable condition. This is due to a range of impact pathways, including coastal squeeze (predicted to result in the loss of 38ha of intertidal sand- and mudflats) and water quality (e.g. moderate overall status and fail for water chemistry in one waterbody overlapping with this habitat type).

3.6.3 Conservation Objectives

The Conservation Objectives for the Severn Estuary designated sites are lengthy and are therefore not reproduced in this document. They are provided here: [The Severn Estuary / Môr Hafren](#)

In broad terms the objectives are detailed and specific variations on the following generic requirement. To ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species

²⁴ <https://sac.jncc.gov.uk/site/UK0013030> [Accessed on the 13/10/2026]

²⁵ NRW. (January 2018). Severn Estuary Special Area of Conservation: Indicative site level feature condition assessments 2018. NRW Evidence Report No. 235. 41pp. Available at: <https://cdn.cyfoethnaturiol.cymru/media/684391/severn-sac-ica-2018.pdf> [Accessed on the 13/10/2026]

- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

3.6.4 Threats and Pressures to Site Integrity²⁶

NRW and Natural England have published an advice note on the Severn Estuary EMS²⁷, which discusses the types of operations that may cause deterioration or disturbance to the qualifying features of the SAC. Furthermore, the following threats and pressures to the site integrity of the Severn Estuary SAC have been identified in Natural England's Site Improvement Plan:

- Public access / disturbance
- Physical modification
- Impacts of development
- Coastal squeeze
- Change in land management
- Changes in species distributions
- Water pollution
- Air pollution: Impact of atmospheric nitrogen deposition
- Marine consents and permits: Minerals and waste
- Fisheries: Recreational marine and estuarine
- Fisheries: Commercial marine and estuarine
- Invasive species
- Marine litter
- Marine pollution incidents

3.7 Brecon Beacons SAC

3.7.1 Introduction

The Brecon Beacons SAC (note that the name of the SAC has not changed to Bannau Brycheiniog) is of particular interest for the arctic-alpine plants and plant communities growing on the sandstone rocks and ledges on its precipitous mostly north and east facing cliffs. The escarpments also support stands of dry heath vegetation.

The Old Red Sandstone cliffs of the Bannau Brycheiniog support the most southerly representation of calcareous rocky slopes with chasmophytic vegetation in the UK. The relatively high base status of the actively eroding rocks has resulted in a rich chasmophytic flora. Plants include purple saxifrage *Saxifraga oppositifolia* at its most southerly British location, green spleenwort *Asplenium viride*, brittle bladder-fern *Cystopteris fragilis* and several rare hawkweeds *Hieracium* spp. Nationally scarce

²⁶ <http://publications.naturalengland.org.uk/publication/4590676519944192> [Accessed on the 13/10/2026]

²⁷ Available at: <https://publications.naturalengland.org.uk/publication/3184206?category=3212324> [Accessed on the 13/10/2026]

moss and liverworts found here include *Plagiopus oederianus* and *Scapania aequiloba*.

These same cliffs and steeper rock outcrops also support siliceous rocky slopes with chasmophytic vegetation where there is a lower base status. The more siliceous sites are often towards the top of the cliffs, where the calcareous cements have been leached out or where harder rocks are present, with a transition to more calcareous chasmophytic vegetation lower down the face. Species found in this habitat include fir clubmoss *Huperzia selago*, serrated wintergreen *Orthilia secunda* and bryophytes such as *Douinia ovata*, *Brachydontium trichodes* and *Rhabdoweisia crenulata*.

Hydrophilous tall herb communities occur on some of the ledges. This vegetation is scattered across the entire site where conditions are suitable, but is most visible on the higher cliffs of the main north and east facing slopes of Craig Cerrig Gleisiad and Craig Cwm-du, which form part of the Craig Cerrig Gleisiad a Fan Frynach National Nature Reserve (NNR) and Craig Cwm Sere.

Within the SAC boundary the only significant areas of dry heath are found on the steep slopes of the NNR. The heath is largely dominated by single species stands of heather *Calluna vulgaris* and bilberry *Vaccinium myrtillus*, although some stands have crowberry *Empetrum nigrum*. Heather and bilberry also grow on the cliff ledges and are sometimes joined by cowberry (*Vaccinium vitis-idaea*). Here, there is some gradation into the other Annex I habitat types for which this SAC is designated. On the lower slopes, where grazing levels are higher, heath species become less dominant and are replaced by acid grassland. Bracken is locally abundant both on the steeper slopes, where it grows where the soil is slightly deeper, and on the lower slopes where it is sometimes mixed with scrub. Trees, including endemic whitebeams (*Sorbus*), and shrubs are an important element of the crag vegetation.

3.7.2 Qualifying Features²⁸

Annex I habitats that are a primary reason for selection of this site:

- Calcareous rocky slopes with chasmophytic vegetation
- Siliceous rocky slopes with chasmophytic vegetation

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- European dry heaths
- Hydrophilous tall herb fringe communities of plains and of the montaine to alpine levels

3.7.3 Conservation Objectives²⁹

The overarching conservation objectives are outlined in the Core Management Plan for the Brecon Beacons SAC published by Natural Resources Wales.

Calcareous rocky slopes with chasmophytic vegetation

²⁸ <https://sac.jncc.gov.uk/site/UK0030096> [Accessed on the 25/09/2026]

²⁹ https://naturalresources.wales/media/671043/Brecon%20Beacons%20SAC%20plan%20_Eng_.pdf [Accessed on the 25/09/2026]

- The base-rich sandstone cliffs, including crevices, scree and associated patches of thin soil remains free from disturbance and support typical plants, including mosses and liverworts.
- A variety of rare and scarce plants thrive in these areas, including purple saxifrage, green spleenwort, Oeder's apple-moss, lesser rough earwort and several rare hawkweeds.
- Populations of these species are sufficiently large and widespread to be sustained into the future (currently some populations may be critically low).
- All factors affecting the achievement of the above conditions are under control. Around a third of the site is covered by wet alder and willow woodland.

Siliceous rocky slopes with chasmophytic vegetation

- The acidic sandstone rocks, including crevices and scree, remain free from disturbance to and support typical plants, including mosses, ferns and lichens.
- A variety of rare and scarce plants thrive in these areas, including fir clubmoss, dwarf willow, and greater streak-moss.
- Populations of these species are sufficiently large and widespread to be sustained into the future.
- All factors affecting the achievement of the above conditions are under control.

European dry heaths

- The extent, quality and diversity of heath vegetation are maintained and, where possible, degraded heath is restored to good condition.
- The main heathland areas within the SAC and SSSI have a varied age structure with a mosaic of young heath, mature heath and degenerate heath.
- All factors affecting the achievement of these conditions are under control.

Hydrophilous tall herb fringe communities of plains and montane to alpine levels

- The cliff ledges with less acidic soil remain largely free from grazing, such that the typical flowering plants can flourish and flower freely.
- Several uncommon plants thrive in these areas, including serrated wintergreen and rare hawkweeds.
- The populations of these plants are sufficiently large and widespread to be sustained into the future.
- All factors affecting the achievement of the above conditions are under control. The acidic sandstone rocks, including crevices and scree, remain free from disturbance to and support typical plants, including mosses, ferns and lichens.

3.7.4 Threats and Pressures to Site Integrity³⁰

While there is no Site Improvement Plan for the SAC, the main pressures and threats to site integrity can be inferred from the site's Core Management Plan, which outlines

³⁰ https://naturalresources.wales/media/671043/Brecon%20Beacons%20SAC%20plan%20_Eng_.pdf [Accessed on the 25/09/2026]

the management techniques that are required to achieve the conservation objectives for the SAC.

The main threats and pressures to the site integrity of the SAC are the following:

- Grazing
- Erosion
- Climbing
- Air Quality
- Bracken Control

3.8 Usk Bat Sites SAC

3.8.1 Introduction

The SAC comprises a wide variety of different habitats, including bogs and marshes (40.2%), heath and scrub (32.2%), Alpine and sub-alpine grassland (3.9%), dry grassland and steppes (3.8%) and broad-leaved deciduous woodland (3.4%).

Mynydd Llangatwg, the area making up large parts of the SAC, consists mainly of open moorland and bog, and represents one of the largest sections of exposed upland limestone crag in south Wales. The Craig y Cilau National Nature Reserve (NNR), which covers a large portion of the limestone escarpment, comprises areas of limestone grassland, scree, woodland and scrub. An extensive system of caves and sinkholes has developed beneath the Mynydd Llangatwg.

The NNR has been established primarily to protect the lesser horseshoe bat roosts in the caves, a primary reason for selection of this site as a SAC. However, the site also supports a noteworthy assemblage of plants, such as the small-leaved lime, several species of whitebeam, limestone fern, endemic hawkweeds and the alpine enchanter's-nightshade. The various micro-habitats on the cliffs and boulders harbour a typical range of fern, bryophytes and calcareous lichens. Notable lichen species include the jelly lichen *Collema cristatum*, *Leproplacetum chryssodetae* and *Aspicilion calcarean*.

Other Annex I habitats are also present, but not a primary reason for site selection. For example, these include Tilio-Acerion forest along the cliffs, which support rare whitebeams and are intermixed with beechwood in the Clydach Gorge.

3.8.2 Qualifying Features³¹

The site has been designated as a SAC, a site of European importance, for a variety of features.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- European dry heaths
- Degraded raised bogs still capable of natural regeneration

³¹ <https://sac.jncc.gov.uk/site/UK0014784> [Accessed on the 15/01/2020]

- Blanket bogs
- Calcareous rocky slopes with chasmophytic vegetation
- Caves not open to the public
- *Tilio-Acerion* forests of slopes, screes and ravines

Annex II species that are a primary reason for selection of this site

- Lesser horseshoe bat *Rhinolophus hipposideros*

3.8.3 Conservation Objectives³²

The overarching conservation objectives are outlined in the Core Management Plan for the Usk Bat Sites published by Natural Resources Wales. While this document also provides conservation vision statements for the Annex I habitats, only the conservation objectives for the primary site feature are outlined below.

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 support a sustainable population of lesser horseshoe bats in the River Usk area.
- The population will be viable in the long term, acknowledging the population fluctuations of the species.
- Buildings, structures and habitats on the site will be in optimal condition to support the populations.
- Sufficient foraging habitat is available, in which factors such as disturbance, interruption to flight lines, and mortality from predation or vehicle collision, changes in habitat management that would reduce the available food source are not at levels which could cause any decline in population size or range.
- Management of the surrounding habitats is of the appropriate type and sufficiently secure to ensure there is likely to be no reduction in population size or range, nor any decline in the extent or quality of breeding, foraging or hibernating habitat.
- There will be no loss or decline in quality of linear features (such as hedgerows and tree lines) which the bats use as flight lines.
- There will be no loss of foraging habitat use by the bats or decline in its quality, such as due to over-intensive woodland management.
- All factors affecting the achievement of the above conditions are under control.

3.8.4 Threats / Pressures to Site Integrity³³

While there is no Site Improvement Plan for the SAC, the main pressures and threats to site integrity can be inferred from the site's Core Management Plan, which outlines

³²<https://naturalresources.wales/media/674281/Usk%20Bat%20Sites%20Management%20Plan%20Feb%2008.pdf>. As published by the Countryside Council for Wales (2008). [Accessed on the 13/10/2026]

³³ <https://naturalresources.wales/media/674281/Usk%20Bat%20Sites%20Management%20Plan%20Feb%2008.pdf> [Accessed on the 13/10/2026]

the management techniques that are required to achieve the conservation objectives for the SAC.

The main threats and pressures to the site integrity of the SAC are the following:

- Recreational pressure
- Inappropriate management of main habitats
- Inappropriate water level (in bogs)
- Inappropriate grazing levels
- Impact of atmospheric nitrogen deposition
- Quarrying / mining in the area
- Risk of arson / wildfires

3.9 Llangorse Lake SAC

3.9.1 Introduction

Llangorse Lake is a large shallow lake with a mean depth 2-3 metres lying in a natural depression of the Old Red Sandstone drift formed during the last glacial period. It is the largest natural lowland water in south Wales. It is one of the few natural eutrophic lakes in Britain and is of European importance in this context.

The combination of the mineral-rich geology and size and shape of the lake encourages the growth of a wide range of aquatic and marginal plants, including several that are rare in this part of Wales. The site also demonstrates a gradation from open water, with submerged and floating plant beds, through marginal swamp and fen vegetation, marshy grassland to drier unimproved grassland, with patches of willow scrub and wet woodland. The lake also has a diverse plankton community and supports a wide variety of invertebrates, including rare and scarce species.

3.9.2 Qualifying Features³⁴

Annex I habitats that are a primary reason for selection of this site:

- Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition* - type vegetation

3.9.3 Conservation Objectives³⁵

The overarching conservation objectives are outlined in the Core Management Plan for the Llangorse Lake SAC published by Natural Resources Wales.

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

- There is no loss of lake area, as defined in 2006 aerial photographs for summer levels.

³⁴ <https://sac.jncc.gov.uk/site/UK0012985> [Accessed on the 25/09/2026]

³⁵ <https://naturalresources.wales/media/672671/Llangorse%20lake%20core%20management%20plan.pdf> [Accessed on the 25/09/2026]

- The aquatic plant community is typical of this lake type in terms of composition and structure, including species such as water-starworts, stoneworts, duckweeds, broad-leaved and fine leaved pondweeds, water lilies, amphibious bistort, water-crowfoots, rigid hornwort, spiked water-milfoil, mare's-tail and horned pondweed.
- Plants indicating very high nutrient levels and excessive silt loads are not dominant and invasive non-native water plants do not threaten to out-compete the native flora.
- The nutrient, pH and dissolved oxygen levels are typical for a lake of this type and there is no excessive growth of cyanobacteria or green algae.
- There is a natural hydrological regime.
- The natural shoreline is maintained.
- The natural and characteristic substrate is maintained.
- The natural sediment load maintained.
- All factors affecting the achievement of these conditions are under control.

3.9.4 Threats and Pressures to Site Integrity³⁶

While there is no Site Improvement Plan for the SAC, the main pressures and threats to site integrity can be inferred from the site's Core Management Plan, which outlines the management techniques that are required to achieve the conservation objectives for the SAC.

The main threats and pressures to the site integrity of the SAC are the following:

- Water Quality and Sedimentation
- Recreation
- Habitat Management
- Non-native invasive species

3.10 Cwm Cadlan SAC

3.10.1 Introduction

Cwm Cadlan is situated approximately 1km north-east of the village of Penderyn and about 4km north of Hirwaun, near Aberdare. The grassland communities, which constitute the SAC features are scattered across the site and occur in most of the management units. Some of the communities present, namely M10, M24 and base-rich sedge community are very close in their floristics, and it is possible that the latter vegetation is derived from one or both of M10 and M24 through some form of agricultural modification (possibly drainage or heavy grazing in the past). It is also possible that some of the fen-meadow is derived from alkaline fen through past drainage.

The stands of neutral and acidic grassland, which are normally regarded as dry grassland types, generally have constant purple moor-grass, and often grade into wet grassland types. Similarly, at the head of the valley, marshy grassland grades into

³⁶ <https://naturalresources.wales/media/672066/FINAL%20Cdf%20Beech%20Woods%20SAC%20Man%20Plan.pdf> [Accessed on the 13/10/2026]

heathland, thus the site provides fine examples of transition zones between communities.

The globeflower population is possibly the largest in south Wales. Globeflower is found scattered across the site, mainly in stands on fen-meadow, alkaline fen and neutral grassland.

3.10.2 Qualifying Features³⁷

Annex I habitats that are a primary reason for selection of this site:

- *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)
- Alkaline fens

3.10.3 Conservation Objectives³⁸

The overarching conservation objectives are outlined in the Core Management Plan for the Cwm Cadlan SAC published by Natural Resources Wales.

Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)

- Fen-meadow will occupy at least 26 ha of a total area of marshy grassland habitat which itself will cover at least 42 ha.
- The remainder of the site will mainly consist of other semi-natural habitat, including alkaline fen.
- Typical fen-meadow plants will be common.
- Plants indicating agricultural modification or alteration to hydrology and drying of soils will be absent or present at only low cover.
- Although rushes are frequent, the more bulky species will not exceed 33% cover.
- Bare ground will generally not exceed 5% cover and vegetation litter 25%.
- Dense scrub will be largely absent from the fen-meadow, but it is probably desirable for invertebrates and birds to have a sparse scattering of shrubs or trees.
- All factors affecting the achievement of these conditions are under control.

Alkaline Fen

- Alkaline Fen will occupy about 11 ha or more.
- The remainder of the site will mainly consist of other semi-natural habitat including fen meadow.
- Typical alkaline fen plants will be common.
- Plants indicating agricultural modification or alteration of hydrology and drying of soils will be absent or present only at low cover.

³⁷ <https://sac.jncc.gov.uk/site/UK0013585> [Accessed on the 25/09/2026]

³⁸ <https://naturalresources.wales/media/675014/cwm-cadlan-sac-plan-english.pdf> [Accessed on the 25/09/2026]

- Although rushes are frequent, the more bulky species will not exceed 33% cover.
- Bare ground will generally not exceed 5% cover and vegetation litter 10 %.
- Scrub species will be largely absent from the alkaline fen.
- At selected springheads, water should flow in all but the most severe drought conditions.
- All factors affecting the achievement of these conditions are under control.

3.10.4 Threats and Pressures to Site Integrity³⁹

While there is no Site Improvement Plan for the SAC, the main pressures and threats to site integrity can be inferred from the site's Core Management Plan, which outlines the management techniques that are required to achieve the conservation objectives for the SAC.

The main threats and pressures to the site integrity of the SAC are the following:

- Grazing
- Control of Nutrient Inputs
- Scrub Encroachment
- Drainage
- Other Marshy Grassland
- Atmospheric deposition

³⁹ <https://naturalresources.wales/media/675014/cwm-cadlan-sac-plan-english.pdf> [Accessed on the 25/09/2026]

4. Impact Pathways

4.1 Recreational Pressure and Disturbance

4.1.1 Introduction

Recreational use of a Habitat site has the potential to:

- Prevent appropriate management or exacerbate existing management difficulties;
- Cause damage through erosion and fragmentation;
- Cause eutrophication as a result of dog fouling; and,
- Cause disturbance to sensitive species, particularly ground-nesting birds and wintering wildfowl.

Different types of Habitat sites are subject to different types of recreational pressures and have different vulnerabilities. Studies across a range of species have shown that the effects from recreation can be complex.

It should be emphasised that recreational use is not inevitably a problem. Many Habitat sites also contain nature reserves managed for conservation and public appreciation of nature. At these sites, access is encouraged and resources are available to ensure that recreational use is managed appropriately.

4.1.2 Mechanical/Abrasive Damage and Nutrient Enrichment

Most types of terrestrial Habitat site can be affected by soil compaction and erosion, which can arise as a result of visits by walkers, cyclists, horse-riders and users of off-road vehicles. Walkers with dogs contribute to pressure on sites through nutrient enrichment via dog fouling and also have potential to cause greater disturbance to fauna as dogs are less likely to keep to marked footpaths and move more erratically. Motorcycle scrambling and off-road vehicle use can cause serious erosion, as well as disturbance to sensitive species.

The following studies have assessed the impact of trampling associated with different recreational activities in different habitats:

- Wilson & Seney⁴⁰ examined the degree of track erosion caused by hikers, motorcyclists, horse riders and cyclists in 108 plots along tracks in the Gallatin National Forest, Montana. Although the results proved difficult to interpret, it was concluded that horses and hikers disturbed more sediment on wet tracks, and therefore caused more erosion, than motorcycles and bicycles.
- Cole et al⁴¹ conducted experimental off-track trampling in 18 closed forest, dwarf scrub and meadow & grassland communities (each trampled between 0 – 500 times) over five mountain regions in the US. Vegetation cover was assessed two weeks and one year after trampling, and an inverse relationship with trampling

⁴⁰ Wilson, J.P. & J.P. Seney. (1994). Erosional impact of hikers, horses, motorcycles and off-road bicycles on mountain trails in Montana. *Mountain Research and Development* **14**:77-88

⁴¹ Cole, D.N. (1995a). Experimental trampling of vegetation. I. Relationship between trampling intensity and vegetation response. *Journal of Applied Ecology* **32**: 203-214

Cole, D.N. (1995b). Experimental trampling of vegetation. II. Predictors of resistance and resilience. *Journal of Applied Ecology* **32**: 215-224

intensity was discovered, although this relationship was weaker after one year than two weeks indicating some recovery of the vegetation. Differences in plant morphology was found to explain more variation in response than soil and topographic factors. Low-growing, mat-forming grasses regained their cover best after two weeks and were considered most resistant to trampling, while tall forbs (non-woody vascular plants other than grasses, sedges, rushes and ferns) were considered least resistant. The cover of hemicryptophytes and geophytes (plants with buds below the soil surface) was heavily reduced after two weeks but had recovered well after one year and as such these were considered most resilient to trampling. Chamaephytes (plants with buds above the soil surface) were least resilient to trampling. It was concluded that these would be the least tolerant of a regular cycle of disturbance.

- Cole⁴² conducted a follow-up study (across four vegetation types) in which shoe type (trainers or walking boots) and trampling weight were varied. Although immediate damage was greater with walking boots, there was no significant difference after one year. Heavier trampers caused a greater reduction in vegetation height than lighter trampers, but there was no differential impact on vegetation cover.
- Cole & Spildie⁴³ experimentally compared the effects of off-track trampling by hikers and horse riders (at two intensities – 25 and 150 passes) in two woodland vegetation types (one with an erect forb understorey and one with a low shrub understorey). Horse trampling was found to cause the largest reduction in vegetation cover. The forb-dominated vegetation suffered greatest disturbance but recovered rapidly. Generally, it was shown that higher trampling intensities caused more disturbance.
- In heathland sites, trampling damage can affect the value of a site to wildlife. For example, heavy use of sandy tracks loosens and continuously disturbs sand particles, reducing the habitat's suitability for invertebrates⁴⁴. Species that burrow into flat surfaces such as the centres of paths, are likely to be particularly vulnerable, as the loose sediment can no longer maintain their burrow. In some instances, nature conservation bodies and local authorities resort to hardening paths to prevent further erosion. However, this is concomitant with the loss of habitat used by wildlife, such as sand lizards and burrowing invertebrates.

A major concern for nutrient-poor terrestrial habitats (e.g. heathlands, sand dunes, bogs and fens) is nutrient enrichment associated with dog fouling (addressed in various reviews, e.g. footnote 45). It is estimated that dogs will defecate within 10 minutes of starting a walk and therefore most nutrient enrichment arising from dog faeces will occur within 400m of a site entrance. In contrast, dogs will urinate at frequent intervals during a walk, resulting in a more spread out distribution of urine. For example, in Burnham Beeches National Nature Reserve it is estimated that 30,000 litres of urine and 60 tonnes of dog faeces are deposited annually⁴⁶. While there is

⁴² Cole, D.N. (1995c). Recreational trampling experiments: effects of trampler weight and shoe type. Research Note INT-RN-425. U.S. Forest Service, Intermountain Research Station, Utah.

⁴³ Cole, D.N., Spildie, D.R. (1998). Hiker, horse and llama trampling effects on native vegetation in Montana, USA. *Journal of Environmental Management* **53**: 61-71

⁴⁴ Taylor K., Anderson P., Liley D. & Underhill-Day J.C. (2006). Promoting positive access management to sites of nature conservation value: A guide to good practice. English Nature / Countryside Agency, Peterborough and Cheltenham.

⁴⁵ Taylor K., Anderson P., Taylor R.P., Longden K. & Fisher P. (2005). Dogs, access and nature conservation. English Nature Research Report, Peterborough.

⁴⁶ Barnard A. (2003). Getting the facts – Dog walking and visitor number surveys at Burnham Beeches and their implications for the management process. *Countryside Recreation* **11**:16-19.

limited information on the chemical constituents of dog faeces, nitrogen is one of the main components⁴⁷. Nutrient availability is the major determinant of plant community composition and the effect of dog defecation in sensitive habitats is comparable to a high-level application of fertiliser, potentially resulting in a shift towards plant communities that are more typical of improved grasslands.

4.1.3 Disturbance

Human activity can affect birds either directly (e.g. through causing them to flee) or indirectly (e.g. through damaging their habitat). The most obvious direct effect is that of immediate mortality such as death by shooting, but human activity can also lead to behavioural changes (e.g. alterations in feeding behaviour, nest abandonment, avoidance of certain areas etc.) and physiological changes (e.g. an increase in heart rate) that, although less noticeable, may ultimately result in major population-level effects by altering the balance between immigration/birth and emigration/death.⁴⁸

Concern regarding the effects of disturbance on birds stems from the fact that they are expending energy unnecessarily and time spent responding to disturbance is time that is not spent feeding⁴⁹. Disturbance therefore increases energetic expenditure while reducing energetic intake, which can adversely affect the 'condition' and ultimately survival of birds. Additionally, displacement of birds from one feeding site to another can increase the pressure on the resources available within alternative foraging sites, which must sustain a greater number of birds⁵⁰. Moreover, the higher proportion of time a breeding bird spends away from its nest, the more likely it is that eggs will cool and the more vulnerable they, or any nestlings, are to predators. Recreational effects on ground-nesting birds are particularly severe, with many studies concluding that urban sites support lower densities of key species, such as stone curlew and nightjar⁵¹
⁵².

Several factors (e.g. seasonality, type of recreational activity) may have pronounced impacts on the nature of bird disturbance. Disturbance in winter may be more impactful because food shortages make birds more vulnerable at this time of the year. In contrast, this may be counterbalanced by fewer recreational users in the winter months and lower overall sensitivity of birds outside the breeding season. Evidence in the literature suggests that the magnitude of disturbance clearly differs between different types of recreational activities. For example, dog walking leads to a significantly higher reduction in bird diversity and abundance compared to hiking⁵³. Scientific evidence also suggests that key disturbance parameters, such as areas of influence and flush distance, are significantly greater for dog walkers than hikers⁵⁴. Furthermore, differences in on-site route lengths and usage patterns likely imply that key spatial and temporal parameters (such as the area of a site potentially impacted and the frequency

⁴⁷ Taylor K., Anderson P., Liley D. & Underhill-Day J.C. (2006). Promoting positive access management to sites of nature conservation value: A guide to good practice. English Nature / Countryside Agency, Peterborough and Cheltenham.

