

**Dŵr Cymru Welsh Water**

## Pont-y-felin

### Habitats Regulation Assessment (HRA)

Reference: B16789-102503-XX-XX-RP-NA-EI6705

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Pont-y-felin, photo taken by Arup surveyors on behalf of Dŵr Cymru Welsh Water

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**Ove Arup & Partners Limited**

4 Pierhead Street

Capital Waterside

Cardiff




CF10 4QP

United Kingdom

[arup.com](http://arup.com)

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Name		Eleanor Harrison	Nick Mason	Neil Harwood	
Signature					

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# 1. Introduction

## 1.1 Background

Dŵr Cymru Welsh Water (DCWW) are proposing options for Pont-y-felin to address a Nature Based Solution (NBS) for the treatment of Pont-y-felin Lane Combined Storm Overflow (CSO) effluent.

Pont-y-felin Lane CSO is located within New Inn, Pontypool and sits within the Ponthir sewer catchment, and discharges into the Afon Lwyd. Pont-y-felin Lane CSO has been identified as a high spiller (Event Duration Monitoring (EDM) data), with the number of spills in 2021 reaching 129. The CSO discharges intermittently into the environment frequently, primarily due to hydraulic overload during rainfall. An assessment undertaken as part of the Stage 2 Storm Overflow Assessment Framework (SOAF)<sup>1</sup> involved extensive surveys, which identified the asset is impacting on the receiving watercourse, the Afon Lwyd. The Afon Lwyd is designated as a main river (Afon Lwyd – below Mon and Brecon Canal GB109056032911) and is classified under the Water Framework Directive (Water Framework Directive (WFD) Cycle 3, 2021) as moderate quality. The Reasons for Not Achieving Good status (RNAGs) in 2018 were stated to be barriers to fish migration, urbanisation – urban development, sewage discharge (intermittent) and sewage discharge (diffuse).

An optioneering phase was undertaken to shortlist design options for the works looking at reducing the CSO spill frequency and options were considered and screened based on feasibility and information gathered from site investigations. Several options were carried through to modelling, where spill frequency and equivalent storage was calculated to understand the effectiveness of each solution.

The NBS comprising reedbeds and a constructed wetland is considered to be the most appropriate and effective solution to improve water quality. In line with the Stage 2 Storm Overflow Assessment Framework (SOAF)<sup>1</sup> Guidance, the NBS option was found to deliver the highest cost-benefit ratio and also meets the measure of success for SOAF as defined by Ofwat in a way that is affordable (based on budget per m<sup>3</sup> of equivalent storage). This solution also includes additional landscaping opportunities to create a recreational amenity space for the local community (see 2.2 Description of Proposed Works for full breakdown of options).

The proposed works are hereafter referred to as ‘the scheme.’ An Environmental Impact Assessment (EIA) screening opinion request has been undertaken in consultation with Torfaen County Borough Council.

## 1.2 Purpose of this Document

This document has been prepared by Arup on behalf of DCWW in relation to the potential for effects on European Sites as required by Regulation 63(1) of the Habitats Regulations.

## 1.3 Structure of this Report

This report uses the following structure:

- **Section 2** provides information on the proposed works (the ‘project’) including the environmental baseline and a description of the development;
- **Section 3** provides information on the data and methodology used in the assessment;
- **Section 4** provides information on the European Sites that are considered within the assessment;
- **Section 5** provides a screening assessment for the potential pathways for effects; and
- **Section 6** provides conclusions.

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<sup>1</sup> Environment Agency (2018). *Storm Overflow Assessment Framework*. Available at: <https://www.water.org.uk/wp-content/uploads/2018/12/SOAF.pdf>

## 1.4 The HRA Process

Regulation 63 of the Habitats Regulations requires a competent authority, in this case DCWW, to make an 'Appropriate Assessment' of the implications of the plan or project for the site in view of its conservation objectives, before deciding to undertake or give consent for a plan or project which (a) is likely to have a significant effect on a European Site (either alone or in combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site. In light of the conclusions of the assessment, the competent authority may proceed with or consent to the plan or project only after having ascertained that it will not adversely affect the integrity of the European Site.

All plans and projects should identify any possible effects early in the plan/project making process and then either alter the plan/project to avoid them or introduce mitigation measures to the point where no adverse effects remain. The 'competent authority' shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned, and if appropriate having obtained the opinion of the general public.

The assessment of a project under the Habitats Regulations can be split into several sections as shown in Appendix A<sup>2</sup>; however, there are effectively four stages to the assessment as described below.

Stage 1 is the assessment of the likelihood of a plan or project having a significant effect on a European Site or its features. This is the trigger for the need for an Appropriate Assessment as set out in Regulation 63(1). The Appropriate Assessment (Stage 2) is the detailed consideration of the potential effects of the plan or project in relation to the conservation objectives for the European Site(s) to determine if there is likely to be an adverse effect on the integrity of the site (i.e. an effect that would compromise the site meeting its conservation objectives). Providing it can be demonstrated that with appropriate mitigation measures the plan or project would not give rise to an adverse effect on the integrity of a European Site, the plan or project can proceed.

Where this cannot be demonstrated or there is uncertainty, the assessment would then need to consider if there were any other alternatives to the plan or project (Stage 3) that would not give rise to adverse effects on the integrity of the European Site. If there are no alternatives, Stage 4 would then consider if there are any Imperative Reasons of Overriding Public Interest (IROPI), only at this stage can Compensatory Measures be considered. It is very unusual for plans or projects to be considered in Stages 3 or 4.

## 1.5 Consideration of Mitigation

With regards to case law (*Coillte vs People Over Wind*<sup>3</sup>) the inclusion of plainly established and uncontroversial mitigation during Stage 1 is no longer considered appropriate. Mitigation, as considered by the Centre Européen de Coopération Juridique (CECJ) in regard to the case law<sup>3</sup>, is interpreted to mean measures that are intended to avoid or reduce the harmful effects of the envisaged project on the site concerned.

Consequently, any project which identifies an impact on a European Site and where avoidance and mitigation is applicable will need to address these measures during Stage 2 Appropriate Assessment.

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<sup>2</sup> Tyldesley, D. (2011). Assessing Projects Under the Habitats Directive: Guidance for Competent Authorities. Bangor: Countryside Council for Wales.

<sup>3</sup> *People over Wind*, Case C323/17 European Court of Justice, 12th April 2018.

## 2. Project Description

### 2.1 Site Description

The location of the site is shown in Figure 1. The site, Pont-y-felin Lane CSO, is located in New Inn, Pontypool (Ordnance survey Grid Reference: ST3026999067, nearest postcode: NP4 0QF). Pont-y-felin is a popular site of recreation for the local community, comprising an open field bordered with tree lines and scrub. Footpaths tracks and one Public Right of Way (PRoW) are present across the site, with the Afon Lwyd adjacent to the western extent of the site.

The Afon Lwyd is designated as a main river (Afon Lwyd - below Mon and Brecon Canal GB109056032911) and is classified under the Water Framework Directive (Water Framework Directive (WFD) Cycle 3, 2021) as moderate quality. The Reasons for Not Achieving Good status (RNAGs) in 2018 were stated to be barriers to fish migration, urbanisation - urban development, sewage discharge (intermittent) and sewage discharge (diffuse).

The site sits within the Ponthir sewer catchment, and discharges into the Afon Lwyd.

### 2.2 Description of Proposed Works

Various options for reducing CSO spill frequency were considered. An optioneering phase was undertaken to shortlist design options for the works. Various options were considered and screened based on feasibility and survey findings. Several options were carried through to modelling, where spill frequency and equivalent storage was calculated to understand the effectiveness of each solution. The NBS comprising reedbeds and a constructed wetland is considered to be the most appropriate and effective solution to improve water quality (Table 1). In line with the Stage 2 Storm Overflow Assessment Framework (SOAF)<sup>4</sup> Guidance, the NBS option was found to deliver the highest cost-benefit ratio and also meets the measure of success for SOAF as defined by Ofwat in a way that is affordable (based on budget per m<sup>3</sup> of equivalent storage). This solution also includes additional landscaping opportunities to create a recreational amenity space for the local community.

**Table 1. Short Listed Option**

Option	Description	Consideration
Nature Based Solution to treat the majority of the intermittent CSO discharges to an acceptable level	Reed bed and constructed wetland with a screened bypass for exceptional storm events.	<p>The lay of the existing field adjacent to the CSO is favourable to set up a gravity fed NBS system.</p> <p>The option would not impact on the WFD status water quality and will treat the majority of spills.</p>

The solution also aligns well with The Well-being of Future Generations Act 2015 and Sustainable Development Goals. For example, goal 15 life on land, and goal 11 sustainable cities and communities through natural treatment of CSO discharge, which also contributes to carbon sequestration benefits.

### 2.3 Environmental Baseline

Biodiversity records were obtained from Aderyn: The Biodiversity Information and Reporting Database of Local Environmental Records Centres Wales on 9<sup>th</sup> March 2022, with an update desk study undertaken by APEM on 17<sup>th</sup> November 2022. The searches included information on statutory and non-statutory designated

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<sup>4</sup> <https://www.water.org.uk/wp-content/uploads/2018/12/SOAF.pdf>

sites and records of protected, invasive, or otherwise notable species within 2 km of the Site. Only records within the last 10 years were reviewed, given records from before this are considered likely unrepresentative of the current status of the study area.

A Preliminary Ecological Appraisal (PEA) including an Extended Phase I Habitat Survey has been undertaken by Arup Associate Ecologist Dr Pippa Wood (CEcol MCIEEM) and Arup Graduate Ecologist Rosie Seager-Jones (QCIEEM) on 17<sup>th</sup> March 2022<sup>5</sup>. A summary of key findings is presented below.

### 2.3.1 Statutory and Non-Statutory Designated Sites

The site location is in proximity to several designated sites. The statutory international, national, and local designated sites are presented below in Table 2.

**Table 2. Statutory and Non-Statutory Designated Sites**

Designated site	Site description	Distance and direction from Site
<b>International Statutory sites</b>		
Special Area of Conservation (SAC)		
River Usk / Afon Wysg SAC	<p>The River Usk SAC comprises a large linear ecosystem which acts an important wildlife corridor, an essential migration route and key breeding area for a number of nationally and internationally important species.</p> <p>The site is primarily designated for its Annex II species including sea lamprey (<i>Petromyzon marinus</i>), brook lamprey (<i>Lampetra planeri</i>), river lamprey (<i>Lampetra fluviatilis</i>), twaite shad (<i>Alosa fallax</i>), Atlantic salmon (<i>Salmo salar</i>), bullhead (<i>Cottus gobio</i>) and otter (<i>Lutra lutra</i>), with allis shad (<i>Alosa alosa</i>) also present as a qualifying species, though not a primary reason for selection of the site. Habitat comprising water courses of plain to montane levels with the <i>Ranunculum fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation are also noted to be a qualifying feature of the site, though not a primary reason for its selection.</p>	7.20km east
<b>National Statutory sites</b>		
Site of Special Scientific Interest (SSSI)		
Llandegfedd Reservoir SSSI	<p>This reservoir is the largest inland open water habitat in the county and is one of the three regionally important overwintering wildfowl refuges in Wales, further noted for this in the LPD. The site is particularly important for the overall numbers and variety of wintering wildfowl, with large numbers of wigeon (<i>Mareca penelope</i>), pochard (<i>Aythya ferina</i>) and mallard (<i>Anas platyrhynchos</i>). Other notable species include goosander (<i>Mergus merganser</i>), teal (<i>Anas crecca</i>) and goldeneye (<i>Bucephala clangula</i>). The area around the reservoir includes grassland, important for feeding and roosting wildfowl, woodland and scrub.</p>	1.4km east
<b>Non-statutory Designated sites</b>		
Wildlife Site / Sites of Importance for Nature Conservation (SINC; Adopted)		
Pont-y-felin Verge and ditch	<p>The site comprises marshy grassland, neutral grassland and scrub. Quality is good and ditch system around old recham site provides good connectivity for otters.</p>	228m south

<sup>5</sup> Arup.(2022). Pont-y-felin CSO. Preliminary Ecological Appraisal.

Designated site	Site description	Distance and direction from Site
Butcher's Wood	An ancient woodland site retaining a few species from the SINC criteria in 1977.	282m southwest
Pont-y-felin rush pasture	The site comprises rush pasture, woodland with species-poor flora overall but richer along edges. It is adjacent to Afon Llwyd.	402m south
Butcher's Grassland	The site comprises neutral grassland and ancient woodland, considered over-grazed in quality (MG5).	455m west
Craig y Felin Field	The site comprises a grazed meadow; species-rich neutral grassland / marshy Grassland.	540m south
Craig-y-felin Wood	The site comprises partially replanted ancient woodland.	670m south
Newhouse Farm	The site comprises semi-improved neutral grassland, relatively species rich but the sward dominated by grasses. Previous management was a hay cut.	805m east
Coed y Canddo	The site comprises ancient woodland.	820m north
A4042 bank meadow	Unimproved neutral grassland road verge with high invertebrate and botanical interest.	843m south

### 2.3.2 Habitats

Results of the PEA showed 15 pockets of ancient semi-natural woodland within 1km of the site. The closest is located 28m northwest of the site, along the banks of the Afon Llwyd.

The Priority Habitats recorded within 1km of the site include both *Purple moor and rush pasture* (the closest approximately 0.4km south of the site) and *Traditional Orchards* (the closest approximately 0.6km west of the site). Records of surrounding habitats noted to potentially contain Priority Habitats include unimproved acid grassland, marshy grassland, dry acid heath, standing water and acid/neutral scree, all been noted within 2km of the site. Further, semi-natural broadleaved woodland, semi-improved neutral grassland and running water were identified directly adjacent to the site, also noted to potentially contain Priority Habitats.