⁴⁸ Riley, J. 2003. Review of Recreational Disturbance Research on Selected Wildlife in Scotland. Scottish Natural Heritage.

⁴⁹ Riddington, R. *et al.* (1996). The impact of disturbance on the behaviour and energy budgets of Brent geese. *Bird Study* **43**:269-279.

⁵⁰ Gill, J.A., Sutherland, W.J. & Norris, K. (1998). The consequences of human disturbance for estuarine birds. *RSPB Conservation Review* **12**: 67-72.

⁵¹ Clarke R.T., Liley D., Sharp J.M., Green R.E. (2013). Building development and roads: Implications for the distribution of stone curlews across the Brecks. *PLOS ONE*. <https://doi:10.1371/journal.pone.0072984>.

⁵² Liley D. & Clarke R.T. (2003). The impact of urban development and human disturbance on the numbers of nightjar *Caprimulgus europaeus* on heathlands in Dorset, England. *Biological Conservation* **114**: 219-230.

⁵³ Banks P.B., Bryant J.Y. (2007). Four-legged friend or foe? Dog walking displaces native birds from natural areas. *Biology Letters* **3**: 14pp.

⁵⁴ Miller S.G., Knight R.L., Miller C.K. (2001). Wildlife responses to pedestrians and dogs. *Wildlife Society Bulletin* **29**: 124-132.

of disturbance) will also differ between recreational activities. This suggests that activity type is a factor that ought to be taken into account in HRAs.

4.1.4 Summary

Several Habitats sites within and in proximity to Caerphilly county borough are designated for habitats and species that are sensitive to recreational pressure. The increase in residential development allocated in the Plan would lead to an increase in the local population and demand for access to outdoor spaces. The HRA process needs to adequately assess potential recreational pressure effects of the Plan on these Habitats sites. Although Aberbargoed Grasslands SAC is located within Caerphilly, recreation is not identified in the Core Management Plan as an issue and *Molinia* meadows are not appealing areas for public recreation due to their wet nature and the tussocky nature of the terrain which is difficult to walk through.

Overall, the following Habitats sites are sensitive to increased recreational access, either alone or 'in-combination' with other plans and projects, due to the allocation of residential development in the Plan (the sites in **bold** are taken forward into the following HRA chapters):

- Cardiff Beech Woods SAC
- Severn Estuary SAC/SPA/Ramsar
- River Usk/Afon Wysg SAC
- Brecon Beacons SAC
- Usk Bat Sites SAC
- Llangorse Lake SAC
- Cwm Cadlan SAC

4.2 Atmospheric Pollution

The main pollutants of concern for Habitat sites are oxides of nitrogen (NO_x), ammonia (NH₃) and sulphur dioxide (SO₂), and are summarised in Table 2. NH₃ can have a directly toxic effect upon vegetation, particularly at close distances to the source such as near road verges⁵⁵. NO_x can also be toxic at very high concentrations (far above the annual average Critical Level). However, NO_x and NH₃ exert their main impacts on ecosystems via determining the total nitrogen (N) deposition to soils, potentially leading to deleterious knock-on effects. Increases in N deposition from the atmosphere is widely known to enhance soil fertility and leading to eutrophication. This often has adverse effects on community composition and the quality of semi-natural, nitrogen-limited terrestrial and aquatic habitats^{56 57}.

⁵⁵ http://www.apis.ac.uk/overview/pollutants/overview_NOx.htm.

⁵⁶ Wolseley, P. A.; James, P. W.; Theobald, M. R.; Sutton, M. A. **2006**. Detecting changes in epiphytic lichen communities at sites affected by atmospheric ammonia from agricultural sources. *Lichenologist* **38**: 161-176

⁵⁷ Dijk, N. **2011**. Dry deposition of ammonia gas drives species change faster than wet deposition of ammonium ions: Evidence from a long-term field manipulation. *Global Change Biology* **17**: 3589-3607

Table 2: Main sources and effects of air pollutants on habitats and species⁵⁸.

Pollutant	Source	Effects on habitats and species
Sulphur Dioxide (SO ₂)	The main sources of SO₂ are electricity generation, and industrial and domestic fuel combustion. However, total SO₂ emissions in the UK have decreased substantially since the 1980's. Another origin of sulphur dioxide is the shipping industry and high atmospheric concentrations of SO₂ have been documented in busy ports. In future years shipping is likely to become one of the most important contributors to SO₂ emissions in the UK.	Wet and dry deposition of SO₂ acidifies soils and freshwater and may alter the composition of plant and animal communities. The magnitude of effects depends on levels of deposition, the buffering capacity of soils and the sensitivity of impacted species. However, SO₂ background levels have fallen considerably since the 1970's and are now not regarded a threat to plant communities. For example, decreases in Sulphur dioxide concentrations have been linked to returning lichen species and improved tree health in London.
Acid deposition	Leads to acidification of soils and freshwater via atmospheric deposition of SO₂, NO_x, ammonia and hydrochloric acid. Acid deposition from rain has declined by 85% in the last 20 years, which most of this contributed by lower sulphate levels. Although future trends in S emissions and subsequent deposition to terrestrial and aquatic ecosystems will continue to decline, increased N emissions may cancel out any gains produced by reduced S levels.	Gaseous precursors (e.g. SO₂) can cause direct damage to sensitive vegetation, such as lichen, upon deposition. Can affect habitats and species through both wet (acid rain) and dry deposition. The effects of acidification include lowering of soil pH, leaf chlorosis, reduced decomposition rates, and compromised reproduction in birds / plants. Not all sites are equally susceptible to acidification. This varies depending on soil type, bed rock geology, weathering rate and buffering capacity. For example, sites with an underlying geology of granite, gneiss and quartz rich rocks tend to be more susceptible.
Ammonia (NH ₃)	Ammonia is a reactive, soluble alkaline gas that is released following decomposition and volatilisation of animal wastes. It is a naturally occurring trace gas, but	The negative effect of NH₄⁺ may occur via direct toxicity, when uptake exceeds detoxification capacity and via N accumulation.

⁵⁸ Information summarised from the Air Pollution Information System (<http://www.apis.ac.uk/>)

Pollutant	Source	Effects on habitats and species
	ammonia concentrations are directly related to the distribution of livestock. Ammonia reacts with acid pollutants such as the products of SO₂ and NO_x emissions to produce fine ammonium (NH₄⁺) - containing aerosol. Due to its significantly longer lifetime, NH₄⁺ may be transferred much longer distances (and can therefore be a significant trans-boundary issue). While ammonia deposition may be estimated from its atmospheric concentration, the deposition rates are strongly influenced by meteorology and ecosystem type.	Its main adverse effect is eutrophication, leading to species assemblages that are dominated by fast-growing and tall species. For example, a shift in dominance from heath species (lichens, mosses) to grasses is often seen. As emissions mostly occur at ground level in the rural environment and NH₃ is rapidly deposited, some of the most acute problems of NH₃ deposition are for small relict nature reserves located in intensive agricultural landscapes.
Nitrogen oxides (NO _x)	Nitrogen oxides are mostly produced in combustion processes. Half of NO_x emissions in the UK derive from motor vehicles, one quarter from power stations and the rest from other industrial and domestic combustion processes. Nitrogen oxides have been consistently falling for decades due to a combination of coal fired power station closures, abatement of other combustion point sources and improved vehicle emissions technology. They are expected to continue to fall over the plan period.	Direct toxicity effects of gaseous nitrates are likely to be important in areas close to the source (e.g. roadside verges). A critical level of NO_x for all vegetation types has been set to 30 ug/m³. Deposition of nitrogen compounds (nitrates (NO₃), nitrogen dioxide (NO₂) and nitric acid (HNO₃)) contributes to the total nitrogen deposition and may lead to both soil and freshwater acidification. In addition, NO_x contributes to the eutrophication of soils and water, altering the species composition of plant communities at the expense of sensitive species.
Nitrogen deposition	The pollutants that contribute to the total nitrogen deposition derive mainly from oxidized (e.g. NO_x) or reduced (e.g. NH₃) nitrogen emissions (described separately above). While oxidized nitrogen mainly originates from major conurbations or highways, reduced nitrogen mostly derives from farming practices.	All plants require nitrogen compounds to grow, but too much overall N is regarded as the major driver of biodiversity change globally. Species-rich plant communities with high proportions of slow-growing perennial species and bryophytes are most at risk from N eutrophication. This is because many semi-natural plants cannot

Pollutant	Source	Effects on habitats and species
	The N pollutants together are a large contributor to acidification (see above).	assimilate the surplus N as well as many graminoid (grass) species. N deposition can also increase the risk of damage from abiotic factors, e.g. drought and frost.
Ozone (O ₃)	A secondary pollutant generated by photochemical reactions involving NO _x , volatile organic compounds (VOCs) and sunlight. These precursors are mainly released by the combustion of fossil fuels (as discussed above). Increasing anthropogenic emissions of ozone precursors in the UK have led to an increased number of days when ozone levels rise above 40ppb ('episodes' or 'smog'). Reducing ozone pollution is believed to require action at international level to reduce levels of the precursors that form ozone.	Concentrations of O ₃ above 40 ppb can be toxic to both humans and wildlife, and can affect buildings. High O ₃ concentrations are widely documented to cause damage to vegetation, including visible leaf damage, reduction in floral biomass, reduction in crop yield (e.g. cereal grains, tomato, potato), reduction in the number of flowers, decrease in forest production and altered species composition in semi-natural plant communities.

SO₂ emissions overwhelmingly derive from power stations and industrial processes that require the combustion of coal and oil, as well as shipping (particularly on a local scale)⁵⁹. NH₃ emissions primarily originate from agricultural practices⁶⁰, with some chemical processes and some vehicles (notably petrol cars) also making notable contributions.

In contrast, NO_x emissions are dominated by the output of vehicle exhausts (more than half of all emissions). A 'typical' housing development will contribute by far the largest portion to its overall NO_x footprint (92%) through its associated road traffic. Other sources, although relevant, are of minor importance (8%) in comparison⁶¹. Therefore, the emerging LP, which will increase the population of Caerphilly, can be reasonably expected to increase emissions of NO_x and NH₃, and thus total N deposition through an increase in vehicular traffic.

According to the World Health Organisation, the critical NO_x concentration (Critical Level) for the protection of vegetation is 30 µgm⁻³; the threshold for sulphur dioxide is 20 µgm⁻³. In addition, ecological studies have determined Critical Loads (CLs)⁶² for atmospheric nitrogen deposition (that is, NO_x combined with NH₃).

⁵⁹ http://www.apis.ac.uk/overview/pollutants/overview_SO2.htm.

⁶⁰ Pain, B.F.; Weerden, T.J.; Chambers, B.J.; Phillips, V.R.; Jarvis, S.C. 1998. A new inventory for ammonia emissions from U.K. agriculture. *Atmospheric Environment* **32**: 309-313

⁶¹ Proportions calculated based upon data presented in Dore CJ et al. 2005. UK Emissions of Air Pollutants 1970 – 2003. UK National Atmospheric Emissions Inventory. <http://www.airquality.co.uk/archive/index.php>

⁶² The critical load is the rate of deposition beyond which research indicates that adverse effects can reasonably be expected to occur

- 4.3 According to the Department of Transport's Transport Analysis Guidance, beyond 200m, the contribution of vehicle emissions from the roadside to local pollution levels is insignificant (

Figure 1 and see reference ⁶³). Therefore, this is the distance that is used in this HRA to identify major commuter routes along Habitat Sites, which are likely to be significantly affected by development outlined in the LP.

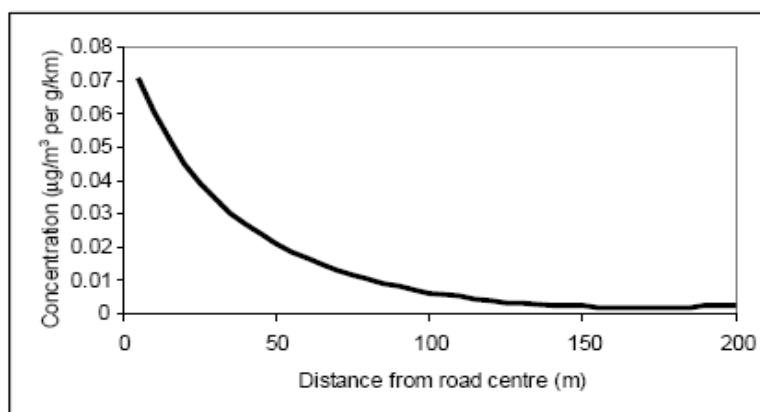


Figure 1: Traffic contribution to concentrations of pollutants at different distances from a road.

The following Habitat designated sites are vulnerable to atmospheric pollution arising from urban growth resulting from the Plan either alone or 'in-combination' with other plans and projects:

- Severn Estuary SAC/SPA/Ramsar;
- Cardiff Beech Woods SAC.
- Usk Bat Sites SAC
- Cwm Clydach Woodlands SAC
- River Usk SAC
- Aberbargoed Grasslands SAC
- Blaen Cynon SAC
- Coedydd Nedd y Mellte SAC
- Sugar Loaf Woodlands SAC
- Llangorse Lake SAC

4.4 Loss of Functionally Linked Land

While most Habitat sites have been geographically defined to encompass the key features that are necessary for coherence of their structure and function, and the support of their qualifying features, this is not necessarily the case. A diverse array of qualifying species including birds and fish are not always confined to the boundary of designated sites.

For example, the highly mobile nature of both wader and waterfowl species implies that areas of habitat of crucial importance to the integrity of qualifying populations lie

⁶³ https://webarchive.nationalarchives.gov.uk/ukgwa/*/http://www.dft.gov.uk/webtag/documents/expert/unit3.3.3.php; (Accessed on 13/10/2026)

outside the physical limits of Habitat sites. Despite not being part of the formal designation, these habitats are integral to the maintenance of the structure and function of the designated site, for example by encompassing important foraging grounds. Therefore, land use plans that may affect such functionally linked habitat require further assessment.

There is now an abundance of authoritative examples of HRA cases on plans affecting bird populations, where Natural England recognised the potential importance of functionally linked land⁶⁴. For example, bird surveys in relation to a previous HRA established that approximately 25% of the golden plover population in the Somerset Levels and Moors SPA were affected while on functionally linked land, and this required the inclusion of mitigation measures in the relevant plan policy wording. Another important case study originates from the Mersey Estuary SPA / Ramsar, where adjacently located functionally linked land had a peak survey count of 108% of the 5 year mean peak population of golden plover. This finding led to considerable amendments in the planning proposal to ensure that the site integrity was not adversely affected.

Generally, the identification of an area as functionally linked habitat is not always a straightforward process. The importance of non-designated land parcels may not be apparent and thus might require the analysis of existing data sources (e.g. Bird Atlases or data from record centres) to be firmly established. In some instances, data may not be available at all, requiring further survey work.

In addition to birds, the marsh fritillary butterfly populations of Aberbargoed Grasslands SAC and Blaen Cynon SAC are partly dependent on suitable habitat outside the SAC boundaries for persistence of the SAC populations. For example, the Conservation Objectives note that the marsh fritillary population of Aberbargoed Grassland SAC require 50ha of suitable habitat. The SAC itself is 39.6ha in size and not all of it comprises the butterfly's preferred habitat of wet grassland and devil's-bit scabious, the caterpillars' only foodplant. As such it is likely that the butterfly population from the Aberbargoed Grasslands SAC and Blaen Cynon SAC will also depend on using habitat patches outside the Habitats Site boundary that contain significant areas of devils bit scabious. In its adult life stage, both male and female butterflies may disperse from their former foraging patches. Research indicates that the average dispersal distances for male and female marsh fritillary are 1.5km and 510m respectively⁶⁵. Therefore, any wet grassland with a high frequency of devil's bit scabious in the sward within 1.5km from either SAC boundary, particularly marshy grassland, could constitute functionally linked habitat for the resident butterfly population.

Regarding the lesser horseshoe bat of the Usk Bat Sites SAC, a Core Sustainance Zone (CSZ) is "the area surrounding a communal roost within which habitat availability and quality will have a significant impact on the resilience and conservation status of the colony using the roost" (Bat Conservation Trust)⁶⁶. The Bat Conservation Trust indicate that UK studies have identified a typical CSZ for lesser horseshoe bats of 2km around a roost.

In addition to the Severn Estuary SPA/Ramsar site, the migratory fish species (river lamprey, sea lamprey and Atlantic salmon) and otter of the River Usk SAC and Severn

⁶⁴ Chapman C & Tyldesley D. 2016. Functional linkage: How areas that are functionally linked to European sites have been considered when they may be affected by plans and projects – A review of authoritative decisions. *Natural England Commissioned Reports* **207**. 73pp

⁶⁵ Wahlberg, N., Klemmti, T., Selonen, V. & Hanski, I. (2002). Metapopulation structure and movements in five species of checkerspot butterflies. *Oecologia* **130**: 2074-2091.

⁶⁶ [Core Sustainance Zones - Landscapes for Bats - Bat Conservation Trust](#)

Estuary SAC also depend on habitat outside the SAC boundaries during some parts of their life cycle.

The following Habitat designated sites are vulnerable to loss of functionally linked land resulting from the Plan either alone or 'in-combination' with other plans and projects:

- Aberbargoed Grassland SAC;
- Blaen Cynon SAC;
- Severn Estuary SAC/SPA/Ramsar;
- River Usk SAC;
- Usk Bat Sites SAC

4.5 Water Quantity, Level and Flow

The water level, its flow rates and the mixing conditions are important determinants of the condition of Habitat sites and their qualifying features. Hydrological processes are critical in influencing habitat characteristics in coastal waters, including current velocity, water depth, dissolved oxygen levels, salinity and water temperature. In turn these parameters determine the short- and long-term viability of plant and animal species, as well as overall ecosystem composition. Changes to the water flow rate within an estuary can be associated with a multitude of further impact pathways, including substratum loss, smothering and changes in wave exposure.

Coastal environments rely on hydrological connections with freshwater bodies, such as rivers, streams and lakes. However, while the natural fluctuation of water levels within narrow limits is desirable, excess or too little water supply might cause water levels to be outside of the required range of qualifying birds and fish, or the invertebrate or plant assemblages they depend upon. There are two mechanisms through which urban development might negatively affect the water level in Habitat sites:

- The supply of new housing with potable water will require increased abstraction of water from surface water and groundwater bodies. Depending on the level of water stress in the geographic region, this may impact the aquatic conditions in Habitat sites sharing the same catchment.
- The proliferation of impermeable surfaces in urban areas increases the volume and speed of surface runoff, particularly during intense rainfall events. Traditional drainage systems often cannot cope with the volume of stormwater and sewer overflows are designed to discharge untreated water directly into watercourses. Often this pluvial flooding results in downstream inundation of watercourses and larger volumes of water reaching designated sites.

Increases to the quantity and rate of water delivery can result in summer flooding and prolonged / deeper winter flooding. This in turn results in the reduction of feeding and roosting sites for birds. For example, in areas where water is too deep, most waders will be unable to reach their food sources close to the ground.

The allocation of residential and employment development in the Plan means that the following Habitat site is at risk regarding changes in water quantity, level and flow:

- Severn Estuary SAC / SPA / Ramsar;
- Aberbargoed Grasslands SAC;
- Blaen Cynon SAC;

- River Usk SAC.

4.6 Water Quality

The quality of the water that feeds Habitat sites is an important determinant of the condition of the habitats and species they support. Poor water quality can have a range of environmental impacts:

- At high levels, toxic chemicals and metals can result in immediate death of aquatic life, and can have detrimental effects even at lower levels, including increased vulnerability to disease and changes in wildlife behaviour.
- Eutrophication, the enrichment of water with nutrients, increases plant growth and consequently results in oxygen depletion. Algal blooms, which commonly result from eutrophication, increase turbidity and decrease light penetration. The decomposition of organic wastes that often accompanies eutrophication deoxygenates water further, augmenting the oxygen-depleting effects of eutrophication. In the marine environment, nitrogen is the limiting plant nutrient and so eutrophication is associated with discharges containing bioavailable nitrogen.
- Some pesticides, industrial chemicals and components of sewage effluent are suspected to interfere with the functioning of the endocrine system, possibly having negative effects on the reproduction and development of aquatic life.

The most notable issue in relation to the 2RLDP is the discharge of treated sewage effluent into the Severn Estuary SAC / SPA / Ramsar, which is likely to increase nutrient concentrations in estuarine waters. In local watercourses feeding into the Severn Estuary phosphorus is the main limiting nutrient, whereas nitrogen will be the primary limiting factor in the estuary itself. Since the authority boundary encompasses the SAC / SPA / Ramsar, there is also a risk that surface runoff from impermeable surfaces containing non-toxic and toxic pollutants could directly reach the estuary.

The Plan assessed in this HRA provides for development in the geographic area covered by Welsh Water, responsible for wastewater treatment in Caerphilly. The increase in residential and employment development allocated in the 2RLDP will lead to an increase in the volume of treated sewage effluent discharged into local waterbodies, including the Severn Estuary. Overall, the following Habitat site within 15km of the Caerphilly authority boundary requires further consideration in relation to negative water quality impacts either alone or 'in-combination' with other plans and projects:

- Severn Estuary SAC / SPA / Ramsar
- River Usk SAC
- Llangorse Lake SAC
- Aberbargoed Grassland SAC;
- Blaen Cynon SAC.

5. Test of Likely Significant Effects

5.1 Atmospheric Pollution

The Usk Bat Sites SAC is primarily designated for its populations of lesser horseshoe bats *Rhinolophus hipposideros*. This species' main habitat is mixed broadleaved and yew woodland. According to APIS the habitat is sensitive to nitrogen deposition with a critical load set at 10 – 20 kg N/ha/yr. There are also several Annex I habitats, such as degraded raised bogs and blanket bogs that are also highly sensitive to excessive nitrogen input, although these are much further from potentially relevant roads. For both types of bog habitats, the empirical critical load for annual nitrogen deposition has been set at 5 – 10 kg N/ha/yr. A preliminary assessment of the road infrastructure around the Usk Bat Sites SAC indicates that it lies directly adjacent to the A465. Given the proximity of the SAC to such major traffic infrastructure, the site is screened in for Appropriate Assessment.

The Cwm Clydach Woodlands SAC is designated for its beech *Fagus* woodland habitats, which are generally considered to be susceptible to atmospheric nitrogen deposition. APIS reports a site relevant critical load for beech forests of 10 – 20 kg N/ha/yr. Exceedance impacts would potentially be changes in ground vegetation and mycorrhiza, nutrient shifts and concomitant changes in the soil fauna. The SAC is situated similarly to the Usk Bat Sites SAC, directly adjacent to the A465 and therefore requires further consideration in an Appropriate Assessment.

The Cardiff Beech Woods SAC is designated for two woodland habitats (*Asperulo-Fagetum* beech forests and *Tilio-Acerion* forests of slopes, screes and ravines. Like many habitats of conservation importance, woodlands are sensitive to atmospheric nitrogen deposition particularly due to impacts on their associated ground flora and bryophyte / lichen assemblages. APIS specifies nitrogen CLs for beech forest and *Tilio-Acerion* forest of 10-20 kg N/ha/yr and 15-20 kg N/ha/yr respectively. Furthermore, since bryophytes and lichens are integral to beech forest ecosystems, a Critical Level for NH₃ of 1 µg/m³ is established for *Asperulo-Fagetum* beech forest. The Cardiff Beech Woods SAC lies near the A470, a strategic transport corridor connecting Caerphilly to Cardiff. Given the proximity of the SAC to such major traffic infrastructure, the site is screened in for Appropriate Assessment.

The Aberbargoed Grasslands SAC are designated for their *Molinia* meadows on calcareous, peaty or clayey-silt laden soils, which identified on APIS as being sensitive to atmospheric nitrogen deposition. Here, a critical load of 10-20 kg N/ha/yr for these meadows is listed. However, the Core Management Plan published by the Countryside Council for Wales does not identify atmospheric pollution as a key management measure for the SAC. Nonetheless, the closest significant road within 200m of the SAC is the A4049. Therefore the site is screened in for Appropriate Assessment.

The Severn Estuary SAC is designated for several habitats, including estuaries and Atlantic salt meadows, which are integral to the SPA's / Ramsar's bird assemblages and have a critical nitrogen load of 10-20 kg N/ha/yr, as identified on APIS. The critical load applies for most of the saltmarsh, but it is noted that the lower level of 10 kg N/ha/yr should be used for the more densely vegetated upper marsh and areas subjected to direct run-off from adjacent catchments. Exceedance impacts of the critical load would be an increase in late successional species, increased productivity and an increase in dominance of graminoid species. Several waterfowl species require

a presence and suitable abundance of saltmarsh food plants for survival, such as saltmarsh grasses, herbs and their seeds, including *Puccinella maritima*, *Salicornia* and *Agrostis*. While the Severn Estuary sites are traversed by the M4 motorway, there is no obvious connection to commuter routes arising from Caerphilly. Cardiff, the most likely work destination for Monmouthshire residents in proximity to the designated sites, can be more easily reached via alternative routes. As such, the Severn Estuary Habitats sites are screened out from Appropriate Assessment.

The River Usk SAC is a riverine system of plain to montane levels, which supports a range of fish, such as several lamprey species, migratory salmon and otters. The survival of these species is tightly linked to the maintenance of the integrity of the river. Freshwater habitats are typically regarded as being primarily phosphate limited, with lesser regard being given to nitrogen input. The River Usk Management Catchment Plan summarises a variety of measures implemented to preserve the integrity of the SAC⁶⁷ and explicitly refers to reducing the deposition of nitrogen deriving from atmospheric pollution. However, 'Delivering the Nutrient Management Plan' on the Wye-Usk Foundation website indicates the focus on nutrient control in these catchments remains phosphate, which does not come from the atmosphere. Moreover, there are no atmospheric nitrogen critical loads available to use in assessments for riverine European sites. As such, the River Usk SAC is screened out from Appropriate Assessment regarding atmospheric pollution.

Blaen Cynon SAC and Coedydd Nedd y Mellte SAC are located within 200m of the A465 and Brecon Beacons SAC is located within 200m of the A470. However, the SACs are remote from locations of housing or employment growth in Caerphilly being over 13km from the county borough boundary and over 17km from the nearest allocations. This is beyond the distance over which traffic generation arising in Caerphilly is likely to be significant, as census journey to work data (2021)⁶⁸ indicates that the majority (nearly 70%) of people in employment in the UK travel less than 10 km to work and the remainder will generally have dispersed across the network by that distance. Therefore, these sites are screened out from Appropriate Assessment.

The Sugar Loaf Woodlands SAC is designated for its old sessile oak woods, which have an empirical critical load of 10 – 15 kg N/ha/yr as outlined on APIS. Exceedance of this threshold would result in a decrease in mycorrhiza, loss of epiphytic lichens and bryophytes, and more general changes to the ground vegetation. However, the site is located further than 200m away from the nearest major roads. For example, it lies approx. 885m from the A40 and 1.1km from the A465. As such this SAC can be screened out and will not require Appropriate Assessment.

APIS highlights that the Llangorse Lake SAC is vulnerable to atmospheric nitrogen deposition, although critical loads for comparable habitats have not been established due to the complexity of developing critical loads for open freshwater habitats. While it is well known that meso- and eutrophic systems are often phosphate limited, nitrogen may be a co-limiting factor. However, despite the site's general sensitivity to atmospheric pollution, there is no major road within 200m of the SAC. The closest road that would provide a significant commuting corridor is the A40, which is located 1.9km to the south-west of Llangorse Lake SAC. This is beyond the screening distance for atmospheric pollution, and the SAC is therefore screened out from Appropriate Assessment.

⁶⁷ Page 12 of the document at <https://naturalresources.wales/media/3214/usk-management-catchment.pdf>. [Accessed on the 09/08/2024]

⁶⁸ [Travel to work, England and Wales - Office for National Statistics](#)

The following Habitats sites within 15km of Caerphilly are susceptible to atmospheric pollution (the sites that are screened in for Appropriate Assessment following discussion in the text are marked in bold):

- **Aberbargoed Grasslands SAC**
- **Cardiff Beech Woods SAC**
- **Brecon Beacons SAC**
- **Cwm Clydach Woodlands SAC**
- **Usk Bat Sites SAC**

5.2 Recreational Pressure

Due to the growing population and a trend towards spending an increased amount of time outdoors, recreational pressure is one of the most widely documented impacts in Habitat Sites in England and Wales. The Severn Estuary SAC / SPA / Ramsar is sensitive to recreational pressure as identified in Natural England's Site Improvement Plan (SIP): *'Public access and recreation may have an impact on bird species sensitive to disturbance, causing displacement from feeding, roosting and moulting areas, and if severe could affect long term survival and population numbers and distributions within the Estuary.'* This is affirmed in the joint CCW (now NRW) and Natural England advice note on the Severn Estuary EMS, which states that *'there is intermittent disturbance to the internationally important migratory species and the waterfowl assemblage from both the landward and seaward side of the site which has increased in recent years, due to the estuary becoming more populated and the development of all weather recreational pursuits. All supporting habitats are currently **highly vulnerable** to noise and visual disturbance.'* Pressure in the estuary arises from a diverse number of recreational activities, including dog walking, walking, horse-riding, cycling, beach activities, angling, wildfowling and water-based sports. The SIP already specifies an action of developing a strategic approach to visitor management, including appropriate zonation to protect currently undisturbed areas and management plans for major recreational beaches. The county borough of Caerphilly lies approximately 5km north from the Severn Estuary SAC / SPA / Ramsar at its nearest point, and therefore residents may visit the site. The Seven Estuary Habitats sites are therefore screened in for Appropriate Assessment.

The Cardiff Beech Woods SAC is designated for two woodland types, including *Asperulo-Fagetum* beech forest and *Tilio-Acerion* forest of slopes, screes and ravines. Both woodlands are sensitive to impacts from recreational access, albeit from different types of activities. The beech forest lies on moderately sloping ground that attracts a wide range of activities, including dog walking, walking, cycling and horse riding. In contrast, *Tilio-Acerion* forest is characterised by much steeper gradients and attracts more specialist niche activities such as rock climbing, scrambling and mountain-biking. Trees in woodland are primarily sensitive to trampling-related impacts, including continued abrasion of exposed roots and soil compacting. For example, increased footfall around sensitive root zones reduces the number and extent of pore spaces for water and nutrient storage. This can reduce the ability of trees to absorb essential nutrients from the soil. Furthermore, the high proportion of dog walkers in many Habitat sites represents an issue in relation to nutrient deposition in dog faeces and urine, an impact that is comparable to the application of agricultural fertilisers. Excessive inputs of nutrients to Habitat sites can lead to long-term changes in community composition, such as woodland ground flora. Generally, habitats of conservation importance are

characterised by diverse plant assemblages that tend to be replaced by graminoids under high nutrient regimes. The management plan for the SAC specifically identifies recreational pressure as being a concern. Cardiff Beech Woods SAC is therefore screened in for Appropriate Assessment.

The lesser horseshoe bat population in the Usk Bat Sites SAC are likely to be highly susceptible to recreational disturbance. As identified in the Core Management Plan for the site, internal disturbance to the maternity roost and the hibernation sites is likely to be a major stressor for the bats. However, the habitat features that the bats are associated with are classified as 'Caves not open to the public'. This means that human disturbance to bats is kept to a minimum by restricting public access to their roost sites. However, while some caves (e.g. Agen Allwedd) are gated to prevent public access, this is not the case for all caves. The Usk Bat Sites SAC also supports other habitats that are sensitive to recreational impacts, including its calcareous slopes with chasmophytic vegetation and its dry heathland elements. For example, rock climbing is an identified recreational activity causing disturbance to the plants and substrate of slopes. Heavy trampling damage might lead to erosion and bare ground, damaging the heathland habitats. While both caving and climbing are relatively rare recreational activities (in comparison to e.g. dog walking), the impact of individuals engaging in these activities might be disproportionately high. As a precautionary measure, the Usk Bat Sites SAC is therefore screened in for Appropriate Assessment.

The River Usk SAC is primarily designated for its anadromous fish species, including Atlantic salmon *Salmo salar*, twaite shad *Alosa fallax* and allis shad *Alosa alosa*. Generally, it is the adults travelling up the river to the spawning grounds, which are susceptible to the impacts of fishing. The Core Management Plan for the SAC identifies that both recreational and commercial fishing are threatening shad populations. These species are fished in large numbers and recreational fishing has been identified as one of the main reasons for their population declines. Relating to Atlantic salmon a seasonal catch restriction is already imposed by Natural Resources Wales, which require that all salmon caught before the 16th of June is released back to the water to protect fish stocks⁶⁹. However, given that exploitation of shad is currently unregulated, the River Usk SAC is screened in for Appropriate Assessment.

The Sugar Loaf Woodlands SAC, particularly its veteran trees within the old sessile oak woods with *Ilex* and *Blechnum* habitat component, is potentially sensitive to recreation. Natural Resources Wales' Core Management Plan⁷⁰ does not refer to low recreational pressure as a potential management requirement for the site. This, combined with the distance between the plan area and this site means that the plan will not result in likely significant effects with regards to recreational pressure. The site therefore can be screened out and requires no further consideration in an Appropriate Assessment.

The Cwm Clydach Woodlands SAC is not considered to be particularly sensitive to recreational pressure. The ground vegetation beneath the beech woodland canopy is relatively sparse and the negative impacts of trampling are therefore likely to be limited. However, other disturbance effects have been identified, particularly fly-tipping of domestic and recreational waste along roadsides leading through the SAC. However, the barriers that have been installed, have been successful in reducing the incidence of fly-tipping. Provided that these barriers are maintained, it is considered that the 2RLDP will not result in LSEs on the Cwm Clydach Woodlands SAC. The site

⁶⁹ <https://naturalresources.wales/days-out/things-to-do/fishing/?lang=en> [Accessed on the 09/08/2024]

⁷⁰ https://naturalresources.wales/media/674063/Sugar_Loaf_Woodlands_core_management_plan_Mar_2008%20A_.pdf [Accessed on the 09/08/2024]

therefore can be screened out and requires no further consideration in an Appropriate Assessment.

The Brecon Beacons SAC qualifying interest features comprise the chasmophytic and ledge vegetation on the most extensive areas of cliff and associated heathland. These are vulnerable to the impacts of erosion from trampling and also the impacts of climbing. The SAC is located over 10km from Caerphilly county borough. This is beyond the average core recreational catchment for non-coastal Habitats sites. Moreover, recreational activity in Bannau Brycheiniog is a Great Britain-wide consideration given its appeal, rather than a matter driven by local resident populations. Because of this it is unlikely that development within Caerphilly will lead to an increase in recreational pressure on the Brecon Beacons SAC. The site therefore can be screened out and requires no further consideration in an Appropriate Assessment.

Llangorse Lake SAC is a large shallow lake. It is the largest natural lowland water in south Wales. While the management plan indicates that the site is vulnerable to recreational pressure, the SAC is located over 14km from Caerphilly county borough. This is beyond the average core recreational catchment for non-coastal Habitats sites. Moreover, as with Bannau Brycheiniog, recreational use of the SAC is a Great Britain-wide consideration given its appeal, rather than a matter driven by local resident populations. Because of this it is unlikely that development within Caerphilly will lead to an increase in recreational pressure on Llangorse Lake SAC. The site therefore can be screened out and requires no further consideration in an Appropriate Assessment.

Cwm Cadlan SAC is not considered to be particularly sensitive to recreational pressure. Additionally, the SAC is located over 11km to the west of Caerphilly county borough. This is beyond the average core recreational catchment for non-coastal Habitats sites. The site therefore can be screened out and requires no further consideration in an Appropriate Assessment.

The following Habitats sites within 15km of Caerphilly are screened in for appropriate assessment either alone or 'in-combination' with other plans and projects with regards to changes in loss of functionally linked land:

- **Severn Estuary SAC/SPA / Ramsar**
- **Cardiff Beechwoods SAC**
- **Usk Bat Sites SAC**
- **River Usk SAC**

5.3 Loss of Functionally Linked Land

The qualifying waterfowl and wader species in the Severn Estuary SPA / Ramsar are mobile and routinely travel beyond the designated site boundary. Natural England's SIP for the Severn Estuary highlights the importance of modifications to offsite environments for SPA bird distributions. The dependence on functionally linked habitats varies considerably between species, but the Severn Estuary SPA / Ramsar is designated for several species that are known to regularly forage / roost outside designated sites (e.g. Bewick's swan, white-fronted goose, redshank and several species in the qualifying waterbird assemblage). Given this, the Severn Estuary SAC, SPA and Ramsar sites are screened in for Appropriate Assessment. Regarding migratory fish species within the Severn Estuary, while mapping suggests that there

are some watercourses that link the SAC with the plan area, there are no allocations on the watercourses in question and therefore the Severn Estuary SAC can be screened out from further assessment, with regards to loss of functionally linked land for migratory fish.

The lesser horseshoe bats in the Usk Bat Sites SAC are not only dependent on their roosts and foraging habitat in the SAC, but potentially also on habitat that lies outside the designated site boundary. Feeding areas and commuting routes (flightlines) outside the designation may therefore be integral to sustaining the bat population. The area of greatest bat activity surrounding a roost is defined as the Core Sustainance Zone (CSZ)⁷¹, however this is not available for all sites and / or bat species. Generally, lesser horseshoe bats forage between 2 and 3km from their roost but they have been observed to range up to 4km in their nightly foraging trips⁷². The Bat Conservation Trust identifies a weighted average CSZ of 2km for lesser horseshoe bats. It is therefore recognised that linear features (required to navigate) and permanent pasture / unimproved grassland (favoured feeding areas) and woodlands within this distance outside the SAC boundary need to be maintained. Given that the Usk Bat Sites SAC is located over 6km away from the plan area, residential and employment site allocations will not lead to LSEs on this SAC through the loss of supporting habitat. The site is therefore screened out of Appropriate Assessment.

Blaen Cynon SAC and Aberbargoed Grasslands SAC both have marsh fritillary as a qualifying feature. Given the dispersal range of up to 1.5km for male marsh fritillary, development in wet grassland with a high frequency of devil's bit scabious, particularly marshy grassland, could impact functionally linked habitat for the resident butterfly population. Blaen Cynon SAC lies over 13km from the plan area and therefore can be screened out from appropriate assessment regarding loss of functionally linked land. There are two allocations within 1.5km of Aberbargoed Grasslands SAC (Land at Heol y Cefn and Land at Cwmgelli Farm); however, a review of aerial imagery suggests that these comprise standard dry pasture rather than wet grassland with *Molinia*, which would not be highly suitable for development due to its waterlogged nature. Given this, Aberbargoed Grasslands SAC is screened out from appropriate assessment with regards to loss of functionally linked land.

The River Usk SAC has migratory fish species and otter listed as qualifying features. While these can utilise connected waterbodies outside of the SAC, mapping does not show any rivers, streams or other watercourses connecting the plan area and the SAC. Therefore the River Usk SAC is screened out from appropriate assessment with regards to loss of functionally linked land.

The following Habitats sites within 15km of Caerphilly are screened in for appropriate assessment either alone or 'in-combination' with other plans and projects with regards to loss of functionally linked land:

- **Severn Estuary SAC / SPA / Ramsar**

5.4 Water Quality

The Severn SAC is designated for several habitats (e.g. estuaries, mud- and sandflats, Atlantic salt meadows) and species (lampreys, twaite shad) that are highly sensitive to changes in water quality. The document jointly published by Natural England and Natural Resources Wales highlights physico-chemical parameters, such as oxygen,

⁷¹ <https://www.bats.org.uk/resources/guidance-for-professionals/core-sustenance-zones> [Accessed on the 13/10/2026]

⁷² Schofield H.W. 2008. The Lesser Horseshoe Bat Conservation Handbook.

nutrients and turbidity in the water column as a primary attribute for protecting the integrity of the SAC. Significant changes to any of these parameters could trigger an increase in phytoplankton or macroalgal biomass, leading to changes in the distribution (including recruitment and spawning processes) of the qualifying fish species. Changes to water quality, such as reduced dissolved oxygen concentrations, are also known to act as barriers to migration for river lamprey, brook lamprey and twaite shad. The Severn Estuary SPA / Ramsar, designated for individual waterbirds as well as its composite waterfowl assemblage, is considered to be sensitive to water quality issues. It is to be noted that any negative impacts of nutrient loading on the qualifying features in the SPA / Ramsar will occur as indirect effects on the birds' preferred foraging habitat and prey species. Overall, LSEs of the 2RLDP on the Severn Estuary Habitats sites cannot be excluded, and the site is therefore screened in for Appropriate Assessment.

The River Usk SAC is a riverine freshwater system of plain to montane levels with *Ranunculus fluitantis* and *Callitriche-Batrachion* vegetation. While this is a non-primary feature of the SAC it is essential in supporting the primary Annex II species, such as the qualifying fish and the otter. The Core Management Plan⁷³ published by Natural Resources Wales highlights the water quality in the system as a primary determinant of its ecological status, which is currently classified as unfavourable. While the main water quality impact in this catchment originates from agriculture, pollutants from sewage effluent, particularly increases in phosphorus concentrations, have the potential to increase the abundance of filamentous algae and to decrease the aquatic flowering plants. Eutrophication can lead to reduced dissolved oxygen concentrations, which in turn reduces the viability of fish populations. The entirety of Caerphilly county borough lies outside of the Usk river catchment and therefore there is no hydrological connectivity between Caerphilly county borough and the SAC. The River Usk SAC is therefore screened out Appropriate Assessment with regards to water quality.

The Llangorse Lake SAC is a natural eutrophic lake, and its plants and animals are highly sensitive to changes in water quality. Furthermore, given that the Afon Llynfi is its only water outlet, any pollutants also remain within the lake for long periods. A significant portion of the current water pollutants derive from nearby agricultural practices and septic tanks. However, the lake is located in a lowland catchment and receives its hydrological input from a very small geographic area. Caerphilly lies over 14km to the south of the Llangorse Lake SAC and is therefore considered to be beyond its hydrological catchment. Furthermore, the SAC is upstream of any watercourses that would be expected to receive wastewater or industrial run-off from development in Caerphilly. As such it is considered that there is no hydrological connectivity between the 2RLDP area and the SAC. The Llangorse Lake SAC is screened out from Appropriate Assessment.

Aberbargoed Grasslands SAC and Blaen Cynon SAC both comprise wet grassland habitats. While these habitats are not susceptible to changes in water quality due to the effects of wastewater discharge, surface water run-off from impermeable surfaces in close proximity to the sites can impact the water quality of the sites. Blaen Cynon SAC lies over 13km from the plan area and therefore can be screened out from appropriate assessment regarding changes in water quality due to surface water run-off. The 2RLDP allocates Land at Heol y Cefn for development. This site lies immediately adjacent to Aberbargoed Grasslands SAC and therefore likely significant

⁷³ https://naturalresources.wales/media/673384/river_usk-sac-core-plan.pdf [Accessed on the 13/10/2026]

effects with regards to changes in water quality due to surface run-off cannot be excluded. Aberbargoed Grasslands SAC is screened in for appropriate assessment.

The following Habitats sites within 15km of Caerphilly are screened in for appropriate assessment either alone or 'in-combination' with other plans and projects with regards to changes in water quality:

- **Severn Estuary SAC/SPA / Ramsar**
- **Aberbargoed Grasslands SAC**

5.5 Water Quantity, Level and Flow

Being an estuarine ecosystem, the Severn Estuary SAC / SPA / Ramsar is sensitive to changes in water flow rates. For example, the condition and quality of many SAC habitats depend on the intricate flux of freshwater and seawater inputs. The characteristic zonation patterns in Atlantic salt meadows depend on adequate water flow rates to maintain optimum sediment supply. While a degree of sediment deposition is needed for healthy saltmarsh communities, a high reduction in water flow rates may lead to heavy sedimentation and subsequent smothering of qualifying communities. Changes in water flow rates can also lead to salinity being outside the optimum requirements for saltmarsh. For example, reduced freshwater inflow is typically associated with increased salinity, which can result in shifts in the characteristic zonation pattern of sward assemblages. It is unlikely that alterations in water flow will be impacting SPA / Ramsar species directly. However, changes in the supply of freshwater to the estuary may have marked indirect effects on qualifying birds through impacts on supporting habitats. Excessive shifts in water flow rates affect essential abiotic parameters in foraging / roosting habitats (e.g. DO, turbidity, temperature, salinity, etc.) that in turn shape plant and invertebrate communities. Effects on the suitability of supporting habitats may affect the long-term survival of individuals and distributions of birds. CCW and Natural England advice on the Severn Estuary EMS identifies that all supporting habitats for SPA / Ramsar birds have 'high vulnerability' to changes in water flows. The 2RLDP seeks to ensure provision of 7,151 new dwellings and 40.3ha of employment floorspace, which will need to be supplied with potable water. Furthermore, the LP will also lead to a proliferation of impermeable surfaces within the catchment of the Severn Estuary SAC / SPA / Ramsar. The Severn Estuary Habitats sites are therefore screened in for Appropriate Assessment.

The integrity of the River Usk SAC is dependent on both the volume and the stability of water flow. The Conservation Objectives for the SAC state that the quantity of water, including the natural flow variability, is to be maintained or restored to maintain the site's qualifying features in the future⁷⁴. Hydrological processes, most importantly river flow level and variability, are critical in determining various habitat properties, such as current velocity, water depth and dissolved oxygen levels. Furthermore, the water depth and flow velocity influence the ability of adult anadromous fish of reaching their upstream spawning grounds. Species of shad are particularly sensitive to variations in flow levels. An ideal flow regime is to encourage high flows in March-May to stimulate upstream migration and maximise the upstream penetration of adult fish. In June-September low flows should be encouraged to ensure that juveniles are not washed into saline water prematurely. The development outlined in the 2RLDP will require an increase in the supply of water for the new households and employment floorspace. However, Welsh Water produced a Final Water Resource Management Plan in 2024.

⁷⁴ Ibid.

This identifies that there will be no adverse effects on River Usk SAC from public water supply up to 2050. This site is therefore screened in for Appropriate Assessment.

The Core Management Plan for the Llangorse Lake SAC highlights that the site is sensitive to the hydrological input into the lake, which should follow a natural seasonal cycle. The lake only has a mean depth of 2-3m (with a maximum depth of 7.5m), which will be further reduced through the gradual infilling of the lake with sediment from its banks. Any changes to the water supply of the SAC, especially a reduction in inflow, is therefore likely to threaten the integrity of the site. However, Welsh Water produced a Final Water Resource Management Plan in 2024. This identifies that there will be no adverse effects on Llangorse Lake SAC from public water supply up to 2050. The Core Management Plan highlights that no new structures that will reduce inflow should be established in the vicinity of the Llangorse Lake SAC. However, the SAC lies approx. 14.3km to the north of Caerphilly, which is considered to be beyond its hydrological catchment. There is no realistic way in which the abstraction of water for new development in Caerphilly would change the water quantity, level or flow in the SAC. The site is screened out from Appropriate Assessment.

Aberbargoed Grasslands SAC and Blaen Cynon SAC both comprise wet grassland habitats. These habitats may be susceptible to drawdown from abstraction for public water supply, which could theoretically affect them. However, Welsh Water produced a Final Water Resource Management Plan in 2024. This identifies that there will be no adverse effects on either of these SACs from public water supply up to 2050. The core management plans for these SACs do not highlight hydrological conditions as an area of concern and therefore it is considered unlikely that the 2RLDP will result in likely significant effects on Aberbargoed Grasslands SAC or Blaen Cynon as a result of changes in water quantity, level and flow and these sites are screened out from appropriate assessment.

The following Habitats sites within 15km of Caerphilly are screened in for appropriate assessment with regards to changes in water quantity, level and flow, either alone or 'in-combination' with other plans and projects:

- **Severn Estuary SAC/SPA / Ramsar**

5.6 Screening of 2RLDP Policies

A screening assessment of the 2RLDP policies is undertaken in Appendix A. It was concluded that LSEs cannot be excluded in relation to the following policies that are taken forward to the AA:

- SP1: The Strategy for the 2RLDP – the policy provides for sustainable growth across the authority, including 7,151 new dwellings and 40.3 hectares of employment land over the LP period.
- SP7: Housing Requirement – the policy makes provision for 7,151 new dwellings.
- HO1: Housing Allocations – the policy allocates land for the provision of 2,767 new dwellings.
- HO2: Housing-led Regeneration Opportunities – the policy identifies several housing-led regeneration opportunities.
- HO8: Gypsy and Traveller Accommodation – the policy allocates land for the provision of 12 Gypsy and Traveller pitches.

- RC4: Caerffili Town 2035 – the policy allocates land for regeneration opportunities, including housing provision.
- CF1: Community and Social Facilities – the policy identifies locations for community and social facilities.
- LE6: Former Markham Colliery – the policy allocates land for a mixed-use scheme.
- SP12: Managing Employment Growth - the policy makes provision for 40.3ha of new employment floorspace.
- EM1: Allocated Employment Sites – the policy allocates multiple sites for employment use.
- HE3: Heritage-led Regeneration Opportunities – the policy identifies two heritage-led regeneration opportunities.

6. Appropriate Assessment

6.1 Recreational Pressure

6.1.1 Severn Estuary SPA / Ramsar / SAC

As highlighted in the LSEs screening chapter, the Severn Estuary SPA / Ramsar / SAC is sensitive to impacts from recreational pressure. Policy SP7 (Housing Requirement) provides for the provision of 7,151 new dwellings over the plan period. This will result in an increased demand for recreational greenspaces. It should also be noted, however, that some of this provision is to be met from the existing housing land supply. The remainder consists of a net windfall (development on unallocated sites) allowance of 978 and 2,767 net new dwellings across several allocated sites. This is a total of 3,745 net new dwellings that do not already have planning consent.

Advice for the Severn Estuary European Marine Site (EMS) issued by Natural England and the Countryside Council for Wales (CCW, now Natural Resources Wales) specifies that there should be no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline. Furthermore, the EMS advice states that *'significant disturbance attributable to human activities can result in reduced food intake and / or increased energy expenditure. Five year peak mean information on populations will be used as the basis for assessing whether disturbance is damaging.'* The five-year peak mean data on the BTO Wetland Bird Survey (WeBS) website indicates that overwintering bird populations have increased from 76,496 between 2010/11 and 2014/15 to 85,643 between 2015/16 and 2019/20. Therefore, on the basis of currently available bird data, there is no evidence that recreational pressure was having a deleterious effect on the qualifying SPA / Ramsar population up to 2020. However, this is not to guarantee that a further spike in recreational visits would not lead to a population-level impact on overwintering bird species.

The Severn Estuary SPA / Ramsar / SAC lies approximately 5.7km south of the authority at its nearest, providing opportunities for access along the shoreline and, potentially, to intertidal sand- and mudflats. Furthermore, the Wales Coast Path, a long-distance hiking trail, runs alongside the edge of the Habitat site boundary for large stretches within the neighbouring Cardiff authority. Well-established regional trails may have additional draws on people due to their scenic nature, varied habitats and good

signposting. Regarding the Severn Estuary SPA / Ramsar / SAC, delivery of additional housing in the south of the authority will be more impactful than development elsewhere in the authority. Travel distance is the main parameter in determining the likelihood of future residents to visit a site which, in combination with the attractiveness of the estuary for recreation, would make it unlikely for future residents to visit elsewhere.

6.1.1.1 Existing Evidence Base

The Severn Estuary SPA / Ramsar is a destination with a unique funnel shape, meaning that it runs diagonally along several authorities, including Forest of Dean, Stroud, Monmouthshire and Cardiff. Due to its scenery and geography, the site is likely to have a unique recreational draw on residents in nearby authorities and, given that the likelihood of visiting a site decreases with distance from home, residents are likely to visit stretches of the estuary with suitable access points that are closest to home. No visitor data on access points within Cardiff is available. However, Footprint Ecology undertook a visitor survey in Lydney (Forest of Dean) in 2017 to inform a recreation strategy for that part of the estuary⁷⁵. A visitor survey was also undertaken by EPR in 2016 for the part of the SPA / Ramsar within Stroud District⁷⁶. Furthermore, the Association of Severn Estuary Relevant Authorities (ASERA) published a comprehensive overview of recreational boating in the estuary⁷⁷. Surveys have also been undertaken on the Welsh side of the estuary for Monmouthshire and Torfaen Councils. These surveys were conducted to establish a baseline of existing recreational pressure in the relevant parts of the SPA / Ramsar, and to assess the potential impacts of residential growth in the respective authorities.