The habitats summarised below were identified during the Extended Phase 1 habitat survey:

- **A1.1.1 Semi-natural broadleaved woodland-** south-eastern extent of the site, and northern extent along the river.
- **A3.1 Broadleaved parkland/ scattered trees-** along the river, scattered within the field and lining hardstanding.
- **A2.1 Dense scrub-** bordering the northwest of the site, alongside the treeline bordering the Afon Llwyd.
- **B6 Poor semi-improved grassland-** comprised the field covering the majority of the site.
- **G2 Running water-** a stream, a tributary of the Afon Llwyd, running westward along the south of the site, approximately 1.5m wide.
- **J2.3 Hedge with trees – native species-rich (J2.3.1) and species-poor (J2.3.2)-** species rich hedgerow with mature trees bordering the south of the site, and in the northern section of the site. species-poor hedgerow with trees to the east of the site
- **J5 Gravel and hard standing-** access road to the southwest of the site.



### 2.3.3 Protected/Notable Species

The Extended Phase 1 habitat survey identified likely nesting habitat within the woodland, trees and scrub habitats for a range of common woodland bird species.

No evidence of badger (*Meles meles*) was recorded on site during the initial habitat survey or the species specific surveys undertaken on 4th May 2022 and 5th October 2022. However, the habitats present, notably the broadleaved woodland surrounding the site, holds potential to support foraging badger, and sett creation.

Evidence of otter was recorded on site during the habitat survey and Phase 2 otter surveys undertaken on 15th June 2022 and 14th November 2022, with spraints being recorded on the boulders alongside the Afon Lywd. Good potential food availability in the watercourses, and good connectivity demonstrate the high suitability for foraging and commuting otter. No holts were observed on site; however, the woodlands adjacent to the site on the opposite bank of the river are considered less likely to be disturbed by recreational use, thus, are considered suitable to accommodate resting places or otter holts. Rock armour towards the south of the Afon Lywd was identified as offering potential resting sites for otter.

No evidence of dormouse (*Muscardinus avellanarius*) was recorded on site during the initial habitat survey or dormouse specific surveys undertaken between July and November 2022. Further surveys will be undertaken in 2023 to confirm likely absence. Whilst there are areas of habitat on site suitable for dormice, these areas are not considered large enough to support a population. In addition, no records of dormice were returned by the data search within a 2km radius of the site, suggesting it is unlikely the site could be used by a wider population.

Two bat roosts were confirmed in two mature oak trees, one on the northern border and one north of the northern border of the site, by surveys undertaken between June and October 2022. Pipistrelle bats were observed emerging/entering potential roost features on both trees. The exact location of the roost feature(s) on the tree north of the border was not confirmed; however, it was considered likely a cavity within a horizontal branch on the southwest aspect of the tree was being used. The feature on the second tree consisted of a large trunk cavity on the north-eastern aspect of the tree. Several species of bat were recorded on site during activity transects, with the majority being common (*Pipistrellus pipistrellus*) and soprano pipistrelles (*Pipistrellus pygmaeus*). In addition to the records of roosts and bat activity, the tree lines, hedgerows, woodland edges, the Afon Lywd and connectivity to the wider landscape, suggest the site is regularly used by commuting and foraging bats.

The woodland and river edges, scrub and hedgerows on site demonstrate provision of suitable habitat for reptiles. No records of reptiles were returned by the data search within 2km of the site, and no reptiles were recorded during refugia surveys undertaken in 2022. Two further surveys are to be carried out in spring 2023.

Two records of common toad (*Bufo bufo*) were returned by the data search within 2km of the site. The mosaic of terrestrial habitats could hold potential for great crested newt (GCN), palmate or smooth newt, along with suitable habitat for common frogs and toads, notably, the low flow stream on the southern site boundary. The one standing waterbody (a pond) 280m south of the site was assessed as good suitability for GCN by a Habitat Suitability Index assessment; however, an eDNA survey returned a negative result. As such, GCN are considered absent from site.

The mosaic of grassland, scrub, woodland and riparian habitats on site are considered to be suitable to support a range of notable terrestrial and aquatic invertebrates, with good connectivity to the wider landscape. The data searches returned several records of invertebrate species within the search area, including Section 7 (butterfly) species dingy skipper (*Erynnis tages*), and moths, brindled beauty (*Lycia hirtaria*) and small phoenix (*Ecliptopera*). In addition, the Environment (Wales) Act 2016 Section 7 Priority Species brown banded carder bee, has been noted to be present in wider area, as per the Greater Gwent State of Nature report<sup>6</sup>. No records of white-clawed crayfish (*Austropotamobius pallipes*) were returned; however, numerous records within 200m of the site were noted prior to the ten year data cut off.

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<sup>6</sup> Jones S M, Karran A, Bosanquet S, Barter G, Garrett H and Hancocks. 2021. Greater Gwent State of Nature. Produced by the Resilient Greater Gwent Partnership. The exact locations of these records are not provided but represented as grid squares and it is therefore possible that records fall within 2km of the site boundary.

The Afon Lwyd adjacent to the site was considered suitable for a range of common and notable fish species, both migratory, including eel (*Anguilla anguilla*), and resident fish species, including brown trout (*Salmo trutta*).

#### 2.3.4 Invasive species

The Extended Phase 1 Habitat survey identified a stand of three-cornered leek (*Allium triquetrum*) in the south-eastern section of the site, and in the hedgerow further north of the patch. Further, potential montbretia (*Crocsmia crocosmiflora*) was recorded at the eastern boundary of the site, likely associated with the residential buildings in this area. Extensive Japanese knotweed (*Fallopia japonica*) was also discovered across the site, with saplings being recorded in the south-eastern section of the site proximate to the three-cornered leek stand. Further, mature dead stands of Japanese knotweed appeared to be widespread along both banks of the Afon Lwyd, with saplings present in early stages of growth, thus, it is considered likely that the Japanese knotweed will be present extensively across areas of the site during the growing season. A walkover survey undertaken in 2022 by the specialist company Knotweed Control identified the following eight species of invasive non-native species (INNS) within the site boundary:

- Cotoneaster (*Cotoneaster sp.*);
- Japanese knotweed;
- Buddleia (*Buddleja davidii*);
- Russian vine (*Fallopia baldschuanica*);
- Himalayan honeysuckle (*Leycesteria formosa*);
- Box honeysuckle (*Lonicera nitida*);
- Spotted Laurel (*Aucuba japonica*);
- Bamboo (*Bambusa sp.*).

## 3. Guidance and Methodology

This section sets out the guidance and evidence base used in assessing the potential effects of the scheme.

### 3.1 Guidance and Policy

This information has been informed by the following guidance and policy documents:

- Planning Policy Wales - Technical Advice Note (TAN) 5: Nature Conservation and Planning<sup>7</sup>;
- The Habitats Regulations Assessment Handbook, DTA Publications Ltd<sup>8</sup>; and
- Tyldesley, D. and Chapman, C. 2018. People Over Wind<sup>3</sup> – some Implications of the Judgment. The Habitat Regulations Journal, Issue 10, pp. 19 – 23.

This guidance is intended to improve understanding of how projects are regulated under the Habitats Directive. This guidance draws on experience throughout Britain and on case law in Britain and Europe.

### 3.2 Desk Study Information

In addition to the guidance noted above, a number of websites were used to gather information on the European Sites in order to inform this assessment, in particular, the Management Plans for European Sites and Regulation 37 information. Websites used include:

- Natural Resources Wales (NRW) (and legacy body Countryside Council for Wales (CCW)<sup>9</sup>) website<sup>10</sup>;
- Biodiversity records received from Aderyn<sup>11</sup> on 9<sup>th</sup> March 2022, updated by APEM on 17<sup>th</sup> November 2022;
- MAGIC (Multi-Agency Geographic Information for the Countryside) website<sup>12</sup>; and
- JNCC website<sup>13</sup>.

The documents obtained provide the main elements of NRW's management plans for European Sites along with the Conservation Objectives for the features. The features will be considered to be in Favourable Conservation Status only when the conservation objectives are being met. These objectives therefore provide an indication of the type of effects which could affect the features of European Site. An effect which could affect the ability of a site or feature to meet its objective could be considered to be an adverse effect on the integrity of the European Site concerned.

### 3.3 Habitats Regulations Assessment Methodology

To understand the potential implications for European Sites from the project it is necessary to identify those sites that are located close to the project or are linked by pathways such as hydrological connections.

All European Sites, including European Marine Sites, within 2km of the project were identified using Geographic Information System data from datasets downloaded from the JNCC, MAGIC and NRW. This

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<sup>7</sup> Welsh Government. (2021). Planning Policy Wales - Technical Advice Note 6: Nature Conservation and Planning. Cardiff: Welsh Government.

<sup>8</sup> Tyldesley, D. and Chapman, C. (2013) The Habitats Regulations Assessment Handbook. Nov 2019 edition. UK, DTA Publications Ltd <https://www.dtapublications.co.uk/>

<sup>9</sup> CCW has been amalgamated with the Environment Agency Wales and the Forestry Commission in Wales to form Natural Resources Wales.

<sup>10</sup> Natural Resources Wales Find Protected Areas of Land and Seas <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/find-protected-areas-of-land-and-seas/designated-sites/?lang=en>

<sup>11</sup> <https://aderyn.lercwales.org.uk/> [Accessed: 09/03/22].

<sup>12</sup> MAGIC. (2014). Magic interactive Mapping Application. <http://www.magic.gov.uk/MagicMap.aspx>

<sup>13</sup> JNCC Website <https://jncc.gov.uk/>

was extended to 10km for sites for which bats are a qualifying feature or sites where a direct hydrological pathway was noted.

### 3.3.1 Understanding Qualifying Interests and Conservation Objectives

For sites identified, the qualifying features were established and the conservation objectives for each feature were obtained. Information was also sought to understand the potential vulnerability of the features to any effects that might arise from the project.

### 3.3.2 Identification of the Potential Effects of the Project

Any potential pathways for effect on European Sites resulting from the project were identified prior to consideration of best practice procedures (for example, Guidelines for Pollution Prevention and Construction Industry Research and Information Association (CIRIA) guidance) or the integration of any mitigation measures.

### 3.3.3 Identification of Plans or Projects Considered for In-Combination Effects

An 'in-combination' assessment is required where the project may have an effect on a European Site, but on its own the effects would not be significant. The potential effects of the project should be considered in-combination with other plans or projects that similarly may have an effect, where the combined effects may become significant.

Details of other plans and projects which are currently proposed or consented within the vicinity of the European Sites identified were obtained from the local planning authority website<sup>14</sup> to inform the in-combination assessment of the project.

### 3.3.4 Consideration of the Significance of Potential Effects

The significance of potential effects was assessed in the absence of any avoidance and/or mitigation measures. The assessment has been made with awareness of the conservation objectives for the features of the European Sites, although as stated in the relevant guidance the assessment of the project against the conservation objectives is not required until the Appropriate Assessment stage of the HRA process. In the assessment of the significance of effects, professional judgement was applied using the following criteria (as sufficient information about the elements and interests is often unavailable):

- The vulnerability/sensitivity of the receiving environment/features of interest;
- When the risk of effects is likely to occur (e.g. construction and/or operation);
- The likely geographical extent of the effects; and
- Likelihood of significant effects (e.g. those above negligible in magnitude) occurring based on previous experience with similar elements, where available.

Where there was not enough information about the risk of qualifying interest being present, or of the risk of effects, the assessment used the precautionary principle to inform the judgement. The precautionary principle has been applied to ensure that any assessment errs on the side of caution, without being overly cautious. This principle means that the conservation objectives should prevail where there is uncertainty or that harmful effects will be assumed in the absence of evidence to the contrary.

## 3.4 Limitations

Information provided by third parties, including publicly available information and databases, is considered correct at the time of publication. Due to the dynamic nature of the environment, conditions may change in the period between the preparation of this report, and the construction and operation of the project.

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<sup>14</sup> Torfaen County Borough (2022). *Planning Applications Weekly List*. Available at: <https://www.torfaen.gov.uk/en/PlanningAndDevelopment/Planning-Applications/Planningapplications-residential/Weekly-List-of-Planning-Applications.aspx>. [Accessed 13.10.2022].

The HRA has been undertaken in as detailed a way as possible, using all available data sources where they exist. However, the conclusions drawn from this is necessarily limited by the age, type, coverage and availability of data. Any uncertainties and the limitations of the assessment process are acknowledged and highlighted.



## 4. European Sites Potentially Affected by the Proposal

### 4.1 Identification of European Sites

Figure 2 shows the location of the project in relation to European Sites within 10km of the improvement works. As detailed in Section 3.3, this includes all European Sites within 2km of the project, and those within 10km that are notified for their populations of bats, or where there is a direct downstream hydrological connection from the site to the European site.

No European Site was identified within 2km of the project; however:

- The River Usk / Afon Wysg SAC is located approximately 7.2km north-east of the proposed works and directly hydrologically connected to the River Usk SAC, approximately 14.4km downstream.