6.1.1.2 Lydney visitor survey

The Lydney visitor survey covered the four main access points to the part of the Severn Estuary SPA / Ramsar / SAC closest to Lydney, the proposed location of new development. Across all survey points the total number of people entering the wider area was 153, equating to an hourly rate of 9.6 people entering the area around the estuary. Of 83 interviewees, 36 visitors (43%) undertook dog walking, and 14 visitors (17%) were walking. Boating was undertaken by 5 interviewees (6%). While visit duration was similarly short (mostly between 30 minutes and 1 hour) for all activities (except boating), dog walking was the recreational activity that involved the highest proportion of frequent visits, with a total of 41% of dog walkers visiting daily or most days (180+ visits per year). Most importantly, the visit patterns of dog walkers, walkers and joggers, highlight that visitors tend to live very close to the SAC. For example, dog walkers travel a median distance of 2.3km to their access points (typically on foot), highlighting the potential significance of new nearby residential development. Overall, the Lydney survey highlights that the Severn Estuary SPA / Ramsar / SAC is subject to regular disturbance by particular user groups, especially dog walkers, which are generally considered to have the biggest disturbance impact on SPA / Ramsar features.

⁷⁵ Liley D., Panter C. & Hoskin R. 2017. Lydney Severn Estuary Visitor Survey and Recreation Strategy. Unpublished report by Footprint Ecology for the Forest of Dean District Council. 55pp. Available at: <https://www.footprint-ecology.co.uk/reports/Liley%20et%20al%202017%20Lydney%20Severn%20Estuary%20Visitor%20Survey%20and%20Recreation%20Strategy.pdf>

⁷⁶ Southgate J. & Colebourn K. 2016. Severn Estuary (Stroud District) Visitor Survey Report. Report for Stroud District Council. Ecological Planning & Research, Winchester. 68pp. Available at: https://www.stroud.gov.uk/media/2902/severnestuaryvs_report_15581c_final_060616.pdf

⁷⁷ Association of Severn Estuary Relevant Authorities. (November 2016). Recreational boating in the Severn Estuary. 85pp. Available at: <https://asera.org.uk/wp-content/uploads/sites/3/2016/11/ASERA-Water-Based-Recreation-Report-Nov-2016-Low-Res2.pdf>

6.1.1.3 Stroud visitor survey

EPR's Stroud visitor survey focussed on the upper section of the Severn Estuary SPA / Ramsar / SAC, closer to where the River Severn transitions into the Severn Estuary. It surveyed nine access points to the estuary, which were either parking locations or Public Right of Ways (PRoWs) providing direct access on to the estuary. Overall, 461 people accessed the area over two days at all access points, resulting in an access rate of 30.7 people per hour. 185 dogs were recorded across all access points over the two-day survey period, resulting in an average of 12.3 dogs per hour. 51.6% of the groups interviewed had at least one dog with them, which is slightly less than observed at other marine sites such as the Solent (53%) and North Kent (65%). The average (mean) distance travelled by visitors to reach their access point was 14.5km. Visitors arriving on foot, i.e. the local residents, had travelled an average of 5.4km. Importantly, the study also provided a visitor catchment for the Severn Estuary SPA / Ramsar / SAC, which uses the standard 75th percentile of distances travelled by visitors to define a core recreational catchment. Interestingly, and in contrast to Lydney, where visitors travel very short distances to access points, the estuary in Stroud has an indicative recreational catchment of 17.7km (all visitors) and 7.7km (Stroud residents only). The main reason for this disproportionately large catchment is most likely due to the low housing density in this part of the authority, which is significantly lower than in other areas of the UK (e.g. the Solent).

6.1.1.4 Monmouthshire and Torfaen visitor survey

Based on a recommendation by AECOM, Monmouthshire Council and Torfaen Council (the latter authority also progressing their RLDP inclusive of housing growth) jointly commissioned a visitor survey at four access points (covering both parking and foot access locations) to provide the first in-combination visitor data along the Welsh part of the estuary. This was published as part of the HRA of the Deposit Monmouthshire Local Development Plan.

The visitor count at surveyed locations ranged between 127 (Caldicot Coast Path, foot access only) and 613 (RSPB Newport Wetlands, large car park available at the RSPB site) people over two survey days, indicating that the estuary in Wales is busier than some of its parts surveyed in England (e.g. in Lydney the busiest location only had 98 visitors entering over 16 hours). Clearly, the data highlight that the estuary in south Wales is already a key recreation destination irrespective of future housing growth. As is documented for many other Habitat sites, dog walking was by far the most common activity (48.9% of interviewees), followed by walking (29.8%) and family outings (5.9%). The proportion of dog walkers was considerably higher at Caldicot Coast Path and Black Rock Car Park, most likely because both survey points lie in easy walking distance to nearby residential development.

Another characteristic that was evident from the data relates to the loyalty of visitors to the site, with 51.6% of interviewees visiting either daily, most days (180+ visits per annum) or 1 to 3 times per week (40 to 180 visits per annum). No strong seasonal pattern in the recreational trends were discernible, indicating that the recreation disturbance potential does not reduce over the overwintering period of SPA / Ramsar birds. Home postcodes from interviewees were also collected to establish a core recreational catchment for the Welsh part of the Severn Estuary SPA / Ramsar / SAC. Using postcode data of interviewees visiting from home, a core catchment of 6.5km was established for the site. This is broadly similar to the core catchment established for Stroud District (7.7km) and by the West of England authorities (7.4km).

Stroud Council (in England) have recently increased the recreational catchment in their area for Severn Estuary from 7km to 12.6km, based on more recent visitor survey

from 2022⁷⁸. It is to be expected that different parts of the Severn Estuary have different recreational catchments, and the survey data for Monmouthshire clearly indicates a smaller core catchment. However, there is also value in authorities around the Severn Estuary adopting a consistent core catchment.

6.1.1.5 Mitigation through an Interim Impact Avoidance Strategy

It is likely that housing development to be delivered within Caerphilly and nearby authorities will increase the visitor pressure in the Severn Estuary SPA / Ramsar / SAC, with potential adverse effects on overwintering birds and habitats. Given the high sensitivity of the SPA / Ramsar to impacts resulting from recreational pressure, adverse effects on its site integrity due to additional residential development cannot be excluded. However, given that much of the county borough lies outside of the precautionary recreational catchment of 12.6km and that the recreational catchment is smaller in several areas of the Estuary, it is considered that Caerphilly will likely make a smaller contribution to recreational pressure than the nearby authorities of Cardiff and Newport.

For Cardiff and Newport it has been identified that mitigation measures will be required to avoid adverse effects on the SPA / Ramsar. These could be delivered in the form of Strategic Access Management and Monitoring (SAMM) in the estuary itself, and / or through access enhancements and improvements to appropriately sited, existing or newly developed greenspaces.

In England, authorities within the recreational catchment of sites that are sensitive to recreational pressure have developed SAMM strategies to avoid adverse effects on the Habitat sites; the most prominent examples being the Thames Basin Heaths SPA and the Dorset Heaths SPA. For example, to protect the Dorset Heaths, the authorities proposing residential development within the SPA catchment zones have set out the Dorset Heathlands Planning Framework Supplementary Planning Document (SPD)⁷⁹. For example, in the case of the Dorset Heaths, the SPD proposes a series of SAMM projects, including undertaking of educational activities and employing wardens to manage visitor pressure. It is considered that similar measures (and funding mechanisms) could be deployed in the Severn Estuary SPA / Ramsar, to help manage recreational pressure. Such measures would have to be identified and developed in collaboration with all key stakeholders (i.e. authorities, private landowners) and in consultation with Natural Resources Wales. Given that Caerphilly does not control development and access to the coast, and that Caerphilly is likely to make a much smaller contribution to recreational pressure at the coast from the current or future populations of either of those authorities, it is considered most appropriate for Caerphilly Council to liaise with those other local authorities to contribute to their strategic mitigation solutions if required.

Opening new areas of greenspace to the public or enhancing existing greenspaces is the second pillar of mitigating recreational pressure. Importantly, these alternative greenspaces should be less sensitive to disturbance, while aiming to recreate as best as possible a feeling of expanse and wilderness. However, due to the lack of coastline within Caerphilly, the abundance of such space in the authority area, and the distance

⁷⁸ [Agenda Item 9 - Appendix A - Severn Estuary Mitigation Strategy.pdf \(moderngov.co.uk\)](https://www.moderngov.co.uk/Agenda/Item/9/Appendix%20A%20-%20Severn%20Estuary%20Mitigation%20Strategy.pdf)

<https://www.stroud.gov.uk/environment/planning-and-building-control/conservation-biodiversity-listed-buildings-trees-and-hedgerows/habitats-regulations-assessment-hra/>

<https://www.stroud.gov.uk/environment/planning-and-building-control/conservation-biodiversity-listed-buildings-trees-and-hedgerows/habitats-regulations-assessment-hra/severn-estuary-special-area-of-conservation-sac/>

⁷⁹ The consultation draft of the Dorset Heathlands Planning Framework 2020-2025 can be found at:

<https://www.bournemouth.gov.uk/planningbuilding/PlanningPolicy/PlanningPolicyFiles/dorset-heathlands-planning-framework/dorset-heathlands-spd-2019-consultation.pdf>

of the authority area from the coast, additional greenspace is unlikely to be able to replicate the unique draws of the estuary.

It is recommended Caerphilly Council commit to liaising with Cardiff Council and Newport Council to input into their recreation management strategies for Severn Estuary SAC/SPA/Ramsar sites as appropriate to ensure that there is no adverse effect on the sites.

6.1.2 Cardiff Beech Woods SAC

The Cardiff Beech Woods SAC is designated for *Asperulo-Fagetum* beech forests and *Tilio-Acerion* forests of slopes, screes and ravines. Both these habitats are sensitive to recreational disturbance, particularly as a result of trampling. Policy SP7 (Housing Requirement) provides for the provision of 7,151 new dwellings over the plan period. This will result in an increased demand for recreational greenspaces. It should also be noted, however, that some of this provision is to be met from the existing housing land supply. The remainder consists of a net windfall (development on unallocated sites) allowance of 978 and 2,767 net new dwellings across several allocated sites. This is a total of 3,745 net new dwellings that do not already have planning consent.

The SAC lies in the highly populated northern part of Cardiff, adjoining the urban areas of Pentyrch, Taff's Well and Tongwynlais, in close proximity to Caerphilly. It is a popular site for people from Cardiff where the Cardiff Deposit Local Development Plan identifies a need for 26,400 dwellings over the LP period (8,359 dwellings of which will be net new), which will result in an increase of Cardiff's population of approx. 18,336 additional residents, and the Rhondda area, where the Rhondda Cynon Taf Revised Local Development Plan identifies a minimum of 509 new dwellings a year, as well as Caerphilly. As such, in-combination effects are likely.

Natural Resources Wales' Core Management Plan for the Cardiff Beech Woods SAC highlights that recreational use is a factor potentially affecting the *Asperulo-Fagetum* and *Tilio-Acerion* forests. The CMP states that '*the woodlands, especially Castell Coch and Fforestganol a Chwm Nofydd, experience heavy recreational pressure and certain areas are managed for this purpose.*' Development pressure from infrastructure in the vicinity is also referred to as an issue for the site, which includes housing development and associated negative impacts from recreational pressure and urbanisation. While no operational limits in terms of recreation have been set, NRW clearly highlight that a fuller understanding of a recreational baseline and habitat impacts is required. Access issues are to be kept under review. Overall, regarding the Cardiff Beech Woods SAC a balance between sustainable recreational use and protecting the nature conservation importance of the site is being sought by NRW.

Popular activities in the Cardiff Beech Woods SAC include walking, climbing and mountain biking, which are undertaken in all SSSI component parts. The *Asperulo-Fagetum* beech forests in the Castell Coch Woodlands are subject to particularly high levels of footfall, owing to the Taff train that permeates the woodland and the presence of the historic building, which attracts many visitors. The site has seen a particular increase in climbing, which has been identified as a potential threat to the trees at the top of the crag. The CMP indicates that access management is undertaken by individual site owners, with potential conflicts of interest being addressed through the Local Authority Access Forum. Given the increasing popularity of the site, there is increasing pressure to open up additional areas for access with potential negative impacts on the woodland ground flora and qualifying trees.

In 2024, AECOM, in conjunction with a specialist survey company, undertook a visitor survey at 11 survey points (covering both parking and foot access locations) around Cardiff Beechwoods to provide visitor data for Cardiff Beechwoods SAC. This used a methodology widely used for other Habitats sites. Survey locations were chosen in discussion with Cardiff Council officers who are familiar with the Beech Woods. Eight locations were within the SAC, and/or at suitable access points for the SAC, while a further three locations were at other parts of the Beech Woods. Interviews ran from 8am to 6pm and contained a mixture of weekdays and weekends. Visitor counts were also completed. A total of four 5-hour survey shifts was completed at each survey location, with each location being surveyed on a weekday and at a weekend. A total of 44 five-hour survey shifts was therefore completed in August and September 2024. As is documented for many other Habitat sites, dog walking was by far the most common activity (61.5% of interviewees), followed by walking (23%). Another characteristic that was evident from the data relates to the loyalty and frequency of visitors to the site, with 58.3% of interviewees visiting either daily, most days (180+ visits per annum) or 1 to 3 times per week (40 to 180 visits per annum). There was no strong seasonal pattern in the recreational trends were discernible. Home postcodes from interviewees were also collected to establish a core recreational catchment for the Cardiff Beechwoods SAC. Using postcode data of interviewees visiting from home, a core catchment of 6km (based on the zone within which 75% of visitors lived) was established for the site. Approximately 7% of the respondents to the visitor survey were from Caerphilly (almost all from the town itself), with the majority of visitors originating from Cardiff.

Given the known vulnerabilities of Cardiff Beechwoods SAC, it is considered that the net new dwellings that do not already have planning consent will potentially increase recreational pressure in the SAC further. While tariffs on new development cannot be used to address existing recreational pressure issues, it is essential in order to conclude no adverse effects on SAC integrity from the 2RLDP that a mechanism exists to address recreational pressure from further population growth.

As with Severn Estuary, a common approach to addressing recreational pressure is a mixture of access management on site (SAMM) and provision of alternative recreational greenspace off-site. Given the majority of visitors to the site originate from Cardiff, it is considered that this recreation mitigation should be led by and coordinated with Cardiff Council who have begun developing a mitigation strategy. However, given the unique setting and appeal of Cardiff Beech Woods, and its close proximity to such a large source of visitors, it may be concluded that off-site new recreational greenspace has limited potential to draw people away from the SAC. Given alternative natural greenspace is considered likely to be ineffective, the focus is on recreation management within the SAC (SAMM). This is consistent with the approach taken at other inland Habitats sites which are considered to have a particularly strong recreational draw, such as Cannock Chase SAC in the English midlands or the New Forest in southern England. This can only be delivered by Cardiff Council given the location of the SAC.

It is recommended Caerphilly Council commit to liaising with Cardiff Council to input into their recreation management strategy for Cardiff Beechwoods SAC if necessary, and as appropriate, to ensure that there is no adverse effect on the SAC.

6.1.3 Usk Bat Sites SAC

Primarily, the Usk Bat Sites SAC is designated for its lesser horseshoe bat population of European significance. Both the maternity roost and the numerous hibernation sites (e.g. in Agen Allwedd Cave and Clydach Gorge Cave) are highly sensitive to recreational disturbance due to potential changes to a variety of habitat conditions, such as ventilation, temperature, light level and noise level.

Given the high sensitivity of this bat species to disturbance, the most important caves have been gated for conservation reasons, including Agen Allwedd, Craig a Ffynnon and Daren Cilau. Access to these caves requires prior application for a permit to the Mynydd Llangatwg cave Management Advisory Committee⁸⁰. However, numerous other roost and hibernation sites are not gated and as such potentially sensitive to higher visitor footfall. However, the Brecon Beacons National Park (BBNP) website identifies caving as a potentially dangerous activity that requires prior consent of a local caving club and the assistance of a qualified expedition leader⁸¹. Furthermore, the Caves of South Wales website outlines the Cave Conservation Code, which aims at minimising impacts on cave biota as well as geological formations⁸².

In the BBNP visitor survey, Brecon Canal was identified by 154 interviewees (9%) as one of the destinations during their visit. The Brecon Canal was the closest destination to the Usk Bat Sites SAC (1.7km) given by interviewees, which may also involve a visit to the SAC. This would imply that the area of the SAC is not heavily frequented. It should also be highlighted that caving was not among the most popular recreational activities mentioned by interviewees and as such is likely to be carried out by very few people. Given its specialised nature, it cannot be assumed that this activity is directly linked to a general increase in the local population, in the same way as dog-walking.

Given the relatively small number of residents that visit the approximate area around the SAC, the existing access controls (e.g. locked gates) of the most important roost and hibernation caves and the wider regulation of caving activities, it is considered that the implementation of the 2RLDP would not result in adverse effects on the integrity of the caves in the Usk Bat Sites SAC, both alone and in-combination.

The residential growth outlined in the Plan might also result in additional recreational pressure on various sensitive habitat elements of the Usk Bat Sites SAC. Notably, European dry heath elements are likely to be negatively impacted by off-trail trampling damage. Undoubtedly, any potential negative effects of recreation related to the physical modification of habitats, are likely to be linked to the amount of visitor footfall and the maintenance of the available path network. The Usk Bat Sites SAC lies over 6km from Caerphilly and therefore does not lie within easy walking distance of the plan area. Car-based visitors will of course visit sites further afield but scrutiny of the small number of public roads that provide access into the SAC's component sites indicates that they are generally narrow, and parking is very limited, which will inherently control the number of casual visitors. The site will therefore not be a destination for mass recreational visits arising from Caerphilly.

The potential adverse effects of recreational climbing in the SAC are appropriately addressed in the Core Management Plan of the site. This highlights that climbing in the management units 1 and 2 of the Mynydd Llangatwg SSSI, a component of the Usk Bat Sites SAC, requires the issue of a permit. Therefore, the number of climbers affecting the sensitive rocky slopes can be relatively easily controlled. Like caving,

⁸⁰ <http://mlcmac.org/llangatwg.htm>

⁸¹ <http://www.breconbeacons.org/caves>

⁸² <http://www.ogof.org.uk/>

rock climbing is a niche activity undertaken by relatively few people (compared to mainstream activities such as walking and dog walking). This is reflected in the BBNP visitor questionnaire, where rock climbing was not among the reported recreational activities. The overall increase in the number of climbers as a result of the 2RLDP is therefore expected to be limited and is adequately addressed through the permit system that already operates in the SAC.

It is therefore considered that the Caerphilly 2RLDP will not result in adverse effects on the integrity of Usk Bat Sites SAC as a result of recreational pressure, either alone or in combination with other plans or projects.

6.1.4 River Usk SAC

The River Usk SAC is a freshwater system that is designated for its plain to montane water course, several anadromous fish species and otter. The source of the River Usk SAC lies in upland Wales, and it then flows in a south-easterly direction before entering the Severn Estuary.

As highlighted in the LSEs screening section, the Core Management Plan for the SAC highlights that recreational pressure is a potential threat to the interest features of the site. For example, both twaite and allis shad are under pressure from recreational anglers, which sometimes take large numbers of these species. Rod fishing is also a potential concern for some of the other qualifying fish species, such as Atlantic salmon. There are several other mechanisms through which SAC features might be impacted, including disturbance of otters by dog walkers, the cutting of water crowfoot beds for boat navigation and effects on the riverine system by canoeists (e.g. disturbance of gravel beds that are used for spawning by the qualifying fish). Given that the 2RLDP allocates additional residential housing, there is a clear impact pathway potentially linking to this riverine SAC.

Overall, it is considered that adverse disturbance impacts on otter from dog walkers and other recreational activities are very unlikely to arise. Otter are nocturnal animals and therefore predominantly active when recreational activities typically are not taking place. Furthermore, otter show high adaptive resilience towards disturbance, illustrated by the presence of breeding sites in highly disturbed conurbations (e.g. Glasgow)⁸³. They are likely to be most sensitive when being disturbed in their holts or resting on couches. A typical response of radio-tracked otters to anglers and dog walkers is to move to a position where they can see the disturbance stimulus, followed by a 50m dive and resting on a riverbank for 30 minutes⁸⁴. Overall, it is concluded that the overall health of otter populations is not adversely impacted by human disturbance. In the context of disturbance to otter, it should also be noted that for adverse impacts to arise, pathways should be 'real' rather than 'hypothetical'. There is no hard evidence that recreation in the River Usk SAC is negatively impacting its qualifying otter population.

For example, canoeing access in specific stretches of the River Usk SAC is subject to voluntary access arrangements by the Wye and Usk Foundation⁸⁵. The advice set out by this organisation stipulates that canoeing and kayaking should only be undertaken freely in winter, when the rivers are in spate flow. The Foundation gives clear guidance on where paddling is permitted and has live webcams that show the rivers' water

⁸³ Chanin P. (2003). Ecology of the European otter. *Conserving Natura 2000 Rivers Ecology Series No.10*. English Nature, Peterborough. 68pp.

⁸⁴ Durbin L.S. (1993). *Food and habitat utilisation of otters (Lutra lutra) in a riparian habitat – the River Don in north-east Scotland*. Unpublished PhD thesis, University of Aberdeen.

⁸⁵ <https://www.wyeuskfoundation.org/>

levels. Restricting boating activities to the winter ensures that damage to the qualifying species and habitat is minimised. For example, it is less likely that canoeists will disturb gravel bars in high water flows and paddling in winter also protects the spawning period, when the anadromous fish are most sensitive. The Brecon Beacons National Park website, which promotes canoeing in the River Usk SAC, advises all users to follow both the Countryside Code⁸⁶ and the Waterways Code⁸⁷. These Codes of Conduct are designed to raise public awareness to reduce disturbance and pollution of the countryside.

Regarding recreational fishing, catch and release is now promoted by Natural Resources Wales as an angling technique to aid the conservation of fish stocks. Furthermore, any Atlantic salmon and sea trout that is caught must be returned to the river⁸⁸. There are also rod fishing byelaws in place for Wales, detailing the open seasons for a range of fish species, which are designed to protect the integrity of qualifying fish populations.

While canoeing and fishing are popular in the River Usk SAC, these activities should be set into context of the number of people undertaking other recreational activities. While canoeing and fishing can result in damaging effects, they are undertaken by a small percentage of the population. For example, only approx. 1.5% of the UK population engage in recreational fishing⁸⁹, which is exceedingly small compared to more popular recreational activities such as dog walking. Therefore, of the new residents arising from the 2RLDP, only a small fraction would add to the number of canoeists and fishers along the river corridor. Consequently, a direct link between the delivery of new housing in an area and a significant increase in the number of people that will engage in fishing or canoeing cannot be drawn. Furthermore, the qualifying species are considered to be at relatively low risk of negative impacts from a general increase in the surrounding population. While an increase in river recreation infrastructure (e.g. further boat moorings) may pose a threat to the *Ranunculus* vegetation, this is not an automatic consequence of the Plan or in-combination with increased population that would result from the development of new dwellings in adjacent development plan areas.

Overall, given that only a very small portion of new residents are expected to undertake activities that would threaten the integrity of the riverine SAC, and the fact there are current regulatory measures of these activities in place, it is concluded that there will be no adverse effects of the 2RLDP on the site integrity of the River Usk SAC with regards to recreational pressure.

6.2 Functionally Linked Land

6.2.1 Severn Estuary SPA / Ramsar

The Severn Estuary SPA / Ramsar designation covers most of the habitat that is used by its qualifying bird species, including the wet coastal grazing marsh, improved grassland and open standing water. However, some of its more mobile waterfowl and wader species, most notably the Bewick's swan and the white-fronted goose, might be expected to move the longest distance beyond the site boundary. The Natural

⁸⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/701188/countryside-code.pdf

⁸⁷ http://www.britishwaterways.co.uk/media/documents/publications/Waterways_Code_Leaflet.pdf

⁸⁸ <https://naturalresources.wales/days-out/things-to-do/fishing/?lang=en>

⁸⁹ approximately 1 million fishing licences are sold annually in the UK, equating to approximately 1.5% of the UK population; even assuming that an equal number of people regularly fish without licences that still equates to only 3% of the population

England Advice Note⁹⁰ identifies that ‘*some species will also use areas of land and coastal waters outside the boundaries of both the European Marine Site, SPA and Ramsar site. Relevant authorities need to have regard to such adjacent interests, as they might be affected by activities taking place within, or adjacent to the European Marine Site.*’ Effectively, this statement highlights that regarding the Severn Estuary SPA / Ramsar, due consideration must be given to the loss of functionally linked land.

Bewick’s swans feed on several species of soft meadow grasses, including *Agrostis stolonifera* and *Alopecurus geniculatus* that are component species of wet meadows. Some of such habitat features might be located outside the Habitat site. The distance travelled to foraging grounds beyond the boundary of the SPA / Ramsar is likely to depend on the time of year, resource conditions within the SPA / Ramsar and interspecific competition. Due to a combination of these factors, Bewick’s swans partially forage in fields at relatively great distances from their roosting locations. A study in the Netherlands determined that Bewick’s swans foraged in arable fields 7.1km away from their roosts⁹¹.

The Severn Estuary SPA/Ramsar is designated for its large population of waterfowl and waders generally, and for its specific populations of non-breeding Bewick’s swan, white-fronted goose, dunlin, redshank, shelduck, gadwall, ringed plover, curlew and pintail. To aid consideration of functionally-linked land issues Natural England has produced unpublished guidance (there is no Natural Resources Wales equivalent). This guidance groups birds by their maximum foraging distance. According to this guidance most waterfowl and waders remain within 2km of their core roost areas (i.e. the SPA/Ramsar site) when foraging. Of those species for which Severn Estuary SPA/Ramsar is designated the exceptions are Bewick’s swan and white-fronted goose which forage up to 10km from their core roost sites. The same Natural England guidance considers that residential development could have an adverse effect on these two species if it resulted in loss of functionally-linked land up to 5km from the core roost areas (the SPA/Ramsar).

Given that Severn Estuary SPA/Ramsar lies approximately 5.7km away from the plan area, and in line with this Natural England guidance, it can be concluded that the 2RLDP will not result in adverse effects of the Severn Estuary SPA and Ramsar sites with regards to loss of functionally linked land either alone or in-combination with other Plans or Projects.

6.3 Water Quality

6.3.1 Severn Estuary SPA / Ramsar / SAC

WWTWs serving new housing and employment development will discharge additional treated effluent, either directly into the Severn Estuary or into waterbodies that are in hydrological continuity with the Habitat site. This effluent will result in additional nutrient loadings in the estuarine waters. In coastal environments, nitrogen is considered to be the primary growth-limiting nutrient, although phosphorus may be co-limiting particularly in transitional waters like estuaries. Therefore, it must be ensured that the allocated growth will not result in a deterioration of the water quality in the Severn Estuary SPA / Ramsar / SAC.

⁹⁰ Published by Natural Resources Wales and Natural England. Available at:

<https://naturalresources.wales/media/673887/severn-estuary-sac-spa-and-ramsar-reg-33-advice-from-ne-and-ccw-june-09.pdf>

⁹¹ Nolet B.A., Bevan R.M., Klaassen M., Langevoord O. & van der Heijden Y.G.J.T. 2002. Habitat switching by Bewick’s swans: Maximisation of average long-term energy gain? *Journal of Animal Ecology* 71: 979-993.

Both the SPA / Ramsar and SAC designations are considered vulnerable to negative water quality impacts. For example, the 'estuaries' feature in the SAC is sensitive to excessive nutrient inputs, which can lead to changes in water temperature, dissolved oxygen (DO) concentrations and turbidity through a process known as eutrophication. Impacts caused by treated sewage effluent can reduce the overall quality of the estuarine habitat with knock-on effects on qualifying SAC and SPA / Ramsar species. Water quality changes can also affect the condition of the intertidal zone, such as the 'mudflats and sandflats' feature. The degree of oxidation / reduction, a measure of oxygen availability within the sediment, has a critical influence on infaunal communities. Negative water quality changes may impact SPA / Ramsar waterfowl and waders indirectly through cascading effects in the food web. Most qualifying species feed on invertebrates within and on the sediment (e.g. *Gammarus*, *Hydrobia*, *Arenicola*, *Corophium*, etc.), the abundance and distribution of which may be impacted by changing water quality.

Nitrogen pollution is responsible for causing a wide range of negative impacts to estuarine and coastal waters. While the primary anthropogenic source of nitrogen is land run-off (primarily from agriculture), a significant portion is contributed in treated effluent from Wastewater Treatment Works (WwTWs) and storm drain overflows⁹². It is important to note that the Severn Estuary lies within a catchment that is naturally rich in nitrogen from high-nitrate soils, often in Nitrate Vulnerable Zones (NVZs). Eutrophication in the coastal environment arises when water is enriched with nitrogen, the primary limiting nutrient in seawater, although it should be noted that other parameters such as phosphorus concentrations, silicate availability, light levels and temperature are also very influential. A study of estuaries in mainland Britain⁹³ showed a significant correlation between the log total annual loads of Total Oxidised Nitrogen (nitrate plus nitrite) and spring maximum chlorophyll a concentrations, demonstrating a direct link between nitrogen source and ecosystem response. The main consequence of nitrogen pollution in transitional waters is the excessive growth of macroalgal mats in intertidal zones, which can affect invertebrates, smother saltmarsh vegetation and interfere with the ability of waders and waterfowl to feed adequately. Other key biological consequences of nutrient enrichment include:

Phytoplankton and algal blooms;

Reduced water quality (e.g. high levels of ammonia and high turbidity);

Loss of macrobenthos communities;

Changes to food web structure; and

Creation of hypoxic conditions.

Dŵr Cymru Welsh Water (DCWW) is the body responsible for the treatment of domestic and industrial sewage in Caerphilly. The company has published a Drainage and Wastewater Management Plan (DWMP) 2024⁹⁴, which sets out the steps that will be taken to treat surface runoff and sewage generated as a result of the emerging RLDP, with a view to protect the integrity of the water environment. The DWMP appraises the challenge of protecting water quality in the context of key future trends, including changing climate patterns, emerging and persistent contaminants (e.g. microplastics, pharmaceutical compounds), pressures of rising phosphorus / nitrogen

⁹² Mustow S. (2020). Nitrogen pollution in estuarine and coastal waters. *CIEEM InPractice* 110: 11-14.

⁹³ Nedwell DB, Dong LF, Sage A & Underwood GJC. (2002). Variations of the nutrient loads to the mainland U.K. estuaries: Correlation with catchment areas, urbanization and coastal eutrophication. *Estuarine, Coastal and Shelf Science* 54: 951-970.

⁹⁴ Welsh Water. (November 2023). Drainage and Wastewater Management Plan 2024. Available at: <https://www.dwrwymru.com/en/our-services/wastewater/drainage-and-wastewater-management-plan>

loadings, combined sewer overflows (CSOs) and regulatory changes. For example, CSOs were designed over 100 years ago with the objective to relieve pressure in the drainage system and protect people from flooding. CSOs discharge excess rainwater mixed with raw sewage directly into the aquatic environment, with potential long-term negative impacts on water quality and associated biodiversity.

Caerphilly lies within DCWW's South East Valleys operational wastewater planning area⁹⁵. The South East Valleys comprise 25 wastewater catchments and a population of approx. 1,177,064. Overall, there are 25 WwTWs, 305 Sewerage Pumping Stations (SPS) and 552 CSOs across the river basin catchment level. Overall, the population in the region is predicted to decrease to 801,900 by 2050 (a reduction of 32%), although in the short-term major developments will result in additional pressures on the wastewater network.

DCWW employed several predictive modelling tools to inform their DWMP. The Risk Based Catchment Screening (RBCS) indicates that the main challenges for the 25 WwTWs in the region are to do with accommodating flow volumes rather than water quality compliance. For example, 24 WwTWs are susceptible to sewer flooding in extreme wet weather events and 13 WwTWs experience catchment failures under Dry Weather Flows (DWFs). A Baseline Risk and Vulnerability Assessment (BRAVA) for the year 2025 demonstrates that the highest risks to river basin catchments emanate from flooding in extreme storms, water pollution in storm events, sewer collapses and WwTWs storm flow compliance.

Caerphilly lies within the Rhymney R – conf Nant Cylla to Chapel Wood planning catchment, which is served by five WwTWs. This planning catchment has a population of 930,875, accounting for the bulk of urban development in the South East Valleys river basin catchment. The 2025 and 2050 BRAVA for this planning catchment highlights that the area is at risk of flooding and pollution caused by hydraulic overload. The DWMP also provides a classification of the quality of waterbodies in the planning area according to its physical, biological and chemical properties. Its water quality status for 2050 is predicted as 1 (i.e. best possible water quality and lowest priority for interventions), with targeted investment strategies for mitigation and focus to be implemented in Asset Management Period (AMP) 11.

A supply-demand assessment of the capacity of the five WwTWs in the planning area has been undertaken for future DWFs and wet weather flows up to 2050. Importantly, these assessments consider the forecast future growth. The results for the DWF assessment indicate that there will be sufficient headroom at the WwTWs to accommodate the allocated growth up to 2050, including a 20% spare treatment capacity. Under wet conditions there is capacity to treat 70% of wet weather flows in the catchment to 2050, however local incapacity issues are predicted at individual works for treatment targets of 80% and 90% of wet weather flows respectively. DCWW seeks to address the shortages in treatment capacity under wet weather flows by improving headroom of the sewage network, primarily by reducing per capita water consumption (to 100l per person per day by 2050) and volume of trade effluent (by 25% in the long-term). Currently, 19 schemes are put forward in the first cycle preferred plan for Cardiff Bay WwTW to reduce the number of CSO overflows and other flooding events associated with the works.

⁹⁵ Welsh Water. (November 2023). Drainage and Wastewater Management Plan 2024 – River Basin Catchment Summary for South East Valleys. 58pp. Available at: <https://www.dwrcymru.com/en/our-services/wastewater/drainage-and-wastewater-management-plan>

Natural Resources Wales set Environmental Quality Standards (EQS) for all important non-toxic and toxic aquatic pollutants, which are set in the context of broad water quality targets specified in the Water Framework Directive (WFD). The water quality requirements of qualifying habitats and species are fundamental in informing these targets and, therefore, remaining within the consented discharge flows / concentrations implies that no adverse effects on Habitat sites will occur in relation to water quality changes. Since the DWMP is undertaken at a strategic level it inherently takes into account the impact of population growth across its service area and is therefore inherently 'in combination'.

6.3.2 Aberbargoed Grasslands SAC

Aberbargoed Grasslands SAC is potentially susceptible to changes in water quality as a result of surface water runoff from neighbouring development. The 2RLDP allocates Land at Heol y Cefn for development. This site lies immediately adjacent to Aberbargoed Grasslands SAC. Natural Resources Wales set Environmental Quality Standards (EQS) for all important non-toxic and toxic aquatic pollutants, which are set in the context of broad water quality targets specified in the Water Framework Directive (WFD). The water quality requirements of qualifying habitats and species are fundamental in informing these targets and, therefore, remaining within the consented discharge flows / concentrations implies that no adverse effects on Habitat sites will occur in relation to water quality changes.

Sustainable Drainage Systems (SuDS) are considered the main approach to reduce the volume of surface run-off that reaches sensitive ecological receptors by limiting the occurrence and magnitude of flooding. SuDS are interventions that manage surface water at source by limiting run-off to pre-development greenfield rates. Depending on local drainage characteristics / soil type and the type of development proposed, a variety of different techniques may be employed as SuDS, including soakaways, infiltration trenches, permeable pavements, grassed swales, green roofs, ponds and wetlands. The ultimate aim of SuDS is to protect the natural water cycle by reducing the amount of surface water run-off.

Given that SuDS can prevent surface run-off from reaching Habitats sites, policy framework is required to ensure that Land at Heol y Cefn will have appropriate SuDS provision incorporated into the design. Policy PM2: Design and Amenity requires development to ensure the *"incorporation of resource efficiency and passive solar gain... and where required, the use of sustainable drainage systems"*. This policy ensures that there will be suitable sustainable drainage systems in place for the development at Land at Heol y Cefn. Therefore, it is considered that there is adequate policy framework in place to ensure there will be no adverse impacts on Aberbargoed Grasslands SAC as a result of changes in water quality as a result of the 2RLDP.

6.4 Water Quantity, Level and Flow

6.4.1 Severn Estuary SAC / SPA / Ramsar

The quantity of freshwater supply to estuarine and coastal sites has a strong influence on prevailing habitat conditions. The Severn Estuary SAC is designated for a range of habitats that are sensitive to changes in water flow rates. For example, intertidal sand- and mudflats have a high vulnerability due to potential sediment accretion and erosion in key parts of the SAC, potentially altering the biotic communities present within the sediment. Changes in water flow rate may also impact Atlantic saltmarsh by increasing sediment deposition and altering the emergence regime (i.e. the proportion of time

that vegetation is submerged in water or exposed to the air). The morphology of saltmarsh vegetation is primarily influenced by its position within the tidal frame, indicating it is sensitive to water quantity changes and desiccation effects.

It is unlikely that changes in water flow rates in the estuary will impact SPA / Ramsar birds (e.g. Bewick's swan) directly. Instead, the primary impacts would occur as indirect effects on foraging and roosting habitats. The intertidal mud- and sandflats, as well as saltmarsh have 'high vulnerability'. Reductions in the quality of supporting habitats may affect the long-term survival of individuals and could ultimately result in population-level changes. Notably, changes in water flow rates into the estuary are also linked with negative water quality impacts, such as changes in sedimentation, turbidity, thermal regime and salinity (see previous section for an AA of the water quality impact pathway).

DCWW is the water company that supplies large parts of Wales with potable water. The company has produced a Water Resources Management Plan (WRMP) 2024⁹⁶, which incorporates improved evidence around water resource resilience and a stronger obligation towards enhancing the environment in Welsh catchments. There are 23 Water Resource Zones (WRZs) across Wales and Caerphilly falls within the SEWCUS WRZ. Baseline evidence laid out in the WRMP indicates that three WRZs are predicted to face deficits in the supply-demand balance to 2050 under the preferred planning scenario⁹⁷, including Tywi Gower, Lleyr Harlech-Barmouth, and SEWCUS. This indicates that the current level of water provision will not be sufficient to meet the projected population in these WRZs. Therefore, further options will be needed to attain the required level of water supply, which may include the development of new resources or increases in abstraction rates from existing water resources. If additional freshwater was abstracted from waterbodies in hydrological continuity with the Severn Estuary SAC / SPA / Ramsar, this could have an impact on the ecological integrity of the site.

Based on the projected shortfall in potable water supply, DCWW produced a Preferred Plan to address any supply deficits. The main pillar of the strategy is an ambitious demand management programme. For example, it is planned to reduce leakage by 50% (compared to the 2017/18 levels) by 2050. The key delivery pathway for leakage reduction is to introduce smart metering, attaining a penetration of between 50 to 70% over the course of AMP8. Installing smart meters will enable the discovery of previously unknown leaks through active leakage control and customer reporting. The main pathways of addressing Customer Supply Pipe (CSP) leakage is via increased leak awareness as well as reduced tap run times. This will be augmented by mains renewal schemes in the later stages of the WRMP period to further build network resilience. Modelling indicates that demand management will reduce the volume of leakage from 163.80MI/d in 2020/21 to 85.52MI/d in 2049/50.

The company also considered a wide range of supply side options for the SEWCUS WRZ, including the reintroduction of currently unused sources and new sources of water (e.g. Grwyne Fawr, Wentwood reservoirs). However, novel catchment and system modelling indicates that the main limiting factor within this WRZ is the existing network connectivity (between 'high level' and 'low level' storage assets) rather than an actual shortfall in Deployable Output (DO). In other words, while sufficient potable water is available for distribution, the main issue is how this water can be adequately

⁹⁶ Welsh Water. (October 2022). Draft Water Resources Management Plan 2024. 66pp. Available at:

<https://www.dwrcymru.com/en/our-services/water/water-resources/draft-water-resources-management-plan-2024>

⁹⁷ The preferred planning scenario for the WRMP24 considers a 1 in 200 year level of drought resilience for emergency measures and a medium emission climate scenario.

stored, transferred and be made available in particular zones (especially under drought conditions). Therefore, any options for new water sources have been rejected and the preferred options for addressing the supply-demand deficit relate to connectivity within the company's distribution system:

- Scheme for increasing the capacity of the Memorial pumping station and associated water distribution network to allow increased supplies from the Court Farm Water Treatment Works (WTWs) in the system; and
- Scheme to allow the reduction in flows in the Llwynon trunk mains to zero, thereby increasing storage capacity in the Taff reservoirs and making them more drought-resilient.

The HRA of the WRMP conclude that it will not lead to adverse effects on the Severn Estuary Habitats Sites. Therefore, adverse impacts on the integrity of the estuary can be excluded. Since Welsh Water's WRMP is undertaken at a strategic level it inherently takes into account the impact of population growth across its service area and is therefore inherently 'in combination'.

6.5 Atmospheric Pollution

6.5.1 Cardiff Beechwoods SAC

Air quality modelling of two transects off the A470 into Cardiff Beechwoods SAC was undertaken to support the Cardiff Local Development Plan HRA. The only SAC habitat present within this part of the SAC (Castell Coch Woodlands and Road Section SSSI) is the beech woodland.

Oxides of nitrogen (NO_x) are not identified as a concern on any modelled transect as at no point on any transect will it exceed the critical level for all vegetation of 30 µgm⁻³. Since the critical level is not forecast to be breached no adverse effect on integrity will arise notwithstanding traffic growth.

Total ammonia concentrations are slightly above the critical level for lichens, being approximately 2.3 µgm⁻³ at the closest point on the transect (10m from the road) in all scenarios. However, the upper critical level of 3 µgm⁻³ can apply to beech woodland if the woodland in question has no particular lichen interest. Castell Coch Woodlands and Road Section SSSI is not mentioned as an important lichen SSSI in published research⁹⁸. Moreover, the Management Plan for the SAC⁹⁹ makes no mention of lichens or lower plants in its vision or performance indicators for the SAC, and it mentions that the woodland is subject to low light levels, which would not generally be conducive to higher lichen diversity.

In combination nitrogen exceeds 1% of the critical load of 10 kgN/ha/yr, being a maximum of 1.32 kgN/ha/yr (10.32% of the critical load) at the closest point to the road. However, the guidance identifies that 'the extent to which additional increments from plans and projects would undermine a conservation objective to 'restore' will involve further consideration of whether there is credible evidence that the emissions represent a real risk that the ability of other national or local measures and initiatives to otherwise reduce background levels will be compromised in a meaningful manner'. In this case a net improvement in nitrogen deposition of 7.68 kgN/ha/yr is forecast on the transect at the closest point to the roadside by 2036 with no growth, or an average

⁹⁸ <https://naturalresources.wales/media/695442/nrw-evidence-report-369-a-review-of-non-vascular-plant-and-fungal-sssi-features-in-wales-lichens-accessible.pdf>

⁹⁹ <https://naturalresources.wales/media/672066/FINAL%20CdF%20Beech%20Woods%20SAC%20Man%20Plan.pdf>

improvement of 0.64 kgN/ha/yr per year. It can therefore be concluded that the in combination impact of traffic growth will delay this forecast improvement by 2 years, which is not likely to meaningfully compromise the ability of other measures to improve nitrogen deposition rates. In addition, the management plan for the SAC states regarding air quality 'No limits set. There is no evidence to date that this has had an adverse impact on the features but this may need to be addressed in more detail in the future'. Given traffic related air quality can also be considered an improving issue as we move to electrification of the fleet, it is therefore considered that traffic growth on the A470 will not result in an adverse effect on the integrity of the SAC.

Given this modelling which enabled the Cardiff Local Development Plan HRA to conclude no adverse effects on integrity including in combination with other projects and plans, it can be concluded that the Caerphilly 2RLDP will not result in adverse effects on the integrity of Cardiff Beechwoods SAC with regards to atmospheric pollution, either alone or in combination.

6.5.2 Cwm Clydach Woodlands SAC/Usk Bat Sites SAC

These two SACs are considered together because they both lie adjacent to A465 Heads of the Valleys Road at Daren-felen, with Cwm Clydach Woodlands SAC lying immediately beyond the Usk Bat Sites SAC to the south of the road. The part of Usk Bat Sites SAC relevant to this assessment (i.e. within 200m of the A465) is Management Unit 5 of Mynydd Llangatwg SSSI. That Management Unit contains the SAC interest feature 'Tilio-Acerion forests of slopes, screes and ravines'. This habitat is of relatively low sensitivity to nitrogen deposition (with a critical load range of 15-20 kgN/ha/yr) but of high sensitivity to atmospheric ammonia due to the presence of lichens and bryophytes (critical level of 1 μgm^{-3}). The habitat within the relevant section of Cwm Clydach Woodlands SAC is W15a and W12a Fagus Sylvatica woodland, or scrub¹⁰⁰, which is an SAC interest feature (beech woodland) with a critical load range for nitrogen of 10-15 kgN/ha/yr.

Three transects were modelled to support the Monmouthshire Local Development Plan HRA. Oxides of nitrogen (NOx) are not identified as a concern on any modelled transect as at no point on any transect will it exceed the critical level for all vegetation of 30 μgm^{-3} . Since the critical level is not forecast to be breached no adverse effect on integrity will arise notwithstanding traffic growth.

With regards to ammonia, the relevant critical level of 1 μgm^{-3} is not exceeded on two of the modelled transects beyond 90m from the road. However, it is exceeded throughout the entirety of the third modelled transect under all scenarios. This is due to background concentrations from existing sources such as agriculture. Adverse in combination effects cannot therefore be dismissed on purely numerical grounds.

In combination nitrogen deposition rates exceed 1% of the critical load up to 50m from the road on one of the modelled transects and up to 40m. As with ammonia, therefore, adverse in combination effects cannot therefore be dismissed on purely numerical grounds.

¹⁰⁰

https://datamap.gov.wales/search/?title_icontains=Phase%202&abstract_icontains=Phase%202&keywords_name_icontains=Phase%202&purpose_icontains=Phase%202&method=or&limit=20&offset=0, and [New map | DataMapWales \(gov.wales\)](#)

‘In combination’ effects on the two SACs from ammonia and nitrogen deposition from traffic growth on the A465 to 2033 cannot be dismissed. However, the A465 is one of the major trunk roads in Wales and is a main east–west route in South Wales along with the M4 motorway. Moreover, large sections of the road are being converted to dual carriageway by 2025. As such, traffic-related changes in air quality on the A465 are not a local (Monmouthshire) issues but a Wales-wide issue and is the responsibility of the Welsh Government or South Wales Trunk Road Agent (SWTRA). This is relevant because Joint Nature Conservation Committee (JNCC) guidance on the issue¹⁰¹ states (pages 20/21) that: *‘The trunk road network forms the core of the national transport system. Trunk roads are central to long distance travel and connectivity across the UK and traffic patterns on trunk roads are a consequence of predicted growth across the UK generally. The effects of development on traffic flows on truck roads are more appropriately taken into account as part of national and regional strategic plan level HRAs.’*

This enabled the Monmouthshire Local Development Plan HRA to conclude no adverse effects on integrity including in combination with other projects and plans. As such, this is considered to be an issue to be address at a strategic national scale rather than through the Caerphilly 2RLDP.

6.5.3 Aberbargoed Grasslands SAC

Despite being within 200m of the A4049, the majority of Aberbargoed Grasslands SAC lies beyond this 200m distance, with only a small section of the south of the site within that area. Additionally, even at its nearest the site lies beyond 140m from the site and therefore, any potential impacts are limited in scope.

Additionally, reviewing the available data on APIS, N deposition to this SAC is improving, having fallen steeply from 17.7 kgN/ha/yr in 2003 to 13.9 kgN/ha/yr in 2023 (the most recent data) despite population and traffic growth over that same period. Given that the deposition rate of 13.9 kgN is below the minimum part of the critical load range for marsh fritillary, and the positive trajectory regarding N deposition, the existing conditions and changes in traffic movement and composition are not posing a threat to the integrity of the SAC.

With the existing conditions and given that the Core Management Plan hasn’t identified air quality as an issue, it can be concluded that the 2RLDP will not result in adverse effects of the Severn Estuary SPA and Ramsar sites with regards to loss of functionally linked land. either alone or in-combination with other Plans or Projects.

6.6 In-Combination Assessment

There is the potential for in-combination impacts on the Cardiff Beechwoods SAC when new housing allocations for Caerphilly are considered along with net new dwelling requirements for Cardiff and the Rhondda Cynon Taf areas. This HRA recommends that Caerphilly Council works with Cardiff Council to input into their recreation mitigation strategy. This enables a unified approach to mitigate the impacts of recreational pressure in-combination with other development in the area.

Similarly, recreational pressure on the Seven Estuary sites should be mitigates via coordination with Cardiff and Newport Councils to ensure the provision of a detailed and costed mitigation strategy.

¹⁰¹ [Main Report: Guidance on Decision-making Thresholds for Air Pollution \(jncc.gov.uk\)](https://jncc.gov.uk/main-report-guidance-on-decision-making-thresholds-for-air-pollution)

The potential for in-combination impacts in respect of water quality, level and flow, is addressed in Welsh Water's DWMP which takes account of population growth and is therefore inherently 'in-combination.'

With respect to atmospheric pollution, the assessments of Cardiff Beech Woods SAC, Cwm Clydach Woodlands SAC and Usk Bat Sites SAC rely on traffic and atmospheric pollution modelling undertaken in support of local development plans for adjoining authorities. This modelling factored in the traffic across multiple planning authorities and therefore represents an in-combination assessment. Aberbargoed Grasslands SAC is on a positive trajectory regarding atmospheric pollution and largely lies beyond the area which may be impacted by traffic along major roads. It is therefore considered that the 2RLDP will not negatively impact the integrity of the SAC either alone or in combination.

As set out in the Appropriate Assessment sections, no other potential for in-combination impacts was identified.

7. Conclusion

This HRA assessed the potential implications of the policies and site allocations included in the Caerphilly 2RLDP on the following Habitats sites:

- Aberbargoed Grasslands SAC
- Cardiff Beech Woods SAC
- Blaen Cynon SAC
- Brecon Beacons SAC
- Cwm Cadlan SAC
- Cwm Clydach Woodlands SAC
- Severn Estuary SAC/SPA/Ramsar
- River Usk/Afon Wysg SAC
- Usk Bat Sites SAC
- Llangorse Lake SAC
- Sugar Loaf Woodlands SAC
- Coedydd Nedd y Mellte SAC

Considering the scale and location of growth and site-specific ecological sensitivities, the impact pathways that required consideration were atmospheric pollution, recreational pressure, loss of functionally linked land, water quantity, level and flow, and water quality. All identified impact pathways were taken forward to Appropriate Assessment.

7.1 Recreational Pressure

7.1.1 Severn Estuary SAC/SPA/Ramsar

The Severn Estuary SPA / Ramsar / SAC is sensitive to impacts from recreational pressure. Delivery of additional housing in the south of the authority will be more impactful than development elsewhere in the authority. Travel distance is the main parameter in determining the likelihood of future residents to visit a site which, in combination with the attractiveness of the estuary for recreation, would make it unlikely for future residents to visit elsewhere.

Prior visitor surveys have found that there are a range of recreational catchments in different components of the Habitats sites, with the greatest being that found by Stroud Council of 12.6km. It is to be expected that different parts of the Severn Estuary have different recreational catchments. However, there is value in authorities around the Severn Estuary adopting a consistent core catchment.

It is anticipated that mitigation measures will be required to avoid adverse effects on the SPA / Ramsar. These could be delivered in the form of Strategic Access Management and Monitoring (SAMM) in the estuary itself, and / or through access enhancements and improvements to appropriately sited, existing or newly developed greenspaces. Given the substantial distance between Caerphilly and the Severn Estuary sites, as well as the fact that Caerphilly does not have control over

development on and access to the coast, it would be beneficial to coordinate recreation mitigation provision with Cardiff and Newport Councils.

It is recommended Caerphilly Council commit to liaising with Cardiff Council and Newport Council to input into their recreation management strategies for Severn Estuary SAC/SPA/Ramsar sites as appropriate to ensure that there is no adverse effect on the sites.