**Table 3. River USK / Afon Wysg SAC summary.**

Special Area of Conservation (SAC)	Description	Location relative to Site
River Usk / Afon Wysg SAC	<p>The River Usk SAC comprises a large linear ecosystem which acts an important wildlife corridor, an essential migration route and key breeding area for a number of nationally and internationally important species.</p> <p>The site is primarily designated for its Annex II species including sea lamprey (<i>Petromyzon marinus</i>), brook lamprey (<i>Lampetra planeri</i>), river lamprey (<i>Lampetra fluviatilis</i>), twaite shad (<i>Alosa fallax</i>), Atlantic salmon (<i>Salmo salar</i>), bullhead (<i>Cottus gobio</i>) and otter (<i>Lutra lutra</i>), with allis shad (<i>Alosa alosa</i>) also present as a qualifying species, though not a primary reason for selection of the site. Habitat comprising water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation are also noted to be a qualifying feature of the site, though not a primary reason for its selection.</p>	7.20km east

**Table 4: Characteristics of the River Usk / Afon Wysg SAC.**

Site Description/Interest features	Description of Features and their Conservation Objectives	Condition and Vulnerabilities
<b>Annex I habitats present as a qualifying feature, but not a primary reason for site selection</b>		
Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation.	<p>The habitats within the SAC should have capacity to support each feature at near-natural, stable or increasing, population levels. Known breeding, spawning and nursery sites should be maintained as suitable habitat as far as possible. Characteristic features of the river channel, banks and riparian zone should be maintained. Measures should be taken to maintain pollution, nutrient and suspended solid levels below that agreed between EA and CCW.</p>	<p>Within the Core Management Plan this feature has been assessed as being in favourable (unclassified) condition.</p> <p>The identified vulnerabilities are as follows:</p> <ul style="list-style-type: none"> <li>• Modification of ecological and hydromorphological processes and characteristics.</li> <li>• Poor water quality.</li> <li>• Degradation of breeding, spawning, or nursery sites.</li> <li>• Abstraction, discharges, engineering or gravel extraction activities at fish spawning sites and nursery areas, causing depletion to flows, water quality, substrate quality and quantity.</li> <li>• Physical modification of the river planform and profile, such as from addition of excessive quantities of fine sediment.</li> <li>• Artificial factors impacting on the ability of species to occupy the full extent of their natural range.</li> </ul>

Site Description/Interest features	Description of Features and their Conservation Objectives	Condition and Vulnerabilities
		<ul style="list-style-type: none"> <li>Abstraction during migration periods to the extent that upstream passage to spawning sites is hindered.</li> <li>Unacceptable levels of nutrients, pollution, and suspended solids.</li> </ul>
<b>Annex II species that are a primary reason for selection of this site</b>		
Sea lamprey ( <i>Petromyzon marinus</i> ).	<p>A summary of the conservation objectives are as follows:</p> <p>The special fish species found in the river (brook lamprey <i>Lampetra planeri</i>, river lamprey <i>Lampetra fluviatilis</i>, twaite shad <i>Alosa fallax</i>, Atlantic salmon <i>Salmo salar</i>, and bullhead <i>Cottus gobio</i>), both resident and migratory species, will be present in stable or increasing populations in appropriate habitat over the long-term. Natural range should neither be reduced or likely to be reduced in the foreseeable future. There should continue to be a sufficiently large habitat to maintain the populations within the SAC on a long-term basis.</p> <p>Conservation for the above named fish species are grouped together.</p>	<p>Within the Core Management Plan this feature has been assessed as being in unfavourable (unclassified) condition.</p> <p>Vulnerabilities identified are as follows:</p> <ul style="list-style-type: none"> <li>Partial barriers further downstream.</li> <li>Flow depletion from abstractions</li> <li>Acoustic and sediment/chemical barriers from plans/projects.</li> <li>Elevated levels of fines particles within spawning substrates, as this can interfere with egg survival.</li> </ul>
Brook lamprey ( <i>Lampetra planeri</i> ).	These two species are generally indistinguishable for the purposes of monitoring; however, management objectives are similar. Conservation objectives for these species are grouped together above (see Sea lamprey).	<p>Within the Core Management Plan this feature has been assessed as being in favourable (unclassified) condition.</p> <p>Possible vulnerability to elevated levels of fines particles, as above (see Sea lamprey).</p>
River lamprey ( <i>Lampetra fluviatilis</i> ).		
Twaite shad ( <i>Alosa fallax</i> ).	<p>Relatively common within the SAC.</p> <p>Conservation objectives for this species are grouped together above (see Sea lamprey).</p>	<p>Within the Core Management Plan this feature has been assessed as being in unfavourable (unclassified) condition.</p> <p>Possible vulnerabilities as follows:</p> <ul style="list-style-type: none"> <li>Prolonged low flows in the migration period may result in poor adult runs.</li> <li>Poor egg survival in relation to spate flows in mid to late summer.</li> <li>Artificial physical barriers.</li> <li>Noise/vibrations can create a barrier to shad migration (particularly bad March – June).</li> <li>Contamination of river due to disturbance of contaminated land either side of river.</li> <li>Competition/predation pressure from artificially enhanced fish densities.</li> </ul>
Atlantic salmon ( <i>Salmo salar</i> ).	Conservation objectives for this species are grouped together above (see Sea lamprey).	<p>Within the Core Management Plan this feature has been assessed as being in unfavourable (unclassified) condition.</p> <p>Identified vulnerabilities are as follows:</p> <ul style="list-style-type: none"> <li>Impacts of diffuse pollution and siltation. The most significant source of these is agriculture.</li> <li>Low crayfish populations.</li> <li>Leakage from chemical storage and discharge from sewage treatment</li> </ul>

Site Description/Interest features	Description of Features and their Conservation Objectives	Condition and Vulnerabilities
		<p>works.</p> <ul style="list-style-type: none"> <li>• Lack of overhanging trees and root systems, which provide cover and flow refuges for juveniles.</li> <li>• Temporary physical, acoustic, chemical and sediment barrier effects caused by development pressure in lower catchment.</li> </ul>
Bullhead ( <i>Cottus gobio</i> ).	Conservation objectives for this species are grouped together above (see Sea lamprey).	<p>Within the Core Management Plan this feature has been assessed as being in (unclassified) unfavourable condition.</p> <p>Vulnerabilities identified are as follows:</p> <ul style="list-style-type: none"> <li>• Removal of submerged higher plants that are likely used for cover against predators.</li> <li>• Removal of woody debris, which provides refuges.</li> <li>• Lack of trees on the banks of the river, which provide cover and refuges.</li> <li>• Densities are negatively correlated with non-native crayfish.</li> </ul>
Otter ( <i>Lutra lutra</i> ).	<p>A summary of the conservation objectives are as follows:</p> <p>Population of otters within the SAC is stable/increasing over long term, and the natural range should neither be reduced or be likely to be reduced in the foreseeable future. The SAC should enable safe movement and dispersal of individuals.</p>	<p>Within the Core Management Plan this feature has been assessed as being in favourable condition.</p> <p>Vulnerabilities identified by the plan are as follows:</p> <ul style="list-style-type: none"> <li>• Fluctuations in fish biomass outside what is expected, notably declines in eel populations.</li> <li>• Declines in amphibian populations.</li> <li>• Compression of home ranges.</li> <li>• Insufficient breeding habitat near to the river.</li> <li>• Death due to road collisions where safe movement is not present.</li> <li>• Lack of suitable resting sites, particularly in urban areas.</li> <li>• Pollution of rivers with toxic chemicals, such as PCBs.</li> </ul>
<b>Annex II species present as a qualifying feature, but not as a primary reason for selection</b>		
Allis shad ( <i>Alosa alosa</i> ).	<p>No recent records of allis shad in the Usk.</p> <p>Management for this feature is effectively the same as for twaite shad.</p>	<p>Within the Core Management Plan this feature has been assessed as being in unfavourable (unclassified) condition.</p> <p>Vulnerabilities are the same as those of Twaite shad (see Twaite shad).</p>

## 5. Screening Assessment

### 5.1 Potential Effects of the Project

Table 5: Pathways Under Consideration.

Pathways Under Consideration	Potential Effects of the Project	Likely Significant Effects During Construction	Likely Significant Effects During Operation
Water pollution, including sedimentation and increase in phosphorous levels	<p>Construction activities can result in a pollution incident (e.g. from increased sedimentation working within and around the Afon Lwyd including from physical disturbance of habitats by construction vehicles) which could affect the SAC which is hydrologically connected (downstream).</p> <p>No in-water works are anticipated within the Afon Lwyd and works in proximity to the river will follow standard pollution prevention methods to prevent pollution of the river.</p> <p>In addition, given the SAC is approximately 14.4 km downstream of the proposed works, dilution effect and physical barriers, including a weir and sluice gate in Pontypool Park, mean no likely significant effect is anticipated.</p> <p>No PCBs are proposed to be used on site and no equipment that is likely to be repaired/removed is expected to contain PCBs.</p> <p>No PCBs are proposed to be used during operation.</p>	None	None
Human induced modification of hydromorphology of the river	The works may involve dewatering, and a culvert may be required to cross the stream running along the south of the site during construction. Effects will be limited to during the construction period, and no long-term impacts are anticipated.	None	None
Spread of INNS	<p>Terrestrial and aquatic INNS could be spread via construction machinery, including groundworks by tracking to and from site, or construction workers' footwear, especially when working in and around watercourses (it is not currently considered likely that the river will need to be entered).</p> <p>Several species of terrestrial INNS were identified on site. However, no likely significant effect on the SAC is expected due to implementation of best-practice guidelines, and the SAC being approximately 14.4 km downstream of construction.</p> <p>It is not anticipated that there will be a likely significant effect during operation, as only native species will be included in the wetland construction.</p>	None	None
Loss of habitat used by Annex II species.	<p><b>Otter</b></p> <p>Otter spraints, and suitable resting sites, were identified in Phase 2 surveys undertaken in 2022. There is potential for increased disturbance to otters using the Afon Lwyd and associated habitats during construction works; however, this effect will be temporary and unlikely to be significant. As the proposed works will not create any barrier to distribution or impact on prey abundance, there is not anticipated to be any likely significant effect. The proposed works will enhance the site for recreation/amenity. However, it is unlikely that any increased use of the site will be significant as the site is currently used by local residents for recreation. Therefore, there is not anticipated to be any likely significant effect.</p> <p><b>Other species</b></p> <p>Works may involve dewatering of the tributary of the Afon Lwyd on the southern boundary of the site, in which case a fish rescue may be</p>	None	None
Physical disturbance of habitats used by Annex II species.		None	None
Disturbance/displacement to faunal species.		None	None

Pathways Under Consideration	Potential Effects of the Project	Likely Significant Effects During Construction	Likely Significant Effects During Operation
	undertaken. No effect on the populations within the SAC is expected, given the temporary nature of effects.		

## 5.2 Identification of Other Plans and Projects

Seven planning applications were identified near the project (within a 500m radius from the project boundary). One of these was a change of tenure, and the remaining six as follows:

- 22/P/0631/HH – Ty Canol Jerusalem Lane, New Inn, Pontypool, Torfaen, NP4 0NS. Proposed loft conversion, rear extension and associated internal alterations. Approved with conditions.
- 22/P/0698/CEA – 12 The Walk, New Inn, Pontypool, Torfaen, NP4 0PU. Single storey rear extension. Approved unconditionally.
- 22/P/0229/HH – 21 Prospect Place, New Inn, Pontypool Torfaen, NP4 0PY. New detached garage. Approved with conditions.
- 22/P/0447/TPO – St Marys Church Hall, The Highway, New Inn, Pontypool, Torfaen, NP4 0PH. Tree surgery works. Approved with conditions.
- 22/P/0770/HH - Green Acres Sluvad Road New Inn Pontypool Torfaen NP4 0SX. Extension for vehicular garage. Approved with conditions.
- 22/P/0783/HH - 5 Newport Road New Inn Pontypool Torfaen NP4 0NT. Proposed two storey rear house extension and raised patio area. Approved with conditions.
- 22/P/0839/HH - Lindisfarne 38 Newport Road New Inn Pontypool Torfaen NP4 0NU. Pending consideration.
- 22/P/0760/HH - Azare 40 Newport Road New Inn Pontypool Torfaen NP4 0NU. Approved with conditions.

None of these projects are considered likely to impact on the River Usk / Afon Wysg SAC due to their small scale, locations some distance away from the SAC (at least 6.73 km west), and lack of hydrological connectivity to the SAC. This is correct at the time of writing.



## 6. Conclusions

This project's primary aim is a nature-based solution to address the Pont-y-felin Lane Combined Storm Overflow (CSO) effluent, which has been identified as a high spiller.

The River Usk / Afon Wysg SAC was considered due to being within a 10km proximity (7.2km) of the Site at its closest point. Annex II species identified are sea lamprey, brook lamprey, river lamprey, bullhead, allis shad, twait shad, Atlantic salmon, and otter. The Annex I habitat 'Water courses of plain to montane levels with the *Ranunculus fluitans* and *Callitriche-Batrachion* vegetation' was identified at the SAC, as a qualifying feature, but not a primary reason for site selection.

The report considers the potential effects on the SAC in relation to the conservation objectives for the features of the European Site and identified potential pathways for effect.

As reported above, no significant (adverse) effects are predicted. In fact, the works are likely to result in minor beneficial effects to downstream water quality, including ultimately to the SAC and its qualifying features. As such, subsequent stages of HRA are not required.

This report is produced solely for the benefit of Dŵr Cymru Welsh Water and no liability is accepted for any reliance placed on it by any other party. This report is prepared for the proposed uses stated in the report and should not be used in a different context.