7.1.2 Cardiff Beech Woods SAC

The Cardiff Beech Woods SAC is designated for habitats sensitive to recreational disturbance, particularly as a result of trampling. The SAC lies in the highly populated northern part of Cardiff, adjoining the urban areas of Pentyrch, Taff's Well and Tongwynlais, in close proximity to Caerphilly. While no operational limits in terms of recreation have been set, NRW clearly highlight that a fuller understanding of a recreational baseline and habitat impacts is required. Overall, regarding the Cardiff Beech Woods SAC a balance between sustainable recreational use and protecting the nature conservation importance of the site is being sought by NRW.

Popular activities in the Cardiff Beech Woods SAC include walking, climbing and mountain biking, which are undertaken in all SSSI component parts. The site has seen a particular increase in climbing, which has been identified as a potential threat to the trees at the top of the crag. The CMP indicates that access management is undertaken by individual site owners, with potential conflicts of interest being addressed through the Local Authority Access Forum. Given the increasing popularity of the site, there is increasing pressure to open up additional areas for access with potential negative impacts on the woodland ground flora and qualifying trees.

In 2024, AECOM, in conjunction with a specialist survey company, undertook a visitor survey around Cardiff Beechwoods to provide visitor data for Cardiff Beechwoods SAC. This survey found a core catchment of 6km for the site. Given the known vulnerabilities of Cardiff Beechwoods SAC, it is considered that the net new dwellings that do not already have planning consent will potentially increase recreational pressure in the SAC further. Given the majority of visitors to the site originate from Cardiff, it is considered that alternative greenspace provision should be coordinated with Cardiff Council. However, given the unique setting and appeal of Cardiff Beech Woods, and its close proximity to such a large source of visitors, it may be concluded that off-site new recreational greenspace has limited potential to draw people away from the SAC. If alternative natural greenspace is considered likely to be ineffective, the focus would be on recreation management within the SAC (SAMM).

It is recommended Caerphilly Council commit to liaising with Cardiff Council to input into their recreation management strategy for Cardiff Beechwoods SAC as appropriate to ensure that there is no adverse effect on the SAC.

7.1.3 Usk Bat Sites SAC

Given the high sensitivity of this lesser horseshoe bats to disturbance, the most important caves have been gated for conservation reasons. Access to these caves requires prior application for a permit. However, numerous other roost and hibernation sites are not gated and as such potentially sensitive to higher visitor footfall. However, caving is a potentially dangerous activity that requires prior consent of a local caving club and the assistance of a qualified expedition leader¹⁰². Furthermore, the Caves of

¹⁰² <http://www.breconbeacons.org/caves>

South Wales website outlines the Cave Conservation Code, which aims at minimising impacts on cave biota as well as geological formations¹⁰³.

The BBNP visitor survey found that the area of the SAC is not heavily frequented and that caving was not among the most popular recreational activities mentioned by interviewees and as such is likely to be carried out by very few people. Given its specialised nature, it cannot be assumed that this activity is directly linked to a general increase in the local population, in the same way as dog-walking.

Given the relatively small number of residents that visit the approximate area around the SAC, the existing access controls (e.g. locked gates) of the most important roost and hibernation caves and the wider regulation of caving activities, it is considered that the implementation of the 2RLDP would not result in adverse effects on the integrity of the caves in the Usk Bat Sites SAC, both alone and in-combination.

The Usk Bat Sites SAC lies over 6km from Caerphilly and therefore does not lie within easy walking distance of the plan area. Car-based visitors will of course visit sites further afield but scrutiny of the small number of public roads that provide access into the SAC's component sites indicates that they are generally narrow, and parking is very limited, which will inherently control the number of casual visitors. The site will therefore not be a destination for mass recreational visits arising from Caerphilly.

The potential adverse effects of recreational climbing in the SAC are appropriately addressed via the existing permitting system. The overall increase in the number of climbers as a result of the 2LRPD is therefore expected to be limited and is adequately addressed through the permit system that already operates in the SAC.

It is therefore considered that the Caerphilly 2RLDP will not result in adverse effects on the integrity of Usk Bat Sites SAC as a result of recreational pressure, either alone or in-combination with other Plans or Projects.

7.1.4 River Usk SAC

The River Usk SAC is a freshwater system that is designated for its plain to montane water course, several anadromous fish species and otter.

Overall, it is considered that adverse disturbance impacts on otter from dog walkers and other recreational activities are very unlikely to arise. Otter are nocturnal animals and therefore predominantly active when recreational activities typically are not taking place. Furthermore, otter show high adaptive resilience towards disturbance. Overall, it is concluded that the overall health of otter populations is not adversely impacted by human disturbance.

Canoeing access in specific stretches of the River Usk SAC is subject to voluntary access arrangements by the Wye and Usk Foundation¹⁰⁴. The advice set out by this organisation stipulates that canoeing and kayaking should only be undertaken freely in winter, when the rivers are in spate flow. Restricting boating activities to the winter ensures that damage to the qualifying species and habitat is minimised.

Regarding recreational fishing, catch and release is now promoted by Natural Resources Wales as an angling technique to aid the conservation of fish stocks. Furthermore, any Atlantic salmon or sea trout that is caught must be returned to the river¹⁰⁵. There are also rod fishing byelaws in place for Wales, detailing the open

¹⁰³ <http://www.ogof.org.uk/>

¹⁰⁴ <https://www.wyeuskfoundation.org/>

¹⁰⁵ <https://naturalresources.wales/days-out/things-to-do/fishing/?lang=en>

seasons for a range of fish species, which are designed to protect the integrity of qualifying fish populations.

While canoeing and fishing are popular in the River Usk SAC, only approx. 1.5% of the UK population engage in recreational fishing¹⁰⁶, which is exceedingly small compared to more popular recreational activities such as dog walking. Therefore only a small fraction of residents would add to the number of canoeists and fishers. Consequently, a direct link between the delivery of new housing in an area and a significant increase in the number of people that will engage in fishing or canoeing cannot be drawn. Given this, it is concluded that there will be no adverse effects of the 2RLDP on the site integrity of the River Usk SAC with regards to recreational pressure.

7.2 Functionally Linked Land

The Severn Estuary SPA/Ramsar is designated for its large population of waterfowl and waders generally, and for its specific populations of non-breeding Bewick's swan, white-fronted goose, dunlin, redshank, shelduck, gadwall, ringed plover, curlew and pintail. To aid consideration of functionally-linked land issues Natural England has produced unpublished guidance. According to this guidance most waterfowl and waders remain within 2km of their core roost areas (i.e. the SPA/Ramsar site) when foraging. Of those species for which Severn Estuary SPA/Ramsar is designated the exceptions are Bewick's swan and white-fronted goose which forage up to 10km from their core roost sites. The same Natural England guidance considers that residential development could have an adverse effect on these two species if it resulted in loss of functionally-linked land up to 5km from the core roost areas (the SPA/Ramsar). Given that Severn Estuary SPA/Ramsar lies approximately 5.7km away from the plan area, and in line with this Natural England guidance, it can be concluded that the 2RLDP will not result in adverse effects of the Severn Estuary SPA and Ramsar sites with regards to loss of functionally linked land, either alone or in-combination with other Plans or Projects.

7.3 Water Quality

WWTWs serving new housing and employment development will discharge additional treated effluent, either directly into the Severn Estuary or into waterbodies that are in hydrological continuity with the Habitat sites. Both the SPA / Ramsar and SAC designations are considered vulnerable to negative water quality impacts.

Caerphilly lies within DCWW's South East Valleys operational wastewater planning area¹⁰⁷. Welsh Water employed several predictive modelling tools to inform their DWMP. Caerphilly lies within the Rhymney R – conf Nant Cylla to Chapel Wood planning catchment, which is served by five WWTWs. The results for the DWF assessment indicate that there will be sufficient headroom at the WWTWs to accommodate the allocated growth up to 2050, including a 20% spare treatment capacity. DCWW seeks to address the shortages in treatment capacity under wet weather flows by improving headroom of the sewage network, primarily by reducing per capita water consumption (to 100l per person per day by 2050) and volume of trade effluent (by 25% in the long-term). Currently, 19 schemes are put forward in the

¹⁰⁶ approximately 1 million fishing licences are sold annually in the UK, equating to approximately 1.5% of the UK population; even assuming that an equal number of people regularly fish without licences that still equates to only 3% of the population

¹⁰⁷ Welsh Water. (November 2023). Drainage and Wastewater Management Plan 2024 – River Basin Catchment Summary for South East Valleys. 58pp. Available at: <https://www.dwrcymru.com/en/our-services/wastewater/drainage-and-wastewater-management-plan>

first cycle preferred plan for Cardiff Bay WwTW to reduce the number of CSO overflows and other flooding events associated with the works.

Natural Resources Wales set Environmental Quality Standards (EQS) for all important non-toxic and toxic aquatic pollutants, which are set in the context of broad water quality targets specified in the Water Framework Directive (WFD). The water quality requirements of qualifying habitats and species are fundamental in informing these targets and, therefore, remaining within the consented discharge flows / concentrations implies that no adverse effects on Habitat sites will occur in relation to water quality changes. Since the DWMP is undertaken at a strategic level it inherently takes into account the impact of population growth across its service area and is therefore inherently 'in combination'.

Aberbargoed Grasslands SAC is potentially susceptible to changes in water quality as a result of surface water run off from neighbouring development. The 2RLDP allocates Land at Heol y Cefn for development which lies adjacent to Aberbargoed Grasslands SAC. Sustainable Drainage Systems (SuDS) are considered the main approach to reduce the volume of surface run-off that reaches sensitive ecological receptors by limiting the occurrence and magnitude of flooding. SuDS are interventions that manage surface water at source by limiting run-off to pre-development greenfield rates. Given that SuDS can prevent surface run-off from reaching Habitats sites, policy framework is required to ensure that Land at Heol y Cefn will have appropriate SuDS provision incorporated into the design. Policy PM2: Design and Amenity requires development to ensure the *"incorporation of resource efficiency and passive solar gain... and where required, the use of sustainable drainage systems"*. This policy ensures that there will be suitable sustainable drainage systems in place for the development at Land at Heol y Cefn. Therefore, it is considered that there is adequate policy framework in place to ensure there will be no adverse impacts on Aberbargoed Grasslands SAC as a result of changes in water quality as a result of the Plan.

7.4 Water Quantity, Level and Flow

The Severn Estuary SAC is designated for a range of habitats that are sensitive to changes in water flow rates. It is unlikely that changes in water flow rates in the estuary will impact SPA / Ramsar birds (e.g. Bewick's swan) directly. Instead, the primary impacts would occur as indirect effects on foraging and roosting habitats.

DCWW has produced a Water Resources Management Plan (WRMP) 2024¹⁰⁸, which incorporates improved evidence around water resource resilience and a stronger obligation towards enhancing the environment in Welsh catchments. Caerphilly falls within the SEWCUS WRZ which is predicted to face deficits in the supply-demand balance to 2050. This indicates that the current level of water provision will not be sufficient to meet the projected population.

Based on the projected shortfall in potable water supply, DCWW produced a Preferred Plan to address any supply deficits. The main pillar of the strategy is an ambitious demand management programme. Welsh Water has rejected options for new water sources and the preferred options for addressing the supply-demand deficit relate to connectivity within the company's distribution system. The HRA of the WRMP conclude that it will not lead to adverse effects on the Severn Estuary Habitats Sites. Therefore, adverse impacts on the integrity of the estuary can be excluded. Since the

¹⁰⁸ Welsh Water. (October 2022). Draft Water Resources Management Plan 2024. 66pp. Available at: <https://www.dwrwymru.com/en/our-services/water/water-resources/draft-water-resources-management-plan-2024>

WRMP is undertaken at a strategic level it inherently takes into account the impact of population growth across its service area and is therefore inherently 'in combination'.

7.5 Atmospheric Pollution

Atmospheric pollution could not be excluded as a potential impact pathway for several Habitats sites. These are:

- Aberbargoed Grasslands SAC
- Cardiff Beech Woods SAC
- Brecon Beacons SAC
- Cwm Clydach Woodlands SAC
- Usk Bat Sites SAC

Following detailed consideration, including review of traffic and air quality modelling undertaken by adjacent authorities, it has been concluded that there will be no adverse effects on the integrity of any of these sites.

Appendix A Likely Significant Effects (LSEs) Screening

Where the 'LSEs Screening Outcome' column is shaded orange, LSEs of the policy cannot be excluded, and it is taken forward to Appropriate Assessment (AA). Where that final column is shaded green, a realistic pathway of impact is not present, and the policy is screened out from AA.

Table 3. Likely Significant Effects (LSEs) screening assessment of policies contained in the 2RLDP.

Policy Number & Name	Policy Content	LSEs Screening Outcome
SP1: The Strategy for the 2RLDP	To deliver the Development Strategy for Caerphilly County Borough between 2020 and 2035, the 2RLDP will make provision for: • 7,151 new homes to meet a housing requirement of 6,165 (based on a 16% flexibility allowance) including 1,906 affordable homes. • 40.3 hectares of employment land for Class B use. The spatial distribution of this growth will be in the most sustainable settlements, as set out in Policy SP2, aligned with: • A Town Centre First Focus • A Metro Investment Focus	Likely Significant Effects. Screened In. This policy allocates specific quanta of dwellings and employment land for the Plan Area which are detailed further in subsequent policies. However, this policy, generally speaking, may have likely significant effects on surrounding Habitats Sites via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.

SP2: Settlement Hierarchy	The following settlement hierarchy is identified for Caerphilly County Borough: Tier 1 Settlements Rhymney; Bargoed and Gilfach; Ystrad Mynach (including Penallta and Tredomen); Nelson; Blackwood (including Cefn Fforest and Pontllanfraith); Newbridge; Risca and Pontymister; Caerphilly; Bedwas and Trethomas. Tier 2 Settlements Pontlloftyn; New Tredegar; Aberbargoed; Cefn Hengoed and Hengoed; Maesycwmmmer; Oakdale and Croespenmaen; Crosskeys and Pontywaun; Llanbradach. Tier 3 Settlements Abertysswg; Markham; Glan-y-nant and Tir-y-berth; Penpedairheol and Glyngaer; Gelligaer and Penybryn; Pengam and Fleur-de-lis; Crumlin; Abercarn and Cwmcarn; Pantiside; Cwmfelinfach; Wattsville; Abertridwr; Graig-y-rhacca; Machen. Tier 4 Settlements Llechryd; Princetown; Fochriw; Deri; Hollybush; Argoed; Trinant; Hafodyrynys; Wyllie; Ynysddu; Brynawel; Senghenydd; Porset; Rudry; Waterloo. Tier 5 Settlements All other settlements located outside of defined settlement boundaries. Growth and new development in the County Borough will be: • Targeted towards the Tier 1 and 2 Settlements in the first instance; then • Towards the Tier 3 Settlements. Tier 4 and 5 Settlements can only accommodate small-scale infill and logical rounding-off development where it accords with the role and function of the settlement.	No Likely Significant Effects. Screened out. This is a development management policy that sets out 5 tiers of settlements with development targeted towards higher tiers. However this policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
SP3: Land Use and Community Well-being	Development proposals must demonstrate how they contribute positively to the well-being of current and future communities in Caerphilly County Borough by promoting: a. Health and quality of life;	No Likely Significant Effects. Screened out. This is a development management policy requires

	b. Social Inclusion and Cohesion; c. Economic well-being; d. Environmental Sustainability; e. Cultural and Community Identity. All major development proposals should be accompanied by a Health Impact Assessment that identifies and addresses the likely health impacts of the proposed development. The scope and detail of the HIA should be proportionate to the nature and scale of the development proposed.	proposals to demonstrate that they contribute to well-being and requiring HIAs for major developments. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
SP4: Climate Change	Development proposals must make a positive and proportionate contribution towards addressing the causes of, and adapting to the impacts of, climate change by demonstrating that the design of the development has taken account of the need to: a. Maximise resource efficiency and utilise sustainable construction techniques using locally sourced materials; b. Promote low/zero carbon energy requirements; c. Reduce energy use and promote energy efficiency; d. Maximise the opportunities for renewable energy technology and repowering where applicable; e. Maximise the opportunities for co-locating developments and promote sustainable transport, in accordance with the sustainable transport hierarchy; f. Be resilient to, and mitigate for, the impacts of climate change in terms of design; g. Promote decarbonisation; h. Avoid increasing flood risk and mitigate any residual flood risks; i. Maximise water efficiency and minimise adverse impacts upon the quality of water resources; j. Promote resilience through maximising the opportunities for enhancing green infrastructure as part of the design of the development.	No Likely Significant Effects. Screened out. This is a design management policy that sets out key design criteria for developments concerning energy efficiency, renewable and sustainable energy technology and climate change mitigation. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

SP5: Biodiversity, Ecosystem Resilience and Habitat	Where relevant, development proposals must maintain and enhance biodiversity and demonstrate a net biodiversity benefit, whilst contributing towards improved ecosystem resilience and habitat connectivity.	No Likely Significant Effects. Screened out. This is a positive policy that supports biodiversity and does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
SP6: Placemaking Principles	Where relevant to the nature, scale and location, development proposals must enhance overall well-being through the protection and enhancement of the economic, social, environmental and cultural aspects of the County Borough and contribute towards the following strategic placemaking principles: a. Creating a rich mix of compatible uses; b. Providing a variety of housing types and tenures; c. Building places at a walkable scale, with homes, local facilities and public transport within walking distance of each other; d. Increasing population density, seeking development densities of 50 dwellings per hectare in urban areas and higher densities in town centres and close to transport nodes; e. Developing at urban densities that support the provision and improvement of public transport and local facilities; f. Establishing a permeable network of streets, with a hierarchy that informs the nature of development; g. Promoting a plot-based approach to development, which provides opportunities for the development of small plots, including for custom and self-builders; and h. Integrating new and existing green and blue infrastructure, informed by the planning authority's Green Infrastructure Assessment.	No Likely Significant Effects. Screened out. This is a development management policy that sets out key development criteria concerning placemaking and development design. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

PM1: Creating well designed places	Development proposals, where relevant to their nature, scale and location, will only be permitted where they demonstrate high-quality design and show how they: a. Respect Local Context by: i. Responding positively to the site and its surroundings, integrating with settlement edges, views, landscapes and heritage; ii. Contributing to local distinctiveness and townscape, with scale, density, height and materials appropriate to the character of the area; and iii. Supporting innovation where it reinforces identity. b. Shape Built Form and Movement by: i. Prioritising walking, cycling and public transport through compact, permeable, legible layouts; ii. Creating coherent built form with clear street hierarchy, landscape structure, focal points and active frontages, and iii. Delivering high-quality streets and spaces that encourage interaction, health and well-being, and integrate green and blue infrastructure. c. Provide Mixed and Integrated Uses by: i. Ensuring access to local services, facilities and public spaces; ii. Delivering varied housing types and tenures, including affordable homes indistinguishable from market housing; and iii. Coordinating development with infrastructure and utilities. d. Safeguard Amenity and Usability by: i. Securing good living conditions with adequate natural light, privacy and outdoor space; ii. Minimising the impacts of noise, artificial light, dust and odours from the built development on neighbours; and iii. Protecting the amenity of neighbours from overlooking, overshadowing and overbearing; and iv. Providing well-integrated storage, servicing, parking and EV charging without visual clutter.	No Likely Significant Effects. Screened out. This is a development management policy that sets out key development criteria concerning placemaking and development design. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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	e. Are Sustainable and Durable by: i. Using high-quality, adaptable materials that are resource-efficient and resilient to climate change; ii. Managing construction and operational waste in line with the waste hierarchy; and iii. Ensuring provision is made for the sustainable management, sorting, storage and collection of waste in all new development.	
PM2: Design and Amenity	Development proposals must have regard for all material planning considerations relevant to the level of development applied for to ensure: a. An appropriate mix of uses that reflect the role and function of settlements; b. A high standard of design that reinforces local character and distinctiveness; c. Proposals are designed in accordance with best practice in terms of designing out crime; d. A location and layout that reflects the sustainable transport hierarchy and promotes modal shift; e. Sustainable transport and accessibility principles to provide full, easy and safe access for all; f. The incorporation of resource efficiency and passive solar gain through layout, materials, construction techniques, water conservation, and where required, the use of sustainable drainage systems; g. The efficient use of land, including higher densities where accessible to key transport nodes; h. The integration and enhancement of existing natural heritage features; i. The incorporation of mitigation measures that improve and maintain air quality; j. There is no unacceptable impact on the amenity of adjacent properties or land; k. Proposals would not result in over-development of the site and/or its surroundings;	No Likely Significant Effects. Screened out. This is a development management policy that sets out key development criteria concerning placemaking and development design. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

	I. The proposed use is compatible with surrounding land-uses and would not constrain the development of neighbouring sites for their identified land-use; and Where applicable, the viability of existing neighbouring land uses would not be compromised by virtue of their potential impact upon the amenity of proposed new residential development	
PM3: General Locational Constraints	The 2RLDP defines settlement boundaries and these are identified on the Proposals Map. Where relevant to the nature, scale and location, development proposals will be considered against the following criteria: a. Development proposals will not be permitted if they prejudice the implementation of wider comprehensive redevelopment or constrain the development of any adjacent site for its allocated land-use; b. Within defined settlement boundaries, development will only be permitted where: i. it accords with the Settlement Hierarchy set out in Policy SP2 supporting the identified role and function of each settlement; ii. it does not prejudice the comprehensive redevelopment or delivery of land identified for allocation; and iii. it accords with other relevant policies of the Plan. c. Outside of defined settlement boundaries development will not be permitted except where it is for: i. The direct replacement of an existing dwelling of an appropriate scale and similar footprint; ii. The extension, conversion, rehabilitation or replacement of an appropriate rural building; iii. Agriculture and/or forestry; iv. The winning and working of minerals;	No Likely Significant Effects. Screened out. This is a development management policy that sets out key development criteria concerning placemaking and development location. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

	v. An appropriate rural enterprise or farm diversification project; vi. For recreation, leisure and tourism proposals that are suitable in a countryside location; vii. Associated with the provision of public utilities, infrastructure and waste management facilities that cannot reasonably be located elsewhere; viii. Associated with the reclamation / treatment of derelict or contaminated land; or ix. Renewable energy generation and associated infrastructure.	
PO1: Planning Obligations	The Council will seek to secure planning obligations (S106 Agreements) where they are necessary to make the development acceptable in planning terms, directly related to the proposed development, and fairly and reasonably related in scale and kind to the development. Such obligations may include: A. Affordable housing; B. Infrastructure for walking, cycling, public transport and parking to link development schemes to the strategic transport and active travel network; C. Highway improvements necessary to make the development acceptable in highway and planning terms; D. On site school and ancillary facilities generated by the development proposal; E. Flood defence measures required to mitigate the risk of flooding; and F. Green Infrastructure including on site formal and informal open and leisure space and community growing space.	No Likely Significant Effects. Screened out. This is a development management policy that sets out the manner and type of planning obligations that the council will seek. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
PO2: Community Infrastructure Levy	Development proposals will be required to contribute toward the provision of strategic infrastructure to support the County Borough as a whole, in line with the Community Infrastructure Levy Charging Schedule.	No Likely Significant Effects. Screened out. This policy requires contributions to strategic infrastructure and does not specifically allocate sites for development.

		Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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SP7: Housing Requirement	To meet the identified housing requirement of 6,165 dwellings, provision is made for the delivery of 7,151 dwellings during the plan period 2020-2035. This will include: • 3,406 dwellings from the existing housing land supply • 2,767 dwellings on allocated housing sites • 978 dwellings from small and large windfall developments	Likely Significant Effects. Screened In. This policy allocates specific quanta of dwellings for the Plan Area. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.
HO1: Housing Allocations	To deliver the plan's strategic growth and contribute to meeting the identified housing requirement set out in Policy SP1, land is allocated for housing at several locations (these allocations are listed in table 4)	Likely Significant Effects. Screened In. This policy allocates specific quanta of dwellings for the Plan Area. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.

HO2: Housing-led Regeneration Opportunities	The following housing-led regeneration opportunities are identified: <table><tr><td>HO2.1</td><td>Land at Aberbargoed, Plateau, Aberbargoed</td></tr><tr><td>Land use</td><td>Housing/Education</td></tr><tr><td>HO2.2</td><td>Land at Oakfield Street, Ystrad Mynach</td></tr><tr><td>Land use</td><td>Housing/Health/Leisure Facilities</td></tr><tr><td>HO2.3</td><td>Land at Handball Court, Nelson</td></tr><tr><td>Land use</td><td>Housing/Park and Ride provision</td></tr><tr><td>HO2.4</td><td>Land at Former Pontllanfraith Comprehensive School</td></tr><tr><td>Land use</td><td>Housing/Health/Community Facilities</td></tr><tr><td>HO2.5</td><td>Land at Llanbradach</td></tr><tr><td>Land use</td><td>Housing/Employment/Park and Ride provision</td></tr><tr><td>HO2.6</td><td>Lant at former Tar Plant, Caerphilly</td></tr><tr><td>Land use</td><td>Housing</td></tr></table>	HO2.1	Land at Aberbargoed, Plateau, Aberbargoed	Land use	Housing/Education	HO2.2	Land at Oakfield Street, Ystrad Mynach	Land use	Housing/Health/Leisure Facilities	HO2.3	Land at Handball Court, Nelson	Land use	Housing/Park and Ride provision	HO2.4	Land at Former Pontllanfraith Comprehensive School	Land use	Housing/Health/Community Facilities	HO2.5	Land at Llanbradach	Land use	Housing/Employment/Park and Ride provision	HO2.6	Lant at former Tar Plant, Caerphilly	Land use	Housing	Likely Significant Effects. Screened In. This policy allocates specific areas for housing led regeneration. This policy may have likely significant effects on surrounding Habitats Sites via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.
HO2.1	Land at Aberbargoed, Plateau, Aberbargoed																									
Land use	Housing/Education																									
HO2.2	Land at Oakfield Street, Ystrad Mynach																									
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Land use	Housing/Employment/Park and Ride provision																									
HO2.6	Lant at former Tar Plant, Caerphilly																									
Land use	Housing																									
SP8: Affordable Housing Target	The Plan seeks to deliver at least 1,906 affordable dwellings over the plan period, through the planning system. These should include a range of tenures, types and sizes of homes to contribute to balanced and sustainable communities.	No Likely Significant Effects. Screened out. This policy seeks to ensure affordable housing provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.																								