# Figures

**Figure 1 Site Location Plan**

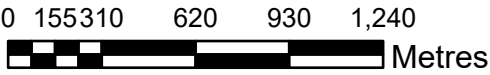
**Figure 2 Location of Site in relation to the River Usk / Afon Wysg SAC**





Site boundary

A3



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REV	DATE	DR	DESCR	CHK	APP	Date
P01	18/05/22	RSJ	FOR INFORMATION	CE	PW	18/05/22



Ty Awen, Spooner Close, Coed Kernew, Newport, NP108FZ

Project Name:  
Pont-y-Felin CSO

Drawing Title:  
Site Location Plan

Suitability	Issue	Suitability Code
		S4

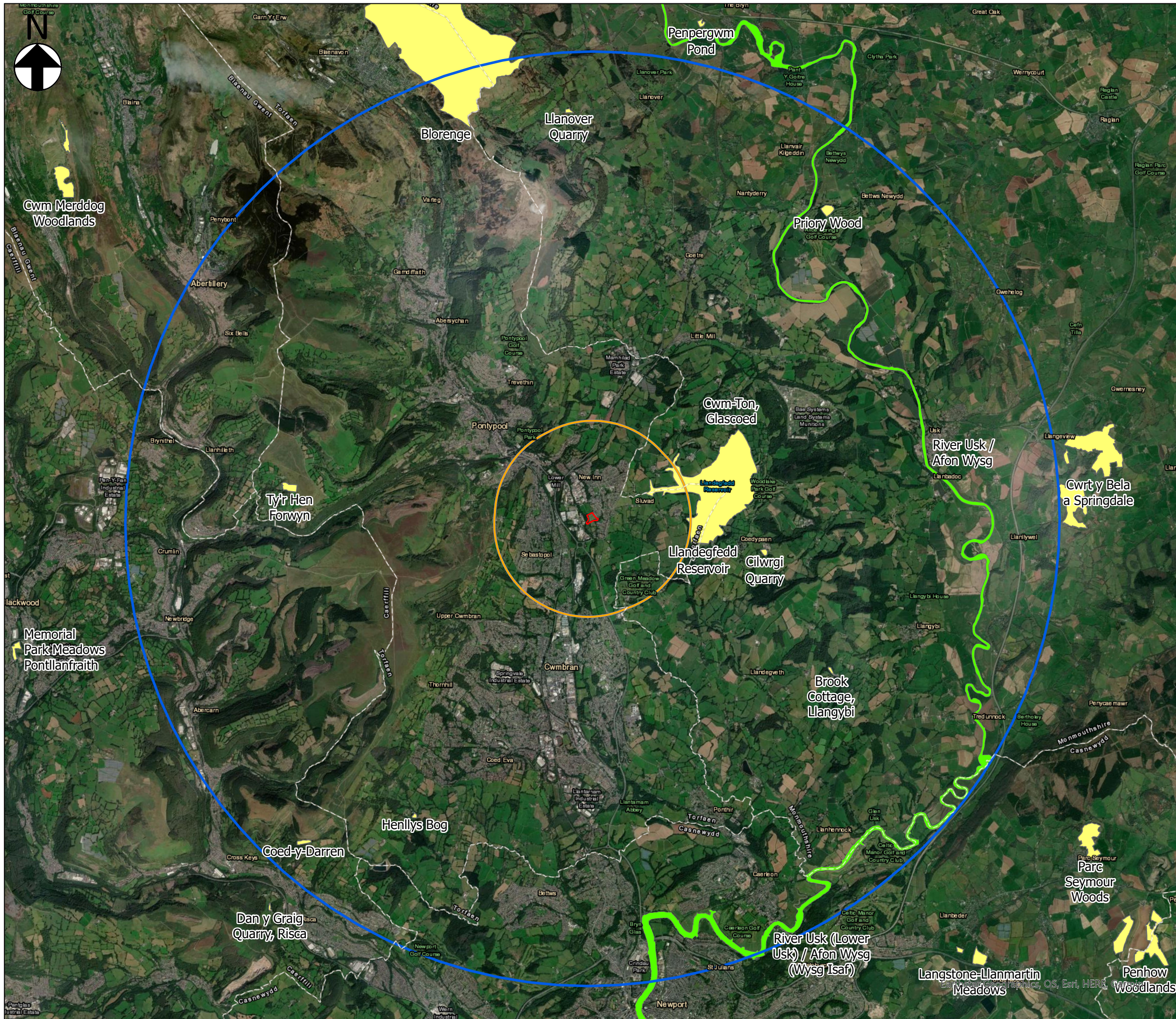
Originator RSJ	Designer PW	Date 18/05/22
Internal Project Number 275294-00	Scale 1:30,000	Rev. P01

Drawing Number:  
Figure 1

Maxar, Microsoft, OS, Esri, HERE, Garmin, GeoTechnologies, Inc.

Llandegveth





Site boundary

2km buffer

10km buffer

Special Area of Conservation (SAC)

Sites of Special Scientific Interest (SSSI)

0 495 990 1,980 2,970 3,960

Metres

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REV	DATE	DR	DESCR	CHK	APP	Date
P01	18/05/22	RSJ	FOR INFORMATION	CE	PW	18/05/22

Cynghrair Cyflawni Cyfalaf

Ty Awon, Spooner Close, Coed Kernew, Newport, NP108FZ

Project Name

Pont-y-Felin CSO

Drawing Title

Statutory designated sites

Suitability

Issue

Suitability Code

S4

Originator

RSJ

Designer

PW

Date

18/05/22

Internal Project Number

275294-00

Scale

1:78,000

Rev.

P01

Drawing Number

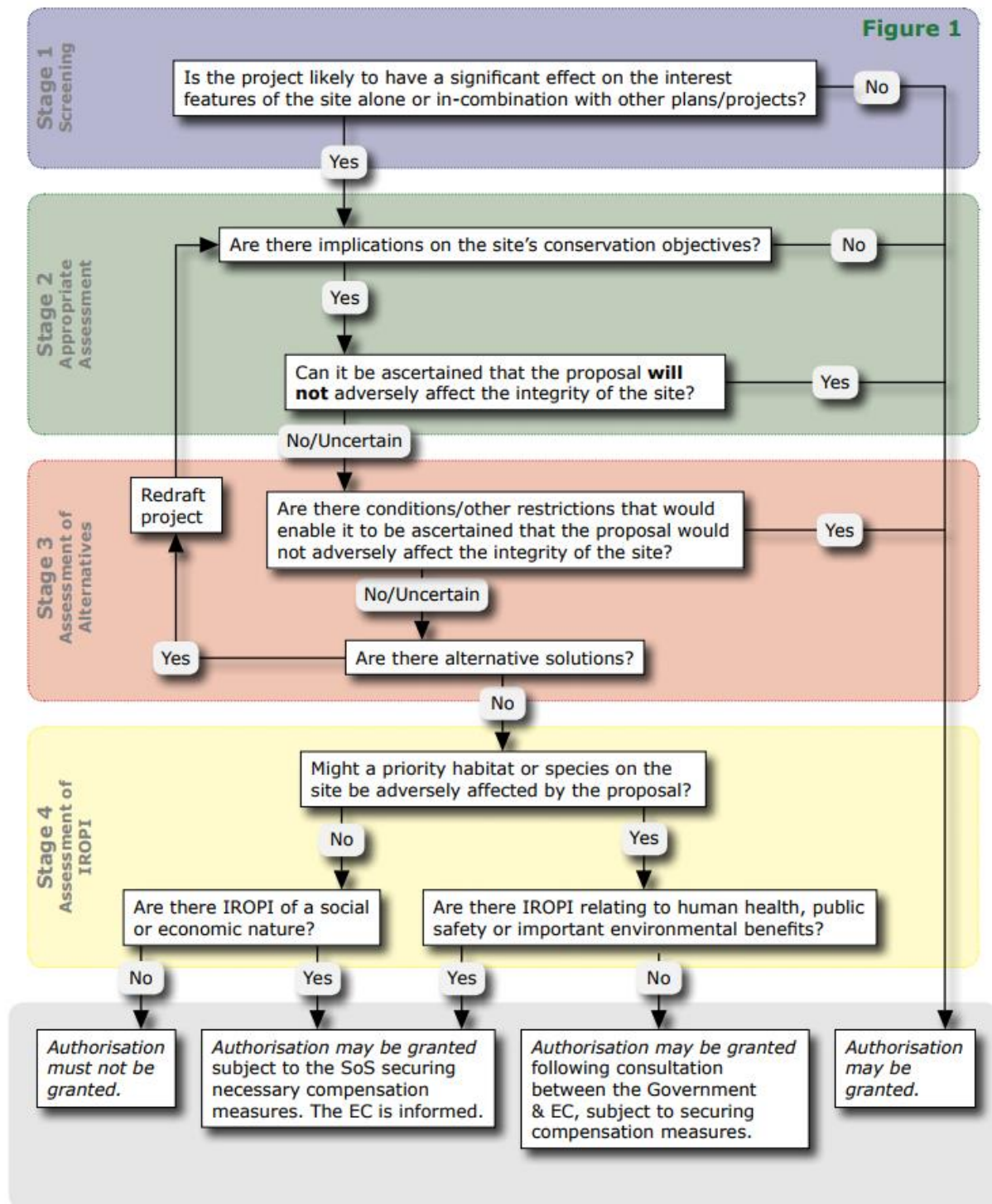
Figure 2

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# Appendix A

## Habitat Regulations Assessment Process





# Appendix B

## Natura 2000 Standard Data Forms for the Designated Site



# NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),  
Proposed Sites for Community Importance (pSCI),  
Sites of Community Importance (SCI) and  
for Special Areas of Conservation (SAC)

SITE UK0013007  
SITENAME River Usk/ Afon Wysg

## TABLE OF CONTENTS

- [1. SITE IDENTIFICATION](#)
- [2. SITE LOCATION](#)
- [3. ECOLOGICAL INFORMATION](#)
- [4. SITE DESCRIPTION](#)
- [5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES](#)
- [6. SITE MANAGEMENT](#)

## 1. SITE IDENTIFICATION

<b>1.1 Type</b> B	<b>1.2 Site code</b> UK0013007	<a href="#">Back to top</a>
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### 1.3 Site name

River Usk/ Afon Wysg

<b>1.4 First Compilation date</b> 1998-03	<b>1.5 Update date</b> 2015-12
--	-----------------------------------

### 1.6 Respondent:

**Name/Organisation:** Joint Nature Conservation Committee

**Address:** Joint Nature Conservation Committee Monkstone House City Road Peterborough  
PE1 1JY

**Email:**

**Date site proposed as SCI:** 1998-03

**Date site confirmed as SCI:** 2004-12

**Date site designated as SAC:** 2004-12

**National legal reference of SAC designation:**

Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010  
(<http://www.legislation.gov.uk/uksi/2010/490/contents/made>).

## 2. SITE LOCATION

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## 2.1 Site-centre location [decimal degrees]:

-3.013888889

51.79583333

967.97

0.0

0.0

## 2.5 Administrative region code and name

Region Name

UKL2	East Wales
UKL1	West Wales and The Valleys









## 2.6 Biogeographical Region(s)

Atlantic (100.0%)

### 3. ECOLOGICAL INFORMATION

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### 3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A B C D	A B C		
						Representativity	Relative Surface	Conservation	Global
1130 			134.55	0	G	D			
1140 			123.9	0	G	D			
1330 			29.04	0	M	D			
3260 			29.04	0	M	B	C	B	C
9130 			4.84	0	G	D			
9180 	X		21.3	0	G	D			
91A0 			12.58	0	G	D			
91D0 	X		2.9	0	G	D			

91E0	X		43.56	0	G	D			
------	---	--	-------	---	---	---	--	--	--

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

### 3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A B C D	A B C		
						Min	Max				Pop.	Con.	Iso.	Gl
F	1102	<a href="#">Alosa alosa</a>			p				P	DD	C	C	C	C
F	1103	<a href="#">Alosa fallax</a>			p				P	DD	A	B	C	A
I	1092	<a href="#">Austropotamobius pallipes</a>			p				P	DD	D			
F	1163	<a href="#">Cottus gobio</a>			p				P	DD	B	B	C	B
F	1099	<a href="#">Lampetra fluviatilis</a>			p				P	DD	B	A	C	A
F	1096	<a href="#">Lampetra planeri</a>			p				P	DD	B	B	C	A
M	1355	<a href="#">Lutra lutra</a>			p	11	50	i		M	C	B	C	B
I	1029	<a href="#">Margaritifera margaritifera</a>			p				P	DD	D			
F	1095	<a href="#">Petromyzon marinus</a>			p				P	DD	B	B	C	B
M	1303	<a href="#">Rhinolophus hipposideros</a>			p				P	DD	D			
F	1106	<a href="#">Salmo salar</a>			p				P	DD	A	C	C	A

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see [reference portal](#))
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

## 4. SITE DESCRIPTION

#### 4.1 General site character

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Habitat class	% Cover
N03	4.5
N07	3.8
N14	2.0
N16	10.1
N02	26.8
N08	3.4
N23	2.1
N06	37.9
N09	8.0
N10	1.4
<b>Total Habitat Cover</b>	<b>99.99999999999999</b>

#### Other Site Characteristics

1 Terrestrial: Soil &  
 Geology: alluvium,mud,nutrient-rich,limestone,basic,neutral,shingle,sandstone,acidic,peat,clay,nutrient-poor,sea  
 Terrestrial: Geomorphology and landscape: valley,floodplain,coastal,lowland,upland,island 3 Marine:  
 Geology: mud 4 Marine: Geomorphology: estuary

#### 4.2 Quality and importance

Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation for which the area is considered to support a significant presence. Petromyzon marinus for which this is considered to be one of the best areas in the United Kingdom. Lampetra fluviatilis for which this is considered to be one of the best areas in the United Kingdom. Lampetra planeri for which this is considered to be one of the best areas in the United Kingdom. Alosa alosa for which the area is considered to support a significant presence. Alosa fallax for which this is considered to be one of the best areas in the United Kingdom. Salmo salar for which this is considered to be one of the best areas in the United Kingdom. Cottus gobio for which this is considered to be one of the best areas in the United Kingdom. Lutra lutra for which this is considered to be one of the best areas in the United Kingdom.