SP9: Provision of Affordable Housing	Planning Obligations will be secured to ensure that there is an appropriate level of affordable housing provision, in accordance with an assessment of local need, for all allocated and windfall housing sites that can accommodate: a. 10 or more dwellings - Where there is evidence of need for affordable housing, the Council will expect new housing sites to deliver the following levels of affordable homes on-site. b. 5-9 dwellings - Financial contributions will be required in accordance with details set out in the Affordable Housing Supplementary Planning Guidance. For the purposes of determining the appropriate level of affordable housing that should apply under this policy, the Council may elect to aggregate adjacent or neighbouring housing site proposals, if there is a clear link between them. The Council requires the provision of affordable housing to be provided on site, unless exceptional circumstances are demonstrated, with the requirement being rounded to the nearest whole number. Where an off-site financial contribution is made, the monies received will be used to deliver alternative affordable housing within the County Borough.	No Likely Significant Effects. Screened out. This policy seeks to ensure affordable housing provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
HO3: Affordable Housing Exception Sites	Permission will be granted for small sites for affordable housing in or adjoining rural settlements on land where housing would not normally be permitted, where the following apply: a. The site is solely for affordable housing and there are suitable arrangements to ensure that the housing is affordable and made available for initial and subsequent occupation by those in need of affordable housing b. A genuine local need for affordable housing has been identified in the village or settlement c. It can be demonstrated that the need for affordable housing in the village or settlement cannot be satisfactorily met within the settlement or within a nearby settlement d. The site is at an appropriate scale and is in keeping with the form and character of the settlement	No Likely Significant Effects. Screened out. This policy seeks to ensure affordable housing provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

HO4: Later Living Housing	Housing developments on sites greater than 0.5 hectares or capable of accommodating 10 or more dwellings, will be required to make provision for 10% Later Living Housing.	No Likely Significant Effects. Screened out. This policy seeks to ensure later living housing provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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HO5: Housing Mix and Density	Development must create mixed, socially inclusive, sustainable communities by providing a range of house types and sizes to meet the needs of residents at an efficient and appropriate density. In the first instance, residential development should seek to achieve a density of 50 dwellings per hectare. A lower density of development, to a minimum of 30 dwellings per hectare, will only be permitted where: a. Design, physical or infrastructure constraints prevent the minimum density from being achieved; or b. The minimum density would harm the character and appearance of the site's surroundings; or c. Where it can be demonstrated there is a particular lack of choice of housing types within a local community; or Densities higher than 50 dwellings per hectare will be sought on sites that are well related to a Town centre or Metro Hub. On small sites, conversions and mixed-use town centre schemes, density will be set through a design led site analysis, maximising homes while delivering acceptable townscape, amenity and servicing outcomes. In all cases, housing developments must make the most efficient use of land in accordance with sustainable, placemaking principles. Good Design must be utilised to maximise the density of development without compromising the quality of the living conditions provided, whilst making adequate provision for privacy and space about dwellings.	No Likely Significant Effects. Screened out. This policy seeks to ensure a suitable housing mix and density. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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HO6: Small Sites and Infill	Proposals for small-scale residential development, including infill plots, subdivision of existing curtilages and redevelopment of small sites within defined settlement boundaries, will only be permitted where all of the following criteria are met: - The proposal respects the form, character and appearance of the surrounding street or settlement, including plot size, building line and height; - The development does not have an unacceptable impact on the privacy, outlook, or amenity of adjoining occupiers and provides adequate amenity for future residents; - Safe access, servicing and parking can be accommodated without causing highway safety issues or visual harm to the street scene; - The scheme demonstrates good quality design in accordance with Policy PM1 and any relevant design guidance or Supplementary Planning Guidance; - On all small and infill sites capable of accommodating five dwellings or more (or the combined product of), a Masterplan which includes all open space, affordable housing and Sustainable Drainage Systems (SuDS) provision must be submitted at Outline Planning Stage and all subsequent development on that site should comply with the approved Masterplan; and - The proposal does not prejudice green and blue infrastructure, biodiversity or flood risk management, in line with other policies of this Plan.	No Likely Significant Effects. Screened out. This policy sets out criteria for small scale residential development including in-fill plots and subdivision or redevelopment of existing small sites. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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HO7: Householder Development and Residential Annexes	Proposals for extensions, alterations, outbuildings or other forms of householder development (including works within the curtilage of a dwelling) will only be permitted where: a. The scale, form, siting and design of the proposal respects the host dwelling, neighbouring properties and wider street scene in terms of character, appearance and materials; b. The development does not have an unacceptable impact on the amenity of adjoining and future occupiers; c. Sufficient external amenity space, on-site parking and safe access are maintained for the occupiers of the dwelling; d. Boundary treatments, hard standings and other curtilage works are sympathetic to the character of the dwelling and locality; e. The proposal would not result in overdevelopment of the plot, having regard to the relationship of built form to garden space; f. Proposals for annexes or ancillary accommodation are designed and located to remain subordinate to the host dwelling and function as part of the same planning unit. Proposals for residential Annexes will also be considered against the following criteria: a. The annexe maintains a clear physical and/or functional link to the main dwelling and is designed to remain ancillary to it; Where detached, the annexe is of modest scale, subordinate in form and located in close proximity to the main dwelling, sharing access, parking, utilities, kitchens, and garden space within a single planning unit, unless there is a clear justification to the contrary.	No Likely Significant Effects. Screened out. This policy sets out criteria for the extension of existing dwellings and the construction of residential annexes. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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HO8: Gypsy and Traveller Accommodation	To meet the identified need for Gypsy and Traveller Accommodation and to allow for the potential future expansion of Gypsy and Traveller households the following site is allocated for the provision of a total of 12 pitches: HO8.1 Land at Former Station House, Rhymney	Likely Significant Effects. Screened In. This policy allocates a specific site for development. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.
HO9: Locational Constraints – Gypsy and Traveller Sites	Proposals for the provision of new, or extensions to, Gypsy and Traveller sites will be permitted provided: a. The site is well related to suitable community facilities and services for the prospective occupants; b. The site is capable of being served by utilities including sustainable waste disposal and recovery and emergency services; c. The site affords satisfactory amenity standards both for its occupants and for neighbouring land uses; d. The site can accommodate residential and home-based business uses without detriment to the amenity and character of the area; e. The site is not in an area at risk of flooding given the particular vulnerability of caravans; and f. The use of the site would not result in the loss of important recreational or amenity land or land with significant natural heritage value.	No Likely Significant Effects. Screened out. This policy sets out criteria for any Gypsy and Traveller sites that are to be developed or extended. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

SP10: Sustainable Transport	The 2RLDP promotes a modal shift towards sustainable forms of transport and increasing Active Travel opportunities. New development, where relevant to their nature, scale and location, must support an enhanced transport network that increases the proportion of journeys being undertaken by sustainable travel modes. This will be achieved through: a. Siting new developments in sustainable and accessible locations where a range of services and facilities are within walking and cycling distance. b. Ensuring that new development is integrated with existing Active Travel Routes that provide a convenient and safe travelling experience, contributes to their expansion and improves connectivity within and between towns, villages and surrounding rural settlements. c. Ensuring that new developments are designed to encourage walking, cycling and public transport use as alternatives to private car use, as well as encouraging options such as mobility hubs and shared car use. d. Provision of bicycle storage and cyclist facilities where appropriate. e. Provision of an appropriate level of vehicle parking which encourages modal shift and does not exceed the maximum parking provision set out in the Parking Standards Supplementary Planning Guidance. f. Providing the necessary infrastructure for Ultra Low Emission Vehicles in appropriate locations. g. Improving accessibility for all and connectivity to sustainable transport facilities. h. Providing new or enhanced transport services and facilities where appropriate. i. Supporting and facilitating the delivery of the South Wales Metro and Regional Transport Plan. j. Safeguarding former railway lines for potential reinstatement of services or alternative Active Travel routes.	No Likely Significant Effects. Screened out. This policy seeks to support a shift towards sustainable transport with requirements for new development and safeguard of land for transport provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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	As appropriate, new development proposals will be required to provide Transport Statements, Transport Assessments and Travel Plans to ensure the delivery of travel choice and sustainable opportunities for travel.	
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TRN1: Active Travel Improvements	The network of cycle paths and community routes will be extended, improved and enhanced in line with the schemes set out in the Council's Active Travel Network Map.	No Likely Significant Effects. Screened out. This policy seeks to improve active travel routes. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TR2: Protecting Strategic Transport Improvement Routes	The Council will protect the following strategic transport improvement routes from inappropriate development and will support and promote proposals for their implementation: • TR2.1 A469: Troedrihwfuch (resilient-roads scheme); • TR2.2 Cwmbargoed rail line (reinstatement of passenger services); • TR2.3 Caerphilly/Machen/Newport rail line (reinstatement of passenger services).	No Likely Significant Effects. Screened out. This policy seeks to safeguard land for transport provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TR3: Safeguarding Former Rail Lines	The routes of former railway lines that have the potential for transport related development will be safeguarded, particularly those that facilitate walking, cycling, rail freight or passenger movements.	No Likely Significant Effects. Screened out. This policy seeks to safeguard land for transport provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

TR4: New Railway Stations	The Council will identify and safeguard land at the following locations for the provision of new railway stations: • TR4.1 Nelson; • TR4.2 Crumlin; • TR4.1 Llanbradach. Development proposals that would prejudice the delivery of these stations will not be permitted.	No Likely Significant Effects. Screened out. This policy seeks to safeguard land for transport provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TR5: New Park-and-Ride Facilities	The Council will identify and safeguard land for new park-and-ride facilities at: • TR5.1 Ystrad Mynach; • TR5.2 Nelson • TR5.3 Llanbradach. Development proposals that would prejudice the delivery of these facilities will not be permitted.	No Likely Significant Effects. Screened out. This policy seeks to safeguard land for park and ride provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TR6: Caerphilly Interchange	The Council will identify and safeguard land for a new Caerphilly Transport Interchange. Development proposals that would prejudice the delivery of the Interchange will not be permitted.	No Likely Significant Effects. Screened out. This policy seeks to safeguard land for transport provision. It does not allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

TR7: Road Hierarchy	The following road hierarchy is identified to ensure a safe and efficient highway network: a. The Strategic Highway Network b. County Routes c. Distributor Roads d. Streets e. Private Streets	No Likely Significant Effects. Screened out. This policy sets out a road hierarchy. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TR8: Protection of Machen Quarry Railhead	The location of the railhead at Machen Quarry will be safeguarded for its existing use, to ensure the continued supply of aggregate by sustainable means.	No Likely Significant Effects. Screened out. This policy seeks to safeguard land for continued quarry operation. It does not allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TR2: Protecting Strategic Transport Improvement Routes	The Council will protect the following strategic transport improvement routes from inappropriate development and will support and promote proposals for their implementation: • TR2.1 A469: Troedriwfuwch (resilient-roads scheme); • TR2.2 Cwmbargoed rail line (reinstatement of passenger services) • TR2.3 Caerphilly/Machen/Newport rail line (reinstatement of passenger services).	No Likely Significant Effects. Screened out. This policy seeks to safeguard land for transport provision. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

SP11: Retail and Commercial Centre Hierarchy	The following hierarchy is identified for the retail and commercial centres in the County Borough: a. Principal Town Centres: ▪ Bargoed; ▪ Ystrad Mynach; ▪ Blackwood; ▪ Risca & Pontymister; ▪ Caerphilly. b. Local Centres: ▪ Rhymney; ▪ Nelson; ▪ Newbridge; ▪ Bedwas. Proposals for such retail, commercial or community-oriented uses as may be considered acceptable in town and local centres should adhere to this hierarchy as the basis for the application of a sequential approach to the location of development. New development within these centres should accord with the hierarchy.	No Likely Significant Effects. Screened out. This policy sets out a hierarchy for the retail and commercial centres within the plan area. It does not allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
RC1: Retail and Commercial Centres	The Plan identifies the following Centres: • RC1.1 Bargoed Principal Town Centre • RC1.2 Ystrad Mynach Principal Town Centre • RC1.3 Blackwood Principal Town Centre • RC1.4 Risca & Pontymister Principal Town Centre • RC1.5 Caerphilly Principal Town Centre • RC1.6 Rhymney Local Centre • RC1.7 Nelson Local Centre • RC1.8 Newbridge Local Centre • RC1.9 Bedwas Local Centre	No Likely Significant Effects. Screened out. This policy identifies existing retail and commercial centres within the plan area. It does not allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

RC2: Development in Retail and Commercial Centres	Proposals that enhance the vitality, viability and attractiveness of retail and commercial centres will be supported. Proposals involving the change of use at ground floor level from A1 (retail) will only be permitted where the proposal would: • Support the vitality and viability of the centre; • Be compatible with surrounding land uses and the commercial character of the centre; • Not result in adverse amenity impacts; and • Provide an active frontage. Residential and other complementary town centre uses above ground floor level will be supported, provided they do not result in unacceptable impacts on the operation of ground floor uses or the amenity of existing and/or proposed occupants.	No Likely Significant Effects. Screened out. This is a development management policy that sets out key development criteria for development in retail and commercial centres. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
RC3: Out of Town Retailing	Existing out of town retail areas have been identified at the following locations: • RC3.1 Gallagher Retail Park, Caerphilly; • RC3.2 Blackwood Gate Retail Park; • RC3.3 Castle View Retail Park Proposals for class A1, A2 or A3 uses on new sites or existing out of town locations, including changes of use, extensions, the merger or subdivision of existing units or amendments to existing planning conditions relating to the sale of goods will only be permitted where either: • It can be demonstrated that there is an additional need for the proposal which cannot be provided within an existing retail and commercial centre; and • The proposal would not either individually, or cumulatively with other recent or proposed consented developments, have an unacceptable impact on the trade, turnover, vitality and viability of the retail and commercial centres. Or: • The proposal would serve local needs in a neighbourhood or settlement outside of the retail and commercial centre hierarchy.	No Likely Significant Effects. Screened out. This is a development management policy that identifies out of town retail areas and sets out key development criteria for out-of-town retailing development. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

RC4: Caerffili Town 2035	Land is allocated for the following regeneration opportunities: • RC4.1 Land next to Cardiff Road (opposite Caerphilly Castle) - mix of commercial uses and housing; • RC4.2 Pentrebanne Street – mix of commercial uses and housing; • RC4.3 Caerphilly Transport Interchange - railway station, bus station and supporting infrastructure.	Likely Significant Effects. Screened In. This policy allocates specific sites for development. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.
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CF1: Community and Social Facilities	The following locations are identified for community and social facilities:			
		Site	Settlement	Facility
	CF1.1	Land north of Carno Street	Rhymney	Education
	CF1.2	Land at Heolddu	Bargoed	Education /Leisure
	CF1.3	Land at Oakfield Street	Ystrad Mynach	Health/ Education/ Leisure
	CF1.4	Former Pontllanfraith School	Blackwood	Health/ Police
	CF1.5	Land at Pantysgawen Farm	Oakdale and Croespenmaen	Health
	CF1.6	Land at Abertridwr Park	Abertridwr	Health/Leisure
Likely Significant Effects. Screened In. This policy allocates specific sites for development. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.				

CF2: Protection and Enhancement of Community and Social Facilities	Proposals for new community facilities or proposals which seek to retain, enhance or maintain existing community facilities will be supported. This includes the provision of multi-use community facilities, including the co-location of healthcare, schools, libraries and leisure facilities. Proposals which would adversely affect or result in the loss of existing or proposed social and community facilities will not be permitted, except where: a. A replacement facility of equivalent community benefit is provided within the community at a sustainable, easily accessible, alternative location; or b. It can be demonstrated that the existing facility is no longer required for the current use, or any other social and community uses; or c. It is no longer economically viable, feasible or practicable to retain the building or site for alternative community uses; and d. All reasonable efforts have been made to retain the facility, including evidence to confirm that the property or site has been actively and proactively marketed for a minimum 6-month period with reasonable commercial terms, and that there is no realistic interest in its retention for the current use or an alternative community use.	No Likely Significant Effects. Screened out. This is a development management policy that supports the development of new community facilities and sets out conditions that must be met by development that results in the loss or adverse impact on existing facilities. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
LE1: Open Space and Leisure Facilities in New Housing	All housing developments of 10 units or more or greater than 0.3ha in size, should provide leisure facilities to meet the Fields in Trust Standards as part of the proposed development. This provision should be delivered on-site where possible. Where provision on-site is not possible, off-site provision, or a contribution towards the appropriate upgrading of an existing facility, may be appropriate where: a. The location of the provision is within reasonable walking distance of the site; and b. The level of provision is suitable for the size of the development.	No Likely Significant Effects. Screened out. This is a development management policy sets out key criteria for the provision of open space and leisure facilities. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

LE2: Protection of Open Space	Development proposals resulting in the loss, reduction, or deterioration of existing open space will only be permitted where it can be demonstrated that: a. The amount of open space remaining in the neighbourhood would still be adequate to serve local needs; and b. The open space does not have significant amenity value as part of the design and layout of the area; or c. Equivalent or better-quality replacement open space, in terms of size, function, accessibility and environmental value, is provided in a suitable location to serve the same community.	No Likely Significant Effects. Screened out. This is a development management policy that sets out conditions that must be met by development that results in the loss or adverse impact on existing open space. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
LE3: Protection of Formal Leisure Facilities	Proposals which would adversely affect or result in the loss of existing or proposed recreation or leisure facilities will not be permitted, except where: a. A replacement facility of equivalent community benefit is provided by the developer within the community at a sustainable, easily accessible, alternative location; or b. It can be demonstrated that the existing facility is no longer required for the current or any other recreation or leisure use; or c. There is an excess of such provision in the area, and the loss of the facility would not result in a deficit in provision.	No Likely Significant Effects. Screened out. This is a development management policy that sets out conditions that must be met by development that results in the loss or adverse impact on existing leisure facilities. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

LE4: Protection of Public Parks, Gardens and Formal Open Space	Policy LE4 protects identified public parks, gardens and areas of formal open space.	No Likely Significant Effects. Screened out. This policy protects existing open space and does not allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
LE5: Protection of Country Parks	Country parks that contribute to the Valleys Regional Park are protected at the following locations: • LE5.1 Bryn Bach Park, Rhymney/Tredegar • LE5.2 Parc Cwm Darran, Deri • LE5.3 Parc Coetir Bargod, Bargoed • LE5.4 Parc Penallta, Ystrad Mynach • LE5.5 Penyfan Pond, Croespenmaen • LE5.6 Sirhowy Valley Country Park, Ynysddu/Crosskeys	No Likely Significant Effects. Screened out. This policy protects existing open space and does not allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

LE6: Former Markham Colliery	LE6.1 Land is allocated for a mixed-use scheme incorporating leisure, renewable energy and rural skills uses.	Likely Significant Effects. Screened In. This policy allocates land for a mixed use scheme. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.
SP12: Managing Employment Growth	In accordance with Policy SP1 and in order to meet the requirement of 40.3ha of employment, a range of sites are allocated and protected for class B use, to be categorised as follows: a. Business parks; b. Primary employment sites; c. Secondary employment sites.	Likely Significant Effects. Screened In. This policy allocates specific sites for development. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.

EM1: Allocated Employment Sites	The following sites are allocated for class B use, in accordance with their respective designations as set out in Policy SP12: <table><tr><th>Site Ref</th><th>Site Name</th><th>Settlement</th><th>Size (Ha)</th><th>Type</th></tr><tr><td>EM1.1</td><td>Heads of the Valleys Industrial Estate</td><td>Rhymney</td><td>5.2</td><td>Primary site</td></tr><tr><td>EM1.2</td><td>Land at Ty Du</td><td>Nelson</td><td>2.8</td><td>Business park</td></tr><tr><td>EM1.3</td><td>Tredomen Extension</td><td>Ystrad Mynach</td><td>4.2</td><td>Business park</td></tr><tr><td>EM1.4</td><td>Plateau 1, Oakdale Business Park</td><td>Oakdale</td><td>17.8</td><td>Primary site</td></tr><tr><td>EM1.5</td><td>Plateau 2, Oakdale Business Park</td><td>Oakdale</td><td>7.0</td><td>Primary site</td></tr><tr><td>EM1.6</td><td>Plateau 4, Oakdale Business Park</td><td>Oakdale</td><td>2.0</td><td>Primary site</td></tr><tr><td>EM1.7</td><td>Land at Trecenydd Industrial Estate</td><td>Caerphilly</td><td>1.3</td><td>Secondary site</td></tr></table> <i>Additional sites not counting towards the employment land supply</i> <table><tr><td>EM1.8</td><td>Hawtin Park North</td><td>Pontllanfraith</td><td>4.5</td><td>Primary site</td></tr></table>	Site Ref	Site Name	Settlement	Size (Ha)	Type	EM1.1	Heads of the Valleys Industrial Estate	Rhymney	5.2	Primary site	EM1.2	Land at Ty Du	Nelson	2.8	Business park	EM1.3	Tredomen Extension	Ystrad Mynach	4.2	Business park	EM1.4	Plateau 1, Oakdale Business Park	Oakdale	17.8	Primary site	EM1.5	Plateau 2, Oakdale Business Park	Oakdale	7.0	Primary site	EM1.6	Plateau 4, Oakdale Business Park	Oakdale	2.0	Primary site	EM1.7	Land at Trecenydd Industrial Estate	Caerphilly	1.3	Secondary site	EM1.8	Hawtin Park North	Pontllanfraith	4.5	Primary site	Likely Significant Effects. Screened In. This policy allocates specific sites for development. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.
Site Ref	Site Name	Settlement	Size (Ha)	Type																																											
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EM2: Safeguarded Employment Sites	This policy safeguards a number of existing sites for class B use, in accordance with their respective designations as set out in Policy SP12.	No Likely Significant Effects. Screened out. This policy safeguards existing employment sites and does not allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.																																													

EM3: Use Class Restrictions – Business and Industry	Proposals will be subject to the following restrictions: a. On sites identified as business parks, proposals will only be permitted if they are: i. Within use classes B1 or B8; or ii. To provide an ancillary facility or service to the primary employment use. b. On sites identified as primary employment sites, proposals will only be permitted if they are: i. Within use classes B1, B2 or B8; or ii. An appropriate 'unique use'; or iii. To provide an ancillary facility or service to the primary employment use. c. On sites identified as secondary employment sites, proposals will only be permitted if they are: i. Within use classes B1, B2 or B8; or ii. An appropriate 'unique use'; or iii. To provide an ancillary facility or service to the primary employment use; or iv. An acceptable commercial service unrelated to any class B use.	No Likely Significant Effects. Screened out. This is a development management policy that sets out which use classes will be permitted within different employment sites. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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EM4: Alternative Uses on Allocated/Safe guarded Employment Sites	Proposals for uses outside the range of those considered permissible under Policy EM3 will be required to demonstrate the following: a. That the proposal would have a significant community benefit which would outweigh the impact of the site or premises in question, or part thereof, being utilised for an alternative use; and b. That the site or premises in question, or part thereof, is no longer suitable or capable of being utilised for its identified use, having been proactively marketed for such a use for a reasonable period at a market rate as supported through a documented, formal marketing campaign undertaken by a suitably qualified and experienced commercial property agent and/or valuer and that, consequently, it is considered unlikely to come forward for its identified use. The assessment of proposals against the provisions of this policy will, where relevant, be subject to the application of Future Wales Policy 6 - Town Centre First.	No Likely Significant Effects. Screened out. This is a development management policy that sets out conditions required for development not set out in policy EM3 will be permitted within allocated and safeguarded employment sites. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TM1: Managing Tourism Growth	The Council will seek to expand and enhance sustainable tourism in the County Borough through: a. Facilitating the development of sustainable visitor attractions and events; b. Facilitating the development of visitor accommodation in appropriate locations; c. Improving accessibility to visitor attractions and events through maximising sustainable transport and active travel; and d. Protecting and enhancing the County Borough's natural and historic assets that give the County Borough its unique identity.	No Likely Significant Effects. Screened out. This policy seeks to support sustainable tourism. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

TM2: Tourist and Visitor Economy Development	Development proposals that support and enhance the County Borough's tourist and visitor economy will be permitted where: a. The proposals promote sustainable forms of tourism; b. The proposals do not prejudice regeneration proposals or existing tourist facilities; c. The proposals do not result in unacceptable environmental and landscape impacts; d. The proposals do not adversely impact surrounding land uses.	No Likely Significant Effects. Screened out. This policy sets out criteria for the development of tourism facilities. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
TM3: Protection of Existing Tourism Facilities	Proposals that would result in the loss, or reduction in scale, of an existing tourist facility will only be permitted where: a. The loss would not adversely affect the range and quality of tourism facilities available within the locality and the County Borough; and b. It can be demonstrated that the facility is no longer suitable or financially viable and could not be expected to become financially viable for tourism use.	No Likely Significant Effects. Screened out. This is a development management policy that sets out conditions required for development resulting in loss or reduction of tourism facilities. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

TM4: Protection of Significant Tourist Assets	The following significant tourist assets are identified to protect their tourism use and proposals for their enhancement will be supported: • TM4.1 Cwmcarn Forest • TM4.2 Caerphilly Castle	No Likely Significant Effects. Screened out. This policy identifies existing tourism assets to be protected for this use. It does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
DI1: Digital Infrastructure	Proposals for telecommunications and digital technology infrastructure will be considered in light of technical and operational requirements and permitted where: a. The development contributes towards the objectives of future proofing development and regeneration proposals or forms part of the planned development of a wider network; and b. The development incorporates all reasonable measures to minimise any significant adverse impact due to the siting and external appearance of the apparatus, and the design minimises impact caused by its visual appearance; and c. There would be no significant adverse effect on natural heritage, the historic environment, or amenity of neighbouring residents; and d. The application is accompanied by evidence of compliance with government guidelines on health impacts of telecommunications infrastructure.	No Likely Significant Effects. Screened out. This is a development management policy that sets out criteria for the development of digital infrastructure. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