#### 4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i o b]
M	I01		B
H	A04		I
L	B07		B
H	H01		B
L	H05		O
H	J02		I
M	B02		B
M	J03		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i o b]
M	J03		I

Rank: H = high, M = medium, L = low

Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification, T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions

i = inside, o = outside, b = both

#### 4.5 Documentation

The Natural Resources Wales weblink below provides access to information on its designated sites. Detailed information about this Natura 2000 site can be accessed via the Management Plan link provided in Section 6.2. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land>  
[http://jncc.defra.gov.uk/pdf/Natura2000\\_StandardDataForm\\_UKApproach\\_Dec2015.pdf](http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf)

### 5. SITE PROTECTION STATUS (optional)

[Back to top](#)

#### 5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

### 6. SITE MANAGEMENT

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#### 6.1 Body(ies) responsible for the site management:

Organisation:	Natural Resources Wales
Address:	
Email:	

#### 6.2 Management Plan(s):

An actual management plan does exist:

<input checked="" type="checkbox"/> Yes	Name: RIVER USK / AFON WYSG Link: <a href="https://www.naturalresources.wales/media/673384/River_Usk%20SAC%20core%20plan.pdf">https://www.naturalresources.wales/media/673384/River_Usk%20SAC%20core%20plan.pdf</a>
<input type="checkbox"/> No, but in preparation	
<input type="checkbox"/> No	

## EXPLANATION OF CODES USED IN THE SPECIAL AREA OF CONSERVATION (SAC) AND SPECIAL PROTECTION AREA (SPA) STANDARD DATA FORMS

The codes in the table below generally follow those explained in the [official European Union guidelines for the Standard Data Form](#) (also referencing the relevant page number).

### 1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	SPA (classified Special Protection Area)	53
B	cSAC, SCI or SAC (candidate Special Area of Conservation, Site of Community Importance, designated Special Area of Conservation)	53
C	SPA area/boundary is the same as the cSAC/SCI/SAC i.e. a co-classified/designated site (Note: this situation only occurs in Gibraltar)	53

### 3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
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B	Good representativity	57
C	Significant representativity	57
D	Non-significant presence representativity	57

### 3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	58
B	> 2%-15%	58
C	≤ 2%	58

### 3.1 Degree of conservation (abbreviated to 'Conservation' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

### 3.1 Global assessment (abbreviated to 'Global' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

### 3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	> 15%-100%	62
B	> 2%-15%	62
C	≤ 2%	62
D	Non-significant population	62

### 3.2 Degree of conservation (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

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A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

### 3.2 Global Grade (abbreviated to 'Glo.' or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

### 3.3 Other species – essentially covers bird assemblage types

CODE	DESCRIPTION	PAGE NO
WATR	Non-breeding waterbird assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code

BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code
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#### 4.1 Habitat class code

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N01	Marine areas, Sea inlets	65
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N07	Bogs, Marshes, Water fringed vegetation, Fens	65
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N11	Alpine and sub-Alpine grassland	65
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N16	Broad-leaved deciduous woodland	65
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N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
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N26	Woodland habitats (general)	65

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CODE	DESCRIPTION	PAGE NO
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M01	Changes in abiotic conditions	65
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U	Unknown threat or pressure	65
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## 5.1 Designation type codes

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UK06	Nature Conservation Marine Protected Area	67
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UK98	Area of Special Scientific Interest (NI)	67
IN00	Ramsar Convention site	67
IN08	Special Protection Area	67
IN09	Special Area of Conservation	67

# Appendix C

## River Usk / Afon Wysg Core Management Plan



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

**CORE MANAGEMENT PLAN  
INCLUDING CONSERVATION OBJECTIVES  
FOR  
RIVER USK SPECIAL AREA OF CONSERVATION**

**Version:** 1.5

**Date:** 7<sup>th</sup> March 2008

**Approved by:** David Mitchell

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



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## **PREFACE**

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

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

## 1. **VISION FOR THE SITE**

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

Our vision for the River Usk SAC is to maintain, or where necessary restore the river to high ecological status, including its largely unmodified and undisturbed physical character, so that all of its special features are able to sustain themselves in the long-term as part of a naturally functioning ecosystem. Allowing the natural processes of erosion and deposition to operate without undue interference and maintaining or restoring connectivity maintains the physical river habitat, which forms the foundation for this ecosystem. The quality and quantity of water, including natural flow variability, and the quality of adjacent habitats, are maintained or restored to a level necessary to maintain the features in favourable condition for the foreseeable future. In places such as urban environments where natural processes are likely to cause significant damage to the public interest, artificial control measures are likely to be required.

The aquatic plant communities that characterise parts of the river are not only attractive but also give a good indication of the overall quality of the environment. They contain the variety and abundance of species expected for this type of river, in conditions of suitably clean water and bed substrate combined with a relatively stable flow regime. Locally, there are patches of white-flowered water-crowfoots. In the more shaded reaches, aquatic plants may be scarce, consisting mainly of mosses and liverworts.

The special fish species found in the river, both residents such as the bullhead and brook lamprey, and migratory species such as the Atlantic salmon, sea lamprey and shad, which swim up river to spawn and go through their juvenile stages in the river, are present in numbers that reflect a healthy and sustainable population supported by well-distributed good quality habitat. The migratory fish are able to complete their migrations and life cycles largely unhindered by artificial barriers such as weirs, pollution, or depleted flows.

The abundance of prey and widespread availability of undisturbed resting and breeding sites, allows a large otter population to thrive. They are found along the entire length of the river and its main tributaries.

The presence of the River Usk SAC and its special wildlife enhances the economic and social values of the area, by providing a high quality environment for ecotourism, outdoor activities and peaceful enjoyment by local people and visitors. The river catchment's functions of controlling flooding and supplying clean water are recognised and promoted through appropriate land management. The river is a focus for education to promote increased understanding of its biodiversity and the essential life support functions of its ecosystems.



## 2.2 Outline Description

The River Usk SAC rises in the Black Mountain range in the west of the Brecon Beacons National Park and flows east and then south, to enter the Severn Estuary at Newport. The overall form of the catchment is long and narrow, with short, generally steep tributaries flowing north from the Black Mountain, Fforest Fawr and Brecon Beacons, and south from Mynydd Epynt and the Black Mountains. The underlying geology consists predominantly of Devonian Old Red Sandstone with a moderate base status, resulting in waters that are generally well buffered against acidity. This geology also produces a generally low to moderate nutrient status, and a moderate base-flow index, intermediate between base-flow dominated rivers and more flashy rivers on less permeable geology. The run-off characteristics and nutrient status are significantly modified by land use in the catchment, which is predominantly pastoral with some woodland and commercial forestry in the headwaters and arable in the lower catchment. The Usk catchment is entirely within Wales.

The ecological structure and functions of the site are dependent on hydrological and geomorphological processes (often referred to as hydromorphological processes), as well as the quality of riparian habitats and connectivity of habitats. Animals that move around and sometimes leave the site, such as migratory fish and otters, may also be affected by factors operating outside the site.

**Hydrological processes**, in particular river flow (level and variability) and water chemistry, determine a range of habitat factors of critical importance to the SAC features, including current velocity, water depth, wetted area, substrate quality, dissolved oxygen levels and water temperature. Maintenance of both high 'spate' flows and base-flows is essential. Reduction in flows may reduce the ability of the adults of migratory fish to reach spawning sites. Water-crowfoot vegetation thrives in relatively stable, moderate flows and clean water. The flow regime should be characteristic of the river in order to support the functioning of the river ecosystem.

**Geomorphological processes** of erosion by water and subsequent deposition of eroded sediments downstream, create the physical structure of the river habitats. Whilst some sections of the river are naturally stable, especially where they flow over bedrock, others undergo constant and at times rapid change through the erosion and deposition of bed and bank sediments as is typical of meandering sections within floodplains (called 'alluvial' rivers). These processes help to sustain the river ecosystem by allowing a continued supply of clean gravels and other important substrates to be transported downstream. In addition, the freshly deposited and eroded surfaces, such as shingle banks and earth cliffs, enable processes of ecological succession to begin again, providing an essential habitat for specialist, early-successional species. Processes at the wider catchment scale generally govern processes of erosion and deposition occurring at the reach scale, although locally, factors such as the effect of grazing levels on riparian vegetation structure may contribute to enhanced erosion rates. In general, management that interferes with natural geomorphological processes, for example preventing bank erosion through the use of hard revetments or removing large amounts of gravel, are likely to be damaging to the coherence of the ecosystem structure and functions.

**Riparian habitats**, including bank sides and habitats on adjacent land, are an integral part of the river ecosystem. Diverse and high quality riparian habitats have a vital role in maintaining the SAC features in a favourable condition. The type and condition of riparian vegetation influences shade and water temperature, nutrient run-off from adjacent land, the availability of woody debris to the channel and inputs of leaf litter and invertebrates to support in-stream consumers. Light, temperature and nutrient levels influence in-stream plant production and habitat suitability for the SAC features. Woody debris is very important as it provides refuge areas from predators, traps sediment to create spawning and juvenile habitat and forms the

base of an important aquatic food chain. Otters require sufficient undisturbed riparian habitats as breeding and resting sites. It is important that appropriate amounts of tree cover, in general at least 50% high canopy cover, tall vegetation and other semi-natural habitats are maintained on the riverbanks and in adjacent areas, and that they are properly managed to support the SAC features. This may be achieved, for example, through managing grazing levels, selective coppicing of riparian trees and restoring adjacent wetlands. In the urban sections the focus may be on maintaining the river as a communication corridor but this will still require that sufficient riparian habitat is present and managed to enable the river corridor to function effectively.

**Habitat connectivity** is an important property of river ecosystem structure and function. Many of the fish that spawn in the river are migratory, depending on the maintenance of suitable conditions on their migration routes to allow the adults to reach available spawning habitat and juvenile fish to migrate downstream. For resident species, dispersal to new areas, or the prevention of dispersal causing isolated populations to become genetically distinct, may be important factors. Naturally isolated feature populations that are identified as having important genetic distinctiveness should be maintained. Artificial obstructions including weirs and bridge sills can reduce connectivity for some species. In addition, reaches subject to depleted flow levels, pollution, or disturbance due to noise, vibration or light, can all inhibit the movement of sensitive species. The dispersal of semi-terrestrial species, such as the otter, can be adversely affected by structures such as bridges under certain flow conditions; therefore, these must be designed to allow safe passage. The continuity of riparian habitats enables a wide range of terrestrial species, for example lesser horseshoe bats, to migrate and disperse through the landscape. Connectivity should be maintained or restored where necessary as a means to ensure access for the features to sufficient habitat within the SAC.

**External factors**, operating outside the SAC, may also be influential, particularly for the migratory fish and otters. For example, salmon may be affected by barriers to migration in the Severn Estuary, inshore fishing and environmental conditions prevailing in their north Atlantic feeding grounds. Otters may be affected by developments that affect resting and breeding sites outside the SAC boundary.

## **2.3 Outline of Past and Current Management**

There are many different aspects to the management of this large and complex site that may affect its conservation status. These are summarised in the Site Management Statements for the component SSSIs.

## **2.4 Management Units**

The plan area has been divided into management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based on the following:

- SSSI boundaries
- Artificial barriers, where they significantly affect one or more of the features' range
- Major impacts, in particular major water abstractions
- Natural hydromorphology, where there are significant differences in management issues/key features between reaches
- Estuaries: the reach below the tidal limit is treated as a separate unit
- The units include one or more of EA's River Basin Management Plan water bodies; as far as is practicable, unit boundaries coincide with these water body boundaries.





### 3. **THE SPECIAL FEATURES**

#### 3.1 Confirmation of Special Features

<i>Designated feature</i>	<i>Relationships, nomenclature etc</i>	<i>Conservation Objective in part 4</i>
<i>SAC features</i>		
<i>Annex II species that are a primary reason for selection of this site</i>		
Sea lamprey <i>Petromyzon marinus</i>		1
Brook lamprey <i>Lampetra planeri</i>	These two species are generally indistinguishable for the purposes of monitoring; however management requirements are similar	2
River Lamprey <i>Lampetra fluviatilis</i>		
Twaite shad <i>Alosa fallax</i>	Management for this feature is effectively the same as for allis shad	3
Atlantic salmon <i>Salmo salar</i>		4
Bullhead <i>Cottus gobio</i>		5
European otter <i>Lutra lutra</i>		6
<i>Annex I habitats and Annex II species present as qualifying features, but not primary reasons for site selection</i>		
Allis shad <i>Alosa alosa</i>	Management for this feature is effectively the same as for twaite shad	3
Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation		7
<i>SPA features</i>		
Not applicable		
<i>Ramsar features</i>		
Not applicable		
<i>SSSI features</i>		
To be added		

#### 3.2 Special Features and Management Units

This section sets out the relationship between the special features and each management unit. This is intended to provide a clear statement about what each unit should be managed for, taking into account the varied needs of the different special features.

All special features are allocated to one of seven classes in each management unit. These classes are:

##### **Key Features**

**KH** - a 'Key Habitat' in the management unit, i.e. the habitat that is the main focus of management and monitoring effort, perhaps because of the dependence of a key species (see KS below). There will rarely be more than one Key Habitat in a unit.

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

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

## Other Features

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

- they are present in the unit but are of less conservation importance than the key feature; and/or
- they are present in the unit but in small areas/numbers, with the bulk of the feature in other units of the site; and/or
- their requirements are broader than and compatible with the management needs of the key feature(s).

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

**Mn** - Management units with no special feature present but which are of importance for management of features elsewhere on a site e.g. livestock over-wintering area included within designation boundaries.

**x** – Features not present in the management unit.

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

River Usk (Lower Usk) SSSI	Management unit				
	1	2	3		
SAC	<b>I</b>	<b>I</b>	<b>I</b>		
SSSI	<b>I</b>	<b>I</b>	<b>I</b>		
CCW ownership					
<b>SAC Features</b>					
1. Sea lamprey	<b>KS</b>	<b>KS</b>	<b>KS</b>		
2. River lamprey	Sym	Sym	Sym		
3. Brook lamprey	x	Sym	Sym		
4. Twaite shad	<b>KS</b>	<b>KS</b>	<b>KS</b>		
5. Allis shad	Sym	Sym	Sym		
6. Atlantic salmon	Sym	Sym	Sym		
7. Bullhead	x	Sym	Sym		
8. European otter	<b>KS</b>	<b>KS</b>	<b>KS</b>		
9. Rivers with floating vegetation often dominated by water-crowfoot	x	<b>KH</b>	<b>KH</b>		
<b>SSSI Features</b>					
To be added					

- Twaite shad and sea lamprey spawn within Units 2 & 3 and migrate through Unit 1, where they may be subject to disturbance impacts, so are selected as key features in all units.
- Management for twaite shad and sea lamprey should also be sympathetic for Atlantic salmon, river/brook lamprey (spawning habitat) and bullhead.
- Specific management measures for otter relating to adjacent habitats and disturbance require its selection as a key feature in all units.
- The feature 'Rivers with floating vegetation often dominated by water-crowfoot' occurs in Units 2 & 3 in this SSSI and is selected as a key habitat.

- The status of allis shad is uncertain in River Usk (Lower Usk) SSSI. It is assumed to be present in the same units as twaite shad.

<b>River Usk (Upper Usk) SSSI</b>	<b>Management unit</b>				
	<b>4</b>	<b>5</b>	<b>6</b>		
SAC	<b>I</b>	<b>I</b>	<b>I</b>		
SSSI	<b>I</b>	<b>I</b>	<b>I</b>		
CCW ownership					
<b>SAC Features</b>					
1. Sea lamprey	<b>KS</b>	<b>KS</b>	x		
2. River lamprey	Sym	Sym	Sym		
3. Brook lamprey	Sym	Sym	Sym		
4. Twaite shad	<b>KS</b>	<b>KS</b>	x		
5. Allis shad	Sym	Sym	x		
6. Atlantic salmon	Sym	Sym	<b>KS</b>		
7. Bullhead	Sym	Sym	Sym		
8. European otter	<b>KS</b>	<b>KS</b>	<b>KS</b>		
9. Rivers with floating vegetation often dominated by water-crowfoot	x	x	x		
<b>SSSI Features</b>					
To be added					

- Atlantic salmon is a key feature in Unit 6 due to the presence of spawning sites, although salmon may occasionally also spawn within Units 4 & 5.
- Twaite shad is recorded only infrequently in Unit 5 as their distribution is constrained by the barrier created by Crickhowell Bridge footings.
- Sea lamprey is recorded more frequently than shad within Unit 5 but may also be affected to an extent by Crickhowell Bridge. The natural range of sea lamprey may extend upstream into Unit 6, however the degree to which their distribution may be constrained by Brecon weir is poorly understood. Sea lamprey is assumed to be generally absent from Unit 6 due to natural range limits.
- Management for Atlantic salmon, twaite shad and sea lamprey is expected to be sympathetic for river/brook lamprey (spawning habitat) and bullhead.
- Specific management measures for otter relating to adjacent habitats and disturbance require its selection as a key feature in all units.
- The status of the features Allis shad and 'Rivers with floating vegetation often dominated by water-crowfoot' is uncertain in River Usk (Upper Usk) SSSI. Allis shad is assumed to be present in the same units as twaite shad.

<b>River Usk (Tributaries) SSSI</b>	<b>Management unit</b>				
	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	
SAC	<b>I</b>	<b>I</b>	<b>I</b>	<b>I</b>	
SSSI	<b>I</b>	<b>I</b>	<b>I</b>	<b>I</b>	
CCW ownership					
<b>SAC Features</b>					
1. Sea lamprey	x	x	x	x	
2. River lamprey	Sym	Sym	<b>KS</b>	<b>KS</b>	
3. Brook lamprey	Sym	Sym	<b>KS</b>	<b>KS</b>	
4. Twaite shad	x	x	x	x	
5. Allis shad	x	x	x	x	

6. Atlantic salmon	<b>KS</b>	<b>KS</b>	<b>KS</b>	<b>KS</b>	
7. Bullhead	Sym	Sym	Sym	Sym	
8. European otter	<b>KS</b>	<b>KS</b>	<b>KS</b>	<b>KS</b>	
9. Rivers with floating vegetation often dominated by water-crowfoot	<b>x</b>	<b>x</b>	<b>x</b>	<b>KH</b>	
<b>SSSI Features</b>					
Atlantic salmon	<b>KS</b>	<b>KS</b>	<b>KS</b>	<b>KS</b>	
Brook lamprey	Sym	Sym	<b>KS</b>	<b>KS</b>	
Bullhead	Sym	Sym	Sym	Sym	
European otter	<b>KS</b>	<b>KS</b>	<b>KS</b>	<b>KS</b>	

- Atlantic salmon spawns in all tributaries within this SSSI and so is selected as a key feature in all units.
- Twaite shad, allis shad and sea lamprey are thought not to occur within this SSSI.
- River/brook lamprey are selected as key features within Units 9 & 10, which are thought to contain a higher proportion of suitable ammocoete habitat compared to other units so are expected to hold important populations of these features<sup>4</sup>. Monitoring confirms this to an extent<sup>2</sup>.
- Unit 10 is the only unit within this SSSI known to contain the feature 'Rivers with floating vegetation often dominated by water-crowfoot'. The good stands of water-crowfoot dominated vegetation justify its selection as a key feature in this unit.

## 4. CONSERVATION OBJECTIVES

### Background to Conservation Objectives:

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

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

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

#### **Box 1**

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

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

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

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

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

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

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

- Conservation planning and management.

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

- Assessing plans and projects.

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

- Monitoring and reporting.

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

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

#### **b. Format of the conservation objectives**

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

Each conservation objective consists of the following two elements:

1. Vision for the feature
2. Performance indicators

As a result of the general practice developed and agreed within the UK Conservation Agencies, conservation objectives include performance indicators, the selection of which should be informed by JNCC guidance on Common Standards Monitoring<sup>1</sup>.

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

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

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

**The ecological status of the water course is a major determinant of FCS for all features. The required conservation objective for the water course is defined below.**

#### **4.1 Conservation Objective for the water course**

- 4.1.1 The capacity of the habitats in the SAC to support each feature at near-natural population levels, as determined by predominantly unmodified ecological and hydromorphological processes and characteristics, should be maintained as far as possible, or restored where necessary.
- 4.1.2 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.
- 4.1.3 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.
- 4.1.4 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.
- 4.1.5 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.
- 4.1.6 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.
- 4.1.7 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.
- 4.1.8 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.
- 4.1.9 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.
- 4.1.10 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.
- 4.1.11 Flow objectives for assessment points in the Usk Catchment Abstraction Management Strategy will be agreed between EA and CCW 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 this document.
- 4.1.12 Levels of nutrients, in particular phosphate, will be agreed between EA and CCW 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 this document.
- 4.1.13 Levels of water quality parameters that are known to affect the distribution and abundance of SAC features will be agreed between EA and CCW 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



standards used by the Review of Consents process given in Annex 3 of this document.

- 4.1.14 Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects.
- 4.1.15 Levels of suspended solids will be agreed between EA and CCW 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.

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#### 4.2 Conservation Objective for Features 1-5:

- Sea lamprey *Petromyzon marinus* (EU Species Code: **1095**) ;
  - Brook lamprey *Lampetra planeri* (EU Species Code : **1096**) ;
  - River lamprey *Lampetra fluviatilis* (EU Species Code : **1099**) ;
  - Twaite shad *Alosa fallax* (EU Species Code : **1103**) ;
  - Allis shad *Alosa alosa* (EU Species Code : **1102**) ;
  - Atlantic salmon *Salmo salar* (EU Species Code : **1106**) ;
  - Bullhead *Cottus gobio* (EU Species Code : **1163**)
- 

#### Vision for features 1-5

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

FCS component	Supporting information / current knowledge
<b>4.2.1 The conservation objective for the water course as defined in 4.1 above must be met</b>	
<b>4.2.2 The population of the feature in the SAC is stable or increasing over the long term.</b>	<p>Refer to sections 5.1 to 5.5 for current assessments of feature populations</p> <p>Entrainment in water abstractions directly impacts on population dynamics through reduced recruitment and survival rates.</p> <p>Fish stocking can adversely affect population dynamics through competition, predation, and alteration of population genetics and introduction of disease.</p>
<b>4.2.3 The natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches where predominantly suitable habitat for each life stage exists over the long term. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms eg. suitable flows to allow upstream migration, depth of water and substrate type at spawning sites, and ecosystem structure and functions eg. food supply (as described in sections 2.2</b>	<p>Some reaches of the Usk SAC are more suitable for some features than others e.g. the Senni has important populations of brook/river lamprey and salmon but is not used by shad due to its small size and distance from the estuary. These differences influence the management priorities for individual reaches and are used to define the site units described in section 3.2. Further details of feature habitat suitability are given in section 5. In general, management for one feature is likely to be sympathetic for the other features present in the river, provided that the components of favourable conservation status for the water course given in section 4.1 are secured.</p> <p>The characteristic channel morphology provides the diversity of water depths, current velocities and</p>

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<p><b>and 5). Suitable habitat need not be present throughout the SAC but where present must be secured for the foreseeable future. Natural factors such as waterfalls may limit the natural range of individual species. Existing artificial influences on natural range that cause an adverse effect on site integrity, such as physical barriers to migration, will be assessed in view of 4.2.4</b></p>	<p>substrate types necessary to fulfil the habitat requirements of the features. The close proximity of different habitats facilitates movement of fish to new preferred habitats with age. The presence of hard bank revetments in a number of active alluvial reaches e.g. through Brecon and upstream of Abergavenny, adversely affects the processes that maintain suitable habitat for the SAC features.</p> <p>Hydrological processes in the Usk are currently affected by large abstractions, especially at Prioress Mill and Brecon Weir. However, there are many smaller abstractions not considered to cause a problem at present.</p> <p>Shad and salmon migration can be affected by acoustic barriers and by high sediment loads, which can originate from a number of sources including construction works.</p>
<p><b>4.2.4 There is, and will probably continue to be, a sufficiently large habitat to maintain the feature's population in the SAC on a long-term basis.</b></p>	<p>Allis and twaite shad are affected by range contraction due to artificial barriers to migration in the Usk. It is likely that this loss of habitat affects their maintenance in the SAC on a long-term basis.</p>

#### Performance indicators for features 1-5

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

Sea lamprey <i>Petromyzon marinus</i> : <i>Performance indicators for feature condition</i>			
<i>Attribute</i>	<i>Specified limits</i>	<i>Comments</i>	<i>Relevant unit(s)</i>
a) Distribution within catchment	Suitable habitat adjacent to or downstream of known spawning sites should contain <i>Petromyzon ammocoetes</i> .	This attribute provides evidence of successful spawning and distribution trends. Spawning sites known to have been used within the previous 10 years and historical sites considered still to have suitable habitat, are shown in Annex 4. Spawning locations may move within and between sites due to natural processes or new sites may be discovered over time. Silt beds downstream of all sites identified in Annex 4 will be sampled for presence or absence of ammocoetes. Where apparently suitable habitat at any site is unoccupied feature condition will be considered unfavourable.	1-5

b) Ammocoete density	Ammocoetes should be present in at least four sampling sites each not less than 5km apart.	This standard CSM attribute establishes a minimum occupied spawning range, within any sampling period, of 15km. In the Usk, spawning sites within units 2 to 5 will be assessed against this attribute.	2-5
	Overall catchment mean $>0.1\text{m}^{-2}$ (Harvey & Cowx 2003) <sup>1</sup>	Although this attribute is not used in CSM for sea lamprey, baseline monitoring in the Usk gave an overall catchment mean of 2.27 ammocoetes $\text{m}^{-2}$ in suitable habitat <sup>2</sup> , therefore $0.1\text{m}^{-2}$ is a conservative threshold value for unfavourable condition.	