EN1: Renewable Energy Generation	Development proposals for renewable and low carbon energy development, including associated infrastructure, will be permitted where: - It has been demonstrated that a less sensitive or viable alternative site is not available; - Grid and off-grid connection opportunities have been fully explored and optimised; - The proposal would not give rise to unacceptable cumulative impacts when considered alongside existing or consented developments; - There would be no unacceptable adverse impacts on landscape character, or the distinct identity of the County Borough; - Existing features of biodiversity are maintained, with a net benefit for biodiversity secured wherever possible; - Residential amenity would be protected, with no unacceptable impacts arising from noise, dust, odour, traffic, or other disturbances across all phases of the development; - Provision is made for the decommissioning, removal of infrastructure, and restoration of the site to an agreed standard at the end of its operational life; - The overall benefits of the proposal, including environmental, economic, social, and community benefits, clearly outweigh any residual adverse impacts.	No Likely Significant Effects. Screened out. This is a development management policy that sets out criteria for the development of renewable energy generation infrastructure. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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EN2: Renewable Energy Generation on Large Sites	All new residential development for 100 or more residential units or new development with a total floorspace of 1000 sq.m. or more will be required to submit an Energy Report in order to determine the feasibility and viability of incorporating renewable energy generation, district heating networks and/or on-site zero / low carbon technology (including microgeneration technologies) within the development.	No Likely Significant Effects. Screened out. This is a development management policy that requires energy reports for larger developments. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
MN1: Minerals	The Council will contribute to the demand for a continuous supply of minerals by: a. Safeguarding known resources of sand and gravel; and crushed rock; b. Maintaining a minimum 10-year land bank of permitted aggregate reserves throughout the plan period; c. Encouraging the efficient and appropriate use of high-quality minerals, safeguarding minerals infrastructure and maximising the potential for the use of secondary and recycled aggregates as an alternative to primary land won resources.	No Likely Significant Effects. Screened out. This is a development management policy that sets out how the council will ensure minerals supply. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

MN2: Sustainable Development of Mineral Resources	The extraction of mineral resources will be permitted where such proposals satisfy the following criteria: - It can be demonstrated that extraction is required to meet national, regional or local need, and that such a need cannot be met from secondary or recycled materials or existing reserves; - The proposed end use is appropriate and represents an efficient and sustainable utilisation of the resource; - The proposal would not cause demonstrable harm to residential amenity, particularly with regard to access, traffic generation, noise, vibration, dust, air quality and odour; - The proposal would not result in significant adverse impacts in terms of the following: - public health; - the landscape, natural heritage, and the cultural and historic environments; - the quality and quantity of controlled waters, and the existing water and sewerage infrastructure; - agricultural interests; - subsidence and ground instability. - Opportunities for the re-use and/or recycling of mineral waste would be maximised; - Extracted minerals would be transported by rail, wherever feasible; and - Appropriate restoration and aftercare proposals have been submitted, including post-closure site management.	No Likely Significant Effects. Screened out. This is a development management policy that sets out criteria for the extraction of mineral resources. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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MN3: Safeguarding Areas	The following areas are identified as being safeguarded for the winning and working of aggregates, as specified: a. Category 1 Safeguarding Areas: i. Sand and gravel; ii. High specification aggregate – sandstone; iii. High specification aggregate – carboniferous limestone b. Category 2 Safeguarding Areas: iv. Sand and gravel; v. Sandstone; vi. Limestone	No Likely Significant Effects. Screened out. This policy safeguards certain areas for winning and working aggregates. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
MN4: Development in Safeguarding Areas	Development proposals which may impact on minerals safeguarding areas will be considered against the following requirements, as applicable: a. Proposals for permanent uses within identified safeguarding areas will not be approved unless: i. It can be demonstrated that the mineral is no longer of any value or potential value; or ii. The mineral can be extracted satisfactorily prior to the development taking place; or iii. There is an overriding need for the development; or iv. The proposal comprises infill development within a built-up area, householder development, or an extension to an existing building; b. Proposals for temporary uses within identified safeguarding areas will not be approved unless: i. They can be commenced and completed; and ii. The site restored to a condition that does not inhibit mineral extraction; within the timescale in which the resource is likely to be required.	No Likely Significant Effects. Screened out. This is a development management policy that sets out criteria for any development within minerals safeguarding areas. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

MN5: Buffer Zones	Proposals for the winning and working of minerals, and sensitive uses involving the occupation by people on a regular basis, will not be permitted within the following minerals site buffer zones: • MN5.1 Bryn Quarry – active • MN5.2 Gelligaer Quarry - active • MN5.3 Caerllwyn Quarry – dormant • MN5.4 Hafod Fach Quarry – active • MN5.5 Pontymister Quarry – dormant • MN5.6 Machen Quarry – active • MN5.7 Cefn Onn Quarry – dormant • MN5.8 Cwmleyshon Quarry – inactive • MN5.9 Blaengwynlais Quarry – inactive	No Likely Significant Effects. Screened out. This is a development management policy that sets out buffer zones around existing minerals sites. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
MN6: Inactive Sites	Measures to prevent further mineral working and, where appropriate, to consider restoration and landscaping works, will be considered at the following inactive sites: • MN6.1 Caerllwyn Quarry • MN6.2 Cefn Onn Quarry • MN6.3 Pontymister Quarry	No Likely Significant Effects. Screened out. This policy seeks to avoid mineral working at existing inactive sites. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

WM1: Sustainable Waste Management	To facilitate the delivery of sustainable management of waste the Plan will: - Ensure that waste management proposals conform to the principles of the waste hierarchy supporting those that move waste up the hierarchy; - Support an integrated and adequate network of waste management installations that has regard to the nearest appropriate installation concept and self-sufficiency principles where necessary; - Consider in-building waste management treatment facilities to be acceptable in principle on sites allocated and safeguarded for class B2 use, subject to Policy WM2 and other, relevant planning considerations; and - Support the circular economy by encouraging the minimisation of the production of waste and the use of reused and recycled materials in the design, construction and demolition stages of development.	No Likely Significant Effects. Screened out. This policy sets out how sustainable management of waste will be attained. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
WM2: Waste Management Facilities – Employment Sites	Sites allocated or safeguarded as either primary or secondary employment sites are identified as being suitable, in principle, for new in-building waste management facilities. Proposals for such uses must: - Comply with the provisions of Policy WM3; and - Demonstrate that they do not conflict with existing, neighbouring uses, or will not prejudice the development of the remainder of such sites for their primary, identified purpose.	No Likely Significant Effects. Screened out. This policy sets out waste management criteria for employment sites. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

WM3: Waste Management Facilities	Proposals for new waste treatment facilities will only be permitted where all of the following criteria are satisfied: - There is an identified need; - They accord with the principles of the waste hierarchy, and the Waste Framework Directive; - They would not have a significant adverse impact on amenity or the environment; - They provide for the comprehensive restoration and aftercare of the site, where relevant and appropriate; and - A waste planning assessment has been undertaken.	No Likely Significant Effects. Screened out. This is a development management policy that sets out criteria for the development of waste treatment facilities. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
LS1: Special Landscape Areas (SLAs)	The following areas are designated as Special Landscape Areas: - LS1.1 Upper Rhymney Valley - LS1.2 Gelligaer - LS1.3 Mynydd Eglwysilan - LS1.4 North Caerphilly - LS1.5 South Caerphilly - LS1.6 Mynyddislwyn Relevant proposals within designated Special Landscape Areas will only be permitted where they meet the following criteria: - The proposal must conserve or enhance the distinctive character and qualities of the SLA. - The design must respect the local vernacular in terms of form, materials, and detailing, and sensitively integrate the development into the surrounding landscape.	No Likely Significant Effects. Screened out. This is a development management policy that designates special landscape areas and sets out criteria for development within them. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

LS2: Visually Important Local Landscapes (VILLs)	The following areas are designated as Visually Important Local Landscape (VILLs): • LS2.1 Northern Rhymney Valley • LS2.2 Manmoel • LS2.3 Abercarn • LS2.4 Rudry Relevant proposals within designated Visually Important Local Landscapes will only be permitted where they maintain or enhance the distinctive visual and sensory landscape features or characteristics of the VILL.	No Likely Significant Effects. Screened out. This is a development management policy that designates VILLs and sets out criteria for development within them. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
LS3: Green Wedges	Green Wedges are identified to prevent the coalescence of settlements and to maintain the openness of the land.	No Likely Significant Effects. Screened out. This policy identifies and protects green wedges between settlements. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

NA1: Local Sites for Nature Conservation	The following areas are designated for their nature conservation value as: • NA1.1: Sites of Importance for Nature Conservation (SINC) • NA1.2: Local Nature Reserves (LNR) • NA1.3: Regionally Important Geodiversity Sites (RIGS) A full list of these site designations is available in Appendix 9.	No Likely Significant Effects. Screened out. This is a development management policy that designates local sites for nature conservation. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
NA2: Development Affecting Local Sites for Nature Conservation	Development that would have an adverse impact upon designated Local Sites for Nature Conservation will not be permitted except where: a. It can be clearly demonstrated that the benefits of the development outweigh the potential adverse impact; or b. Any loss of existing features can be mitigated against, and the compensatory measures provided on site where possible to deliver a net benefit for biodiversity.	No Likely Significant Effects. Screened out. This policy protects local sites for nature conservation. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

NA3: Trees, Woodlands, and Hedgerows	Development proposals on sites that contain, or are bordered by, trees, woodlands and hedgerows, will be assessed in line with the appropriate British Standard and will only be permitted where: - Development proposals have made all reasonable efforts to retain, protect and integrate trees, woodlands or hedgerows present within the development site. - Where arboricultural surveys and Arboricultural Implication Assessments are required, they are submitted as part of a planning application and include all mitigation, compensation, enhancement or management requirements necessary to address the impacts of the proposed development. - The design of the proposed development protects the root systems of retained landscape features, and the developer adequately protects them for the duration of all development activity on site. - Where trees, woodlands or hedgerows are removed, suitable replacement provision is made as part of the proposed development.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for development to protect trees, woodland and hedgerows on development sites. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
GI1: Green and Blue Infrastructure	Development proposals will be expected to maintain, and enhance green and blue infrastructure networks and will only be permitted where they: - Maintain and integrate existing green and blue infrastructure assets through an appropriate design and site layout. - Enhance the quality, extent, connectivity and multifunctionality of the green and blue infrastructure network.	No Likely Significant Effects. Screened out. This is a development management policy that set criteria to support and enhance green and blue infrastructure. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

EP1: Public Health and Environmental Protection	Development will only be permitted where it can be demonstrated that it will not introduce, or exacerbate an unacceptable risk of harm to public health or the environment due to: a. Water, air, noise, dust or light, pollution; b. Invasive and non-native species; c. Land contamination; d. Land instability; e. Waste management and disposal; f. Any other significant risk to public health and/or safety.	No Likely Significant Effects. Screened out. This is a development management policy that requires development to not harm public health or the environment in several ways. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
EP2: Critical Drainage Areas	The following areas are designated as critical drainage areas: • EP2.1: Rhymney River, Upper Reach • EP2.2: The Nant Tywn Harris Catchment • EP2.3: Porset Brook Catchment Development proposals that are likely to impact upon these areas will require a Flood Consequence Assessment (FCA) which clearly addresses any potential risks and impacts.	No Likely Significant Effects. Screened out. This is a development management policy that requires flood assessments for development in certain areas. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

EP3: Skies Sensitive Lighting Dark and	Development proposals involving external artificial lighting must be accompanied by appropriate lighting details and, where proportionate, a lighting strategy. Proposals will be expected to demonstrate that: a. Lighting is essential for the proposed development; b. The type, intensity, and extent of lighting is the minimum necessary; c. Light spillage beyond the site boundary is minimised; d. Glare is prevented and the amenity of neighbouring uses is respected; e. The visual and landscape character of both the built and natural environment is preserved; f. Dark skies are maintained in open countryside locations; g. Adverse impacts on biodiversity and ecological connectivity are avoided or minimised; and h. Cumulative and in-combination lighting effects are assessed and mitigated.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for developments involving external lighting. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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RU1: Conversion of Buildings in the Countryside	The conversion of a building outside settlement boundaries will only be permitted where: - The proposed use, scale, form, siting, design and materials are appropriate for its context; and - The proposals meet all of the following criteria: - For conversions to residential use, it can be demonstrated that the building has been appropriately marketed, at an appropriate and reasonable price, for alternative uses and alternative uses have been found to be unviable; and - For buildings that have been extended or constructed as part of agricultural permitted development rights, it can be demonstrated that the buildings have genuinely been used for the agricultural purposes for which they were constructed for an extended period. - Buildings erected, altered or reconstructed after 1947 will not be suitable for conversion for residential purposes; - The original building is not makeshift in nature and is of permanent, substantial construction; - It has been evidenced that the building is structurally sound and capable of conversion or rehabilitation without major alteration or reconstruction; - The building can accommodate the proposed use without materially changing its existing character; - The development does not result in the domestication or urbanisation of an otherwise rural setting or the unacceptable loss of undeveloped countryside; - It can be demonstrated that the proposed development would not give rise to a demand for additional or replacement buildings which would have an unacceptable impact on the character and appearance of the area.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for the conversion of buildings outside of settlement boundaries. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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RU2: Extension of Buildings in the Countryside	The extension of a building outside settlement boundaries will only be permitted where: - The proposed use, scale, form, siting, design and materials are appropriate for its context; and - The proposal meets the following criteria: - The extension does not result in the loss of undeveloped countryside; and - The extension does not result in the domestication or urbanisation of an otherwise rural setting.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for the extension of buildings outside of settlement boundaries. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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RU3: Replacement Dwellings in the Countryside	The replacement of a dwelling outside settlement boundaries will only be permitted where: a. The proposed use, scale, form, siting, design and materials are appropriate for its context b. The proposal meets all of the following criteria: i. The existing building does not make a positive contribution to the rural character of the local area; ii. The lawful use of the existing building has not been abandoned; iii. They are designed in accordance with a recognised sustainable construction standard (i.e. BREEAM Excellent or Passivhaus); iv. It has been evidenced that the existing building is structurally unsound and not capable of rehabilitation or conversion to an alternative use without major alteration or rebuilding; v. The use cannot practicably continue to be accommodated in the existing building and all practical and/or appropriate alternatives for reuse have been ruled out; vi. The replacement dwelling should be of a similar scale to the existing building; vii. It shall be of the highest design quality, having regard for the character of the site and the wider area; viii. The proposal does not result in an extension to the existing residential curtilage.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for the replacement of existing buildings outside of settlement boundaries. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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RU4: Rural Enterprise and Diversification	Development proposals for rural enterprise and diversification schemes will be permitted where: a. They are consistent in scale and compatible with their rural location, including the retention and enhancement of environmental features. b. In cases where buildings are required to deliver the scheme, existing buildings are reused where reasonably practicable. c. They will be complementary to, and not prejudice, the operation of the existing business.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for the development of rural enterprise and diversification schemes. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
HE1: The Historic Environment	The historic environment of the County Borough should be protected, conserved, enhanced and sustainably managed as a key contributor to sustainable development, placemaking and climate resilience.	No Likely Significant Effects. Screened out. This policy seeks to preserve the historic environment. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.

HE2: Heritage-led Regeneration and Reuse	Development proposals that involve the conservation, repair or reuse of historic assets, including as part of regeneration schemes, will be supported where they: a. Retain and enhance the historic character and significance of the building or site; b. Contribute to town centre vitality, community well-being or economic development; c. Support high-quality design that respects the local context and townscape; d. Deliver environmental and social sustainability, including reuse of embodied carbon; and e. Involve community or cultural uses, enterprise or tourism that promote public engagement with heritage. Flexible and innovative approaches to the adaptive reuse of historic buildings, especially those at risk or underused, will be encouraged where they secure long-term sustainability.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for the conservation, repair and reuse of historic assets. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.								
HE3: Heritage-led Regeneration Opportunities	Land is identified for the following heritage-led regeneration opportunities: <table><tr><td>HE3.1</td><td>Land at Former Penallta Colliery</td></tr><tr><td>Land use</td><td>Housing/Retail/Leisure</td></tr><tr><td>HE3.2</td><td>Land at Former Navigation Colliery</td></tr><tr><td>Land use</td><td>Housing/Employment</td></tr></table> Development within the identified sites will only be permitted where it forms an integral part of, and secures the conservation, repair and viable long-term reuse of, the listed buildings, with delivery assured through appropriate phasing and planning obligations.	HE3.1	Land at Former Penallta Colliery	Land use	Housing/Retail/Leisure	HE3.2	Land at Former Navigation Colliery	Land use	Housing/Employment	Likely Significant Effects. Screened In. This policy identifies regeneration opportunities including housing provision. This policy may have likely significant effects via the following impact pathways: • Loss of functionally linked land • Recreational pressure • Air quality • Water quality • Water quantity level & flow Therefore, this policy is screened in for further assessment.
HE3.1	Land at Former Penallta Colliery									
Land use	Housing/Retail/Leisure									
HE3.2	Land at Former Navigation Colliery									
Land use	Housing/Employment									

HE4: Protection and Enhancement of Designated Historic Assets	Development proposals that affect designated historic assets or their settings will only be permitted where they: a. Preserve or enhance the significance, character and appearance of the asset or historic area; b. Are based on a clear understanding of the asset's significance, informed by proportionate heritage impact assessment; c. Contribute positively to local identity, placemaking and environmental sustainability.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for the conversion of buildings outside of settlement boundaries. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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HE5: Buildings of Special Local Interest	Development proposals affecting Buildings of Special Local Interest or their settings will be required to: a. Preserve or enhance the building's architectural, historic or communal significance and its contribution to local character, identity and sense of place; b. Demonstrate a clear and proportionate understanding of the building's local heritage value and its role in placemaking, including its relationship to surrounding streets, spaces and uses; c. Avoid demolition, substantial alteration or loss of historic fabric unless it can be clearly justified through evidence and supported by public benefits that contribute positively to placemaking outcomes in accordance with Policy SP6; and d. Where change is justified, proposals should incorporate high quality context responsive design and materials that respect the building's character and support its sustainable repair, adaptation and reuse. Proposals that would result in unjustified harm to a Building of Special Local Interest and that fail to demonstrate a positive contribution to placemaking, and community well-being will not be permitted.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for development proposals that may impact buildings of special local interest. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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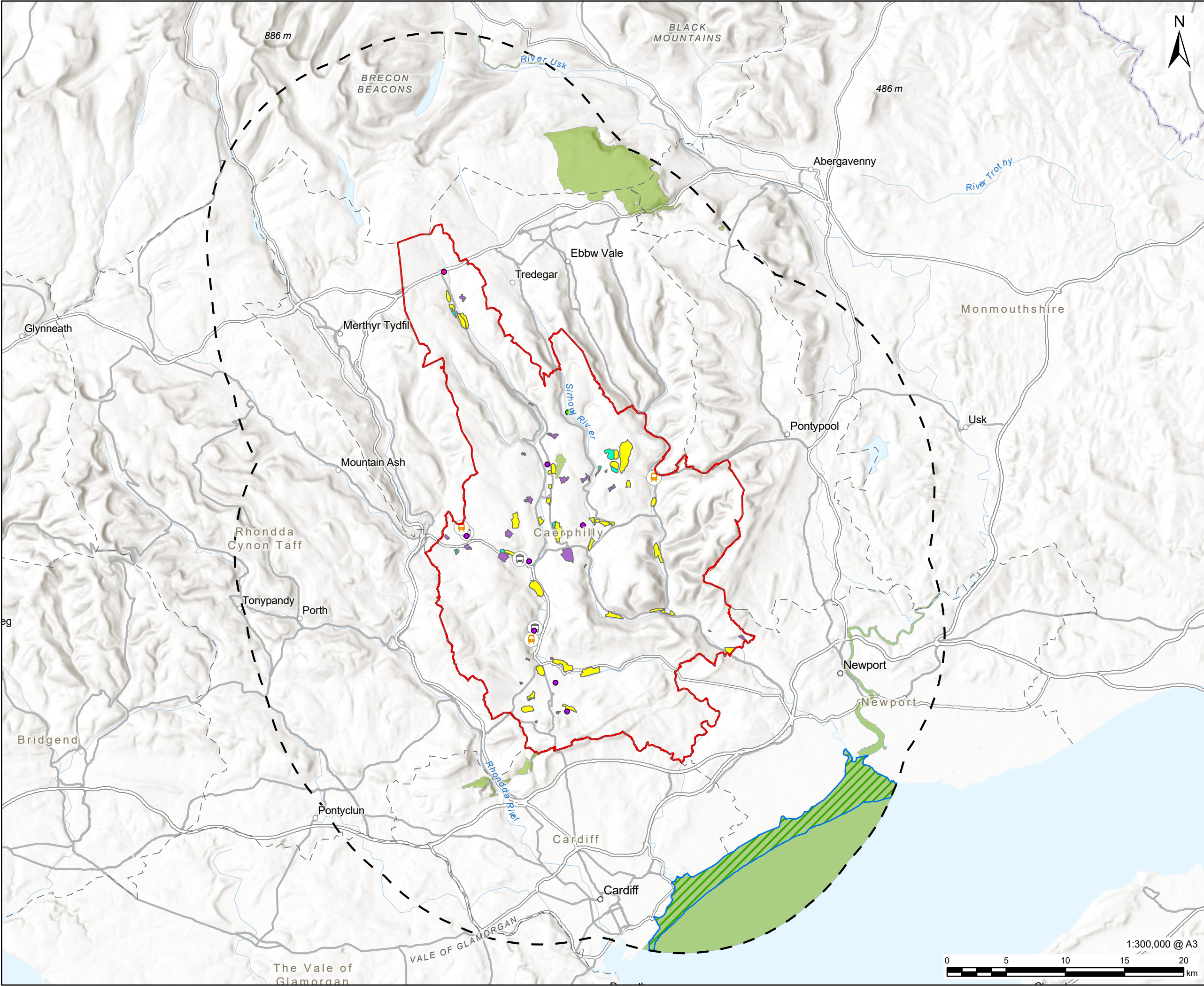
HE6: Enabling Development	Enabling development that would otherwise conflict with planning policies will only be permitted where it can be clearly demonstrated that it is the only viable means of securing the long-term conservation of a designated historic asset, and where the public benefit decisively outweighs the harm. Proposals will be required to demonstrate that: - The scheme will secure the long-term future, repair and conservation of the historic asset and its setting; - The amount of enabling development is the minimum necessary to achieve that purpose; - The form, scale and design of the enabling development is sensitive to the historic asset, its setting and wider environment; - A thorough and transparent financial appraisal, independently verified where necessary, has been provided to evidence the conservation deficit and justify the amount of enabling development; - All reasonable alternative solutions for the asset's conservation (including grant aid, charitable or community ownership, or a less harmful scheme) have been fully considered; and - The overall benefits of securing the historic asset's future clearly outweigh the harm arising from the enabling development.	No Likely Significant Effects. Screened out. This is a development management policy that sets criteria for the conservation of designated historic assets, where this requires deviation from other policies detailed in this plan. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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HE7: Non-Designated Archaeological Remains	Development proposals that affect non-designated archaeological remains will not be permitted unless, where informed by the significance of the remains and the scale of impact, they: a. Demonstrate that any harm to archaeological remains is minimised and justified; b. Are informed by an appropriate desk-based assessment and, where necessary, field evaluation at a proportionate level to the significance of the remains; or c. Preserve archaeological remains in situ where justified by their significance; or, where preservation in situ is not justified, secure appropriate archaeological investigation, recording, analysis, archiving and public dissemination of results.	No Likely Significant Effects. Screened out. This is a development management policy that requires development to avoid archaeological remains except under certain conditions. This policy does not specifically allocate sites for development. Therefore, no impact pathways exist to Habitats Sites. Therefore, this policy is screened out for further assessment.
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Table 4. Residential allocations and Gypsy and Traveller Pitch Allocations

Residential allocation	Settlement	Number of dwellings	Nearest Habitat Site
Castle Fields	Rhymney	100	Usk bat sites SAC (7.6km)
Land at Heolddu Grove	Bargoed	55	Aberbargoed Grasslands SAC (0.9km)
Land at Cefn Llwynau Farm	Ystrad Mynach	175	Aberbargoed Grasslands SAC (3.6km)
Land south of A472	Ystrad Mynach	422	Aberbargoed Grasslands SAC (4.7km)
Former DCWW Depot	Nelson	91	Aberbargoed Grasslands SAC (6.3km)
Land at Ty Du Farm	Nelson	150	Aberbargoed Grasslands SAC (5.7km)
Land at Heol y Cefn	Blackwood	200	Aberbargoed Grasslands SAC (<0.1km)
Land at Cwm Gelli Farm	Blackwood	175	Aberbargoed Grasslands SAC (1.1km)
Land at Elm Drive	Risca	132	River Usk SAC (5.4km)
Land at Energlyn	Caerphilly	35	Cardiff Beechwoods (4.7km)

Residential allocation	Settlement	Number of dwellings	Nearest Habitat Site
Welsh Egg Farm	Caerphilly	41	Cardiff Beechwoods (3.6km)
Land at Nant y Calch Farm	Caerphilly	44	Cardiff Beechwoods (2.2km)
Land at Watford Road	Caerphilly	12	Cardiff Beechwoods (1.4km)
Land at Pandy Road (Phase 2)	Bedwas	44	Cardiff Beechwoods (4.8km)
Land at Coed y Brain	Aberbargoed	176	Aberbargoed Grasslands SAC (0.8km)
Bryn Meadows Golf Club	Maesycwmmer	500	Aberbargoed Grasslands SAC (3.6km)
Land at Nant Gau	Oakdale and Croespenmaen	20	Aberbargoed Grasslands SAC (2.1km)
Land east of former Oakdale Golf Club	Oakdale and Croespenmaen	65	Aberbargoed Grasslands SAC (2.6km)
Land at Pantysgawen Farm	Oakdale and Croespenmaen	140	
Land off Pengam Road	Penpedairheol	190	Aberbargoed Grasslands SAC (1.5km)
Land at Former Station House	Rhymney	12 Gypsy/Traveller pitches	Usk bat sites SAC (7.6km)



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PROJECT
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LEGEND

Caerphilly County Borough

Caerphilly County Borough -10km Buffer

Allocated Sites

HO2 Housing Led Regeneration Opportunity

HO8.1 Gypsy And Traveller Allocation

LE5 Mixed Use for Leisure Renewable Energy and Rural Skills Education

TR4 New Railway Station

TR5 New Park and Ride Facility

Safeguarded Employment Site

HO1 Housing Allocation

Allocated Employment Site

Designated Sites within 10km

Ramsar Site

Special Protection Area (SPA)

Special Area of Conservation (SAC)

NOTES

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ISSUE PURPOSE

FINAL PROJECT NUMBER
60803132

FIGURE TITLE
Habitats sites around Caerphilly

FIGURE NUMBER
Fig 1

Prepared for: Caerphilly County Borough Council