Brook lamprey *Lampetra planeri* and River lamprey *Lampetra fluviatilis* :  
**Performance indicators for feature condition**

<i>Attribute</i>	<i>Specified limits</i>	<i>Comments</i>	<i>Relevant unit(s)</i>
a) Age/size structure of ammocoete population	Samples $< 50$ ammocoetes ~ 2 size classes  Samples $> 50$ ammocoetes ~ at least 3 size classes	This gives an indication of recruitment to the population over the several years preceding the survey. Failure of one or more years recruitment may be due to either short or long term impacts or natural factors such as natural flow variability, therefore would trigger further investigation of the cause rather than leading automatically to an unfavourable condition assessment.	2-10
b) Distribution of ammocoetes within catchment	Present at not less than 2/3 of sites surveyed within natural range  No reduction in distribution of ammocoetes	The combined natural range of these two species in terms of ammocoete distribution includes all units above the tidal limit ie. all except unit 1  Presence at less than 2/3 of sample sites will lead to an unfavourable condition assessment.  Reduction in distribution will be defined as absence of ammocoetes from all samples within a single unit or sub-unit/tributary, and will lead to an unfavourable condition assessment.	2-10
c) Ammocoete density	Optimal habitat: $>10\text{m}^{-2}$ Overall catchment mean: $>5\text{m}^{-2}$	Optimal habitat comprises beds of stable fine sediment or sand $\geq 15\text{cm}$ deep, low water velocity and the presence of organic detritus, as well as, in the Usk, shallower sediment, often patchy and interspersed among coarser substrate.	2-10

Twaite shad *Alosa fallax* and Allis shad *Alosa alosa* :  
**Performance indicators for feature condition**

<i>Attribute</i>	<i>Specified limits</i>	<i>Comments</i>	<i>Relevant unit(s)</i>
a) Spawning distribution	No decline in spawning distribution	Spawning distribution is assessed by kick sampling for eggs and/or observations of spawning adults. A representative sample of	1-5

		sites within units 2 to 5 will be monitored at 3 yearly intervals. Absence from any site in 2 consecutive surveys will result in an unfavourable condition assessment.	
<b>Performance indicators for factors affecting the feature</b>			
a) Flow	Targets are set in relation to river/reach type(s)	Targets equate to those levels agreed and used in the Review of Consents (see Annex 1). Shad are particularly sensitive to flow. The ideal regime is one of relatively high flows in March-May, to stimulate migration and allow maximum penetration of adults upstream, followed by rather low flows in June-September, which ensures that the juveniles are not washed prematurely into saline waters and grow rapidly under warmer conditions. The release of freshets to encourage salmonid migration should therefore be discouraged on shad rivers during this period.	1-5

Atlantic salmon <i>Salmo salar</i> :			
<b>Performance indicators for feature condition</b>			
<b>Attribute</b>	<b>Specified limits</b>	<b>Comments</b>	<b>Relevant unit(s)</b>
a) Adult run size	Conservation Limit complied with at least four years in five (see 5.4)	CSM guidance states: Total run size at least matching an agreed reference level, including a seasonal pattern of migration characteristic of the river and maintenance of the multi-sea-winter component.  As there is no fish counter in the Usk, adult run size is calculated using rod catch data. Further details can be found in the EA Usk Salmon Action Plan.	All
b) Juvenile densities	Expected densities for each sample site using HABSCORE	CSM guidance states: These should not differ significantly from those expected for the river type/reach under conditions of high physical and chemical quality.  Assessed using electrofishing data.	6-10

<b>Performance indicators for factors affecting the feature</b>			
<b>Water quality</b>			
a) Biological quality	Biological GQA class A	This is the class required in the CSM guidance for Atlantic salmon, the most sensitive feature.	6-10
b) Chemical quality	RE1	It has been agreed through the Review of Consents process that RE1 will be used throughout the SAC (see Annex 3)	All
<b>Hydromorphology</b>			
a) Flow	Targets are set in relation to river/reach type(s)	Targets equate to those levels agreed and used in the Review of Consents (see Annex 1)	All

Bullhead <i>Cottus gobio</i> : Performance indicators for feature condition			
Attribute	Specified limits	Comments	Relevant unit(s)
a) Adult densities	No less than 0.2 m <sup>-2</sup> in sampled reaches	CSM guidance states that densities should be no less than 0.2 m <sup>-2</sup> in upland rivers (source altitude >100m) and 0.5 m <sup>-2</sup> in lowland rivers (source altitude ≤100m). A significant reduction in densities may also lead to an unfavourable condition assessment.	2-10
b) Distribution	Bullheads should be present in all suitable reaches. As a minimum, no decline in distribution from current	Suitable reaches will be mapped using fluvial audit information validated using the results of population monitoring. Absence of bullheads from any of these reaches, or from any previously occupied reach, revealed by on-going monitoring will result in an unfavourable condition assessment.	2-10
c) Reproduction / age structure	Young-of-year fish should occur at densities at least equal to adults	This gives an indication of successful recruitment and a healthy population structure. Failure of this attribute on its own would not lead to an unfavourable condition assessment.	2-10

#### 4.3 Conservation Objective for Feature 6:

- European otter *Lutra lutra* (EU Species Code: 1355)

##### Vision for feature 6

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

FCS component	Supporting information / current knowledge
<b>4.3.1 The population of otters in the SAC is stable or increasing over the long term and reflects the natural carrying capacity of the habitat within the SAC, as determined by natural levels of prey abundance and associated territorial behaviour.</b>	Refer to section 5.9 for current assessment of feature population
<b>4.3.2 The natural range of otters in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches that are potentially suitable to form part of a breeding territory and/or provide routes between breeding territories. The whole area of the Usk SAC is considered to form potentially suitable breeding habitat for otters. The size of breeding territories may</b>	Survey information shows that otters are widely distributed in the Usk catchment. While the breeding population in the Usk is not currently considered to be limited by the availability of suitable breeding sites, there is some uncertainty over the number of breeding territories which the SAC is capable of supporting given near-natural levels of prey abundance.  The decline in eel populations may be having an adverse effect on the population of otters in the Usk.

vary depending on prey abundance. The population size should not be limited by the availability of suitable undisturbed breeding sites. Where these are insufficient they should be created through habitat enhancement and where necessary the provision of artificial holts. No otter breeding site should be subject to a level of disturbance that could have an adverse effect on breeding success. Where necessary, potentially harmful levels of disturbance must be managed.

<b>4.3.3</b>	<b>The safe movement and dispersal of individuals around the SAC is facilitated by the provision, where necessary, of suitable riparian habitat, and underpasses, ledges, fencing etc at road bridges and other artificial barriers.</b>	Restrictions on the movement of otters around the SAC, and between adjoining sites are currently a particular concern in the reach through Newport as a result of a continued decrease in undisturbed suitable riparian habitat.
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#### Performance indicators for feature 6

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

<i>Performance indicators for feature condition</i>			
<i>Attribute</i>	<i>Specified limits</i>	<i>Comments</i>	<i>Relevant unit(s)</i>
a) Distribution	Otter signs present at 90% of Otter Survey of Wales sites	Ref: CCW Environmental Monitoring Report No 19 (2005) <sup>3</sup>	All
b) Breeding activity	2 reports of cub/family sightings at least 1 year in 6	Ref: CCW Environmental Monitoring Report No 19 (2005) <sup>3</sup>	All
c) Actual and potential breeding sites	No decline in number and quality of mapped breeding sites in sub-catchments (see Ref)	Ref: CCW Environmental Monitoring Report No 19 (2005) <sup>3</sup>  In the Usk catchment, 77 actual or potential breeding sites have been identified, distributed throughout the catchment on the main river and tributaries.	All

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#### 4.4 Conservation Objective for Feature 7:

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

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#### Vision for feature 7

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

FCS component	Supporting information / current knowledge
<b>4.4.1</b> The conservation objective for the water course as defined in 4.1 above must be met	
<b>4.4.2</b> The natural range of the plant communities represented within this feature should be stable or increasing in the SAC. The natural range is taken to mean those reaches where predominantly suitable habitat exists over the long term. Suitable habitat and associated plant communities may vary from reach to reach. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms eg. depth and stability of flow, stability of bed substrate, and ecosystem structure and functions eg. nutrient levels, shade (as described in section 2.4). Suitable habitat for the feature need not be present throughout the SAC but where present must be secured for the foreseeable future, except where natural processes cause it to decline in extent.	More information is required on the natural range and distribution of this feature in the Usk. Important examples of the feature may be present outside currently known locations. Sympathetic management will be promoted wherever the feature is present.  Species indicative of unfavourable condition for this feature eg. filamentous algae associated with eutrophication, invasive non-native species, should be maintained or restored below an acceptable threshold level, indicative of high ecological status, within the SAC.
<b>4.4.3</b> The area covered by the feature within its natural range in the SAC should be stable or increasing.	Important stands of the feature are known to occur within site management unit nos. 2, 3 & 10. Management to maintain or increase the feature within these units will be a priority. Adverse factors may include elevated nutrient levels, shading or altered flow and/or sediment transport regimes.
<b>4.4.4</b> The conservation status of the feature's typical species should be favourable. The typical species are defined with reference to the species composition of the appropriate JNCC river vegetation type for the particular river reach, unless differing from this type due to natural variability when other typical species	More information on the typical species expected to be found with each management unit in the SAC is required.

may be defined as appropriate.

### Performance indicators for feature 7

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

<b>Performance indicators for feature condition</b>			
<b>Attribute</b>	<b>Specified limits</b>	<b>Comments</b>	<b>Relevant unit(s)</b>
a) Distribution within catchment	Distribution within site units 2,3 & 10	<i>Ranunculus</i> spp. will be present with an MTR species cover score of at least 5 in:  Any three representative sample 100m stretches of suitable habitat between Usk Town bridge and the bridge at Newbridge-on-Usk: AND In one representative sample 100m stretch of suitable habitat along the Senni	2,3,10
b) Typical species	Species list for reference vegetation type	Should conform to appropriate JNCC type or other list for site unit as appropriate. Details to be confirmed	2,3,10
<b>Performance indicators for factors affecting the feature</b>			
<b>Negative indicators</b>			
a) Native species	Cover of indicators of eutrophication maintained below threshold over the medium to long term	CSM guidance states: Care should be taken with the setting of these targets as thresholds may vary considerably by site and conservation goals.  For the Usk SAC:  Algae indicative of eutrophication ( <i>Enteromorpha</i> spp., <i>Cladophora</i> spp. and <i>Vaucheria</i> spp.) should not have an MTR cover value of greater than 5 (ie.10%) in 3 consecutive years in:  Any three representative sample 100m stretches of suitable habitat between Usk Town bridge and the bridge at Newbridge-on-Usk: AND In one representative sample 100m stretch of suitable habitat along the Senni	2,3,10
b) Alien / introduced species	No impact on native biota from alien or introduced species	In the CSM guidance, the SERCON scoring system for naturalness of aquatic and marginal macrophytes and naturalness of banks and riparian zone, are used to assess this attribute. SERCON protocols have not been applied in the Usk SAC, therefore assessment of this attribute relies on locally defined thresholds and expert judgement. Details to be confirmed	



## **5. ASSESSMENT OF CONSERVATION STATUS AND MANAGEMENT REQUIREMENTS**

This part of the document provides:

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

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### **5.1 Conservation status and management requirements of Feature 1: Sea lamprey *Petromyzon marinus***

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#### **Conservation status**

Status: Unfavourable: Unclassified. Sea lamprey monitoring showed that overall catchment mean ammocoete density considerably exceeded the JNCC target threshold and also complied with targets for spawning site and ammocoete distribution. A caveat on the latter is uncertainty over whether the natural range of sea lamprey extends above Brecon weir: this is assumed not to be the case.

Factors leading to an unfavourable assessment are the presence of probable partial barriers further downstream (notably Crickhowell Bridge), and flow depletion resulting from abstractions including Brecon canal and Prioress Mill public water supply abstraction. The latter in particular has been shown to have effects both on a seasonal timescale by reducing spate flows during the migration period and on a diurnal timescale by substantially depleting flows during the night time to the extent that sea lamprey nests and nursery areas are likely to be exposed above the water level. The effect of the Brecon canal abstraction has been shown to comprise a substantial depletion of flows, at least locally, during low flow periods with a resulting reduction in river depth downstream of the off-take weir.

#### **Management requirements**

The impacts of barriers to migration and flow depletion are highlighted in the assessment of conservation status for this feature. The impact of barriers should be assessed on a case-by-case basis. Physical modification of barriers is required where depth/velocity/duration of flows is unsuitable to allow passage. Crickhowell Bridge is considered to be the most significant barrier to fish migration in the Usk. Management to reduce or remove the effect of this barrier is a high priority for the River Usk SAC. An assessment of options will be carried out in conjunction with the other relevant competent authorities.

The impact of acoustic (ie noise/vibration) and sediment/chemical barriers arising from plans or projects should also be assessed. When arising from construction or other development related activities it may be necessary to restrict the timing of such activities.

The impact of flow depletion resulting from a small number of major abstractions was highlighted in the Review of Consents process. As a result of this process, flow targets have been set which are considered likely to significantly reduce or remove the impacts on SAC features. These targets (given in Annex 1) are expressed as, 1) a flow duration curve using recent daily mean flow data, used to set abstraction licence conditions including 'hands-off flows', 2) hourly maximum abstraction rates for certain licences to reduce or remove the effect of diurnal flow variations. There are also requirements for screening of intakes to reduce or remove the impact of impingement and entrainment on juvenile fish migrating downstream.

Entrainment in water abstractions directly impacts on population dynamics through reduced recruitment and survival rates. Information on likely rates of entrainment of lamprey ammocoetes is required before acceptable levels can be assessed.

The extent and quality of suitable sea lamprey habitat must be maintained. Elevated levels of fines (particles <0.83mm) within spawning substrates can interfere with egg survival. Spawning habitat consists of well-oxygenated gravel/pebble substrate of >10cm depth in a range of water depths (0.2 to 1.5m). Sea and river lamprey tend to spawn in deeper water than brook lamprey. Nursery habitat consists of open-structured, aerated, silty and sandy substrates between 2 and 40cm depth generally in shallow (<0.5m) slack-water channel margins.

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## **5.2 Conservation status and management requirements of Feature 2: Brook lamprey *Lampetra planeri* and River lamprey *Lampetra fluviatilis***

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### **Conservation status**

Status: Favourable. Brook/river lamprey monitoring showed that overall catchment mean ammocoete density considerably exceeded the JNCC target threshold and also complied with targets for ammocoete distribution<sup>1</sup>.

It has not been possible to distinguish between these two species during monitoring, due to the reliance on juvenile stages (ammocoetes). Anecdotal evidence suggests that both species are likely to be present in many reaches, though brook lamprey are expected to predominate in the headwaters and river lamprey may be the more abundant species in the main channel and the lower reaches of larger tributaries. More information on the relative abundance of these two species in different parts of the Usk SAC is desirable. Records of spawning adult river lamprey would be particularly useful.

### **Management requirements**

The extent and quality of suitable habitat for brook and river lamprey must be maintained. Elevated levels of fines (particles <0.83mm) within spawning substrates can interfere with egg survival. Spawning habitat consists of well-oxygenated gravel/pebble substrate of >10cm depth in a range of water depths (0.2 to 1.5m). Sea and river lamprey tend to spawn in deeper water than brook lamprey. Nursery habitat consists of open-structured, aerated, silty and sandy substrates between 2 and 40cm depth generally in shallow (<0.5m) slack-water channel margins.

Entrainment in water abstractions directly impacts on population dynamics through reduced recruitment and survival rates. Information on likely rates of entrainment of lamprey ammocoetes is required before acceptable levels can be assessed.

The currently favourable condition assessment suggests that there are no strongly adverse factors influencing these species. However, the species are likely to benefit from positive management for the other SAC features, and may see further improvement in condition as a result. On-going monitoring will allow a better understanding of population fluctuations, distributional changes etc.

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## **5.3 Conservation status and management requirements of Feature 3: Twaite shad *Alosa fallax* and Allis shad *Alosa alosa***

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### **Conservation status**

Status: Unfavourable: Unclassified. Monitoring of these species in the Usk relies on two methods,

- i. Kick sampling for eggs provides qualitative information on spawning distribution,
- ii. Netting for juveniles in the lower river and tidal reaches during late summer/autumn when juveniles drift downstream towards the estuary.

These methods do not distinguish between the two species. Allis shad is thought to be rare, with no recent records in the Usk, while twaite shad is relatively common. Kick sampling for eggs is only able to give a broad scale indication of presence or absence at sampled locations. Netting for juveniles gives a quantitative estimate of abundance, though may be subject to a high degree of uncertainty due to sampling error. This uncertainty is likely to be compounded by variation between years in the size of the adult run, spawning success and resulting numbers of juveniles. Poor adult runs are likely to result from unsuitable flows during the March to June migration period, in particular prolonged low flows, while poor survival of eggs and juveniles is related to spate flows in the mid to late summer which can flush them into the estuary prematurely.

CSM guidance states that adult run size should comply with an agreed target for each river, with no drop in the annual run greater than would be expected from variations in natural mortality alone. This attribute is not currently assessed in the Usk due to the absence of a fish counter.

The current unfavourable status results from a precautionary assessment of feature distribution and abundance, and from the presence of adverse factors, in particular flow depletion and physical barriers to migration.

### **Management requirements**

The impacts of barriers to migration and flow depletion are highlighted in the assessment of conservation status for these features.

Artificial physical barriers are probably the single most important factor in the decline of shad in Europe. Impassable obstacles between suitable spawning areas and the sea can eliminate breeding populations of shad. Both species (but particularly allis shad) can make migrations of hundreds of kilometres from the estuary to spawning grounds in the absence of artificial barriers. Existing fish passes designed for salmon are often not effective for shad. Any new provisions need to take their requirements into account. The impact of existing barriers in the Usk should be assessed on a case-by-case basis. Physical modification of barriers is required where depth/velocity/duration of flows is unsuitable to allow passage. Crickhowell Bridge is considered to be the most significant barrier to fish migration in the Usk. Management to reduce or remove the effect of this barrier is a high priority for the River Usk SAC. Other barriers that may be significant include Trostrey Weir and Radyr Weir. An assessment of options will be carried out in conjunction with the other relevant competent authorities.

Development pressure in the lower catchment can cause temporary physical, acoustic, chemical and sediment barrier effects that need to be addressed in the assessment of specific plans and projects. Noise/vibration e.g. due to impact piling, drilling, salmon fish counters present within or in close proximity to the river can create a barrier to shad migration. Land on both sides of the river in Newport is potentially highly contaminated. Contamination of the river can arise when this is disturbed e.g. as a result of development. Contamination can also arise from pollution events (which could be shipping or industry related). Barriers resulting from vibration, chemicals, low dissolved oxygen and artificially high sediment levels must be prevented at key times (generally March to June). The possible barrier effects that might be caused by the installation of an acoustic salmonid fish counter should also be evaluated.

The impact of flow depletion resulting from a small number of major abstractions was highlighted in the Review of Consents process. As a result of this process, flow targets have been set which are considered likely to significantly reduce or remove the impacts on SAC features. These targets (given in Annex 1) are expressed as, 1) a flow duration curve using recent daily mean flow data, which is used to set abstraction licence conditions including 'hands-off flows', 2) hourly maximum abstraction rates for certain licences to reduce or remove the effect of diurnal flow variations. There are also requirements for screening of intakes to reduce or remove the impact of impingement and entrainment on juvenile shad drifting downstream and post-spawning adult shad.

The extent and quality of suitable shad habitat must be maintained. Spawning habitat is defined as stable, clean gravel/pebble-dominated (approximately 70%) substrate without an armoured layer and with <10% fines in the top 30 cm. Water depth during the spawning and incubation periods should be 50-75 cm. Holding areas are defined as pools of at least 200 cm depth, with cover from features such as undercut banks, vegetation, submerged objects and surface turbulence.

Anglers occasionally fish for shad, and they are sometimes taken in quite large numbers. Further research is necessary to define sustainable levels of angling. If this shows there is cause for concern, a temporary cessation of fishing activity in the vicinity of known spawning grounds during the spawning period should be considered, particularly where shad are known to be taken regularly. Exploitation of shad is currently unregulated and controls are being considered through the review of freshwater fisheries legislation.

Commercial fishermen also take shad as a by-catch, with whitebait and shrimp fishing being of particular concern. Changes in fishing methods need to be promoted to minimize captures, whilst both anglers and trawler men should be encouraged to return alive any individuals caught.

Artificially enhanced densities of other fish may introduce unacceptable competition or predation pressure and the aim should be to minimise these risks in considering any proposals for stocking.

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#### **5.4 Conservation status and management requirements of Feature 4: Atlantic salmon *Salmo salar***

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##### **Conservation status**

Status: Unfavourable: Unclassified. Monitoring of Atlantic salmon in the Usk relies on two methods,

- i. Estimation of adult run size from angling catch returns,
- ii. Electro-fishing for juveniles in nursery areas.

The estimate of adult numbers is converted into an estimate of numbers of eggs deposited which is compared against an Egg Deposition Target (EDT), calculated by considering the area of suitable spawning habitat within the catchment. The equivalent adult run to achieve the EDT is described in terms of a Conservation Limit, which must be exceeded 4 years in 5 for the Management Target to be considered attained. Electro-fishing for juveniles is either quantitative or semi-quantitative, and estimated juvenile densities are classified in one of six categories A to F. The monitoring guidance produced by the LIFE in UK Rivers project recommends that ideally juvenile densities should be compared to predicted densities for the sample reach using the HABSCORE model<sup>6</sup>. These targets are calculated and monitored by the Environment Agency as part of the Salmon Action Plan for the Usk.

The current unfavourable status results from a precautionary assessment of feature distribution and abundance, in particular the results of juvenile surveys, and from the presence of adverse factors, in particular flow depletion and localised water quality failures.

##### **Management requirements**

The Atlantic salmon is the focus for much of the management activity carried out on the Usk. The relatively demanding water quality and spawning substrate quality requirements of this feature mean that reduction in diffuse pollution and siltation impacts is a high priority. Measures to address these problems include the establishment of buffer zones on reaches adjacent to intensively managed livestock grazing or arable land. Tree management, especially coppicing and pollarding to increase light levels to the channel, is also often carried out. The Wye and Usk Foundation through their Usk Project have carried out much of this work in recent years. Other work has included removal of weirs and construction of fish passes to ease artificial barriers to salmon migration, and reduction in exploitation pressure through buying out net fisheries in the estuary.

Elevated levels of fines (particles <0.83mm) within spawning substrates can interfere with egg and fry survival. Clean substrate free from excessive siltation should predominate at suitable spawning sites. Spawning habitat is defined as stable coarse substrate without an armoured layer, in the pebble to cobble size range (16-256 mm) but with the majority being <150 mm. Water depth during the spawning and incubation periods should be 15-75 cm. Fry habitat is indicated by water of <20 cm deep and a gravel/pebble/cobble substrate. Parr habitat is indicated by water 20-40 cm deep and similar substrate. Holding areas are defined as pools of at least 1.5 m depth, with cover from features such as undercut banks, vegetation, submerged objects and surface turbulence. Coarse woody debris should not be removed from rivers as it plays a significant role in the formation of new gravel beds, and provides cover for fish and a source of food for invertebrates.

In the Usk catchment, the most significant sources of diffuse pollution and siltation are from agriculture, including fertiliser run-off, livestock manure, silage effluent and soil erosion from ploughed land. The most intensively used areas such as heavily trampled gateways and tracks can be especially significant sources of polluting run-off. Preventative measures can include surfacing of tracks and gateways, moving feeding areas, and separating clean and dirty water in farmyards. Farm operations should avoid ploughing land which is vulnerable to soil erosion or leaving such areas without crop cover during the winter.

Among toxic pollutants, sheep dip and silage effluent present a particular threat to aquatic animals in this predominantly rural area. Contamination by synthetic pyrethroid sheep dips, which are extremely toxic to aquatic invertebrates, has a devastating impact on crayfish populations and can deprive fish populations of food over large stretches of river. These impacts can arise if recently dipped sheep are allowed access to a stream or hard standing area, which drains into a watercourse. Pollution from organophosphate sheep dips and silage effluent can be very damaging locally. Pollution from slurry and other agricultural and industrial chemicals, including fuels, can kill all forms of aquatic life. All sheep dips and silage, fuel and chemical storage areas should be sited away from watercourses or bunded to contain leakage. Recently dipped sheep should be kept off stream banks. Used dip should be disposed of strictly in accordance with Environment Agency Regulations and guidelines. Statutory and voluntary agencies should work closely with landowners and occupiers to minimise the risk of any pollution incidents and enforce existing regulations.

Measures to control diffuse pollution in the water environment, including 'Catchment Sensitive Farming', may be implemented as a result of the Water Framework Directive and, along with existing agri-environment schemes, will help to achieve the conservation objectives for the SAC.

Discharges from sewage treatment works, urban drainage, engineering works such as road improvement schemes, contaminated land, and other domestic and industrial sources can also be significant causes of pollution, and must be managed appropriately. Current consents for discharges entering, or likely to impact upon the site should be monitored, reviewed and altered if necessary.

Overhanging trees provide valuable shade and food sources, whilst tree root systems provide important cover and flow refuges for juveniles. At least 50% high canopy cover to the water course/banks should be maintained, where appropriate. Some reaches may naturally have lower tree cover. Cover may also be lower in urban reaches.

In all river types, artificial barriers should be made passable. The impact of existing barriers in the Usk should be assessed on a case-by-case basis. Physical modification of barriers is required where depth/velocity/duration of flows is unsuitable to allow passage. Complete or partial natural barriers to potentially suitable spawning areas should not be modified or circumvented.

Development pressure in the lower catchment can cause temporary physical, acoustic, chemical and sediment barrier effects that need to be addressed in the assessment of specific plans and projects. Land on both sides of the river in Newport is potentially highly contaminated. Contamination of the

river can arise when this is disturbed eg as a result of development. Contamination can also arise from pollution events (which could be shipping or industry related) e.g. chemical spillage, low dissolved oxygen.

Entrainment in water abstractions directly impacts on population dynamics through reduced recruitment and survival rates. Intake screens must meet statutory requirements under the Salmon & Freshwater Fisheries Act.

There is currently no stocking of salmon into the Usk. The management objectives for SAC salmon populations are to attain naturally self-sustaining populations. Salmon stocking should not be routinely used as a management measure. Salmon stocking represents a loss of naturalness and, if successful, obscures the underlying causes of poor performance (potentially allowing these risks to perpetuate). It carries various ecological risks, including the loss of natural spawning from broodstock, competition between stocked and naturally produced individuals, disease introduction and genetic alterations to the population. Therefore, there is a presumption against salmon stocking in the Usk SAC.

The presence of artificially high densities of other fish can create unacceptably high levels of predatory and competitive pressure on juvenile salmon and the aim should be to minimise these risks in considering any proposals for stocking. Escapes from fish farms are a form of uncontrolled introduction and should be prevented by effective screening on all intakes and discharges.

Controls on exploitation should include migratory passage to the SAC within territorial waters, including estuarine and coastal net fisheries, as well as exploitation within the SAC from rod fisheries. Net Limitation Orders are used to control the estuarine fishery. Exploitation of salmon by rod fisheries is regulated by EA licensing and byelaws controlling the fishing season and allowable methods.

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## **5.5 Conservation status and management requirements of Feature 5: Bullhead *Cottus gobio***

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### **Conservation status**

Status: Unfavourable: Unclassified. The current unfavourable status results from the presence of adverse factors, in particular flow depletion and localised water quality failures. Records obtained from juvenile salmon monitoring show that bullhead are widespread in the main river and tributaries. There is a need for quantitative information on bullhead abundance, which will be addressed by targeted monitoring in 2007.

### **Management requirements**

Vertical drops of >18-20 cm are sufficient to prevent upstream movement of adult bullheads. They will therefore prevent recolonisation of upper reaches affected by lethal pollution episodes, and will also lead to constraints on genetic interactions that may have adverse consequences. New instream structures should be avoided, whilst the impact of existing artificial structures needs to be evaluated.

The extent and quality of suitable bullhead habitat must be maintained. Elevated levels of fines can interfere with egg and fry survival. Spawning habitat is defined as unsilted coarse (gravel/pebble/cobble) dominated substrate: males guard sticky eggs on the underside of stones. Larger stones on a hard substrate providing clear spaces between the stream bed and the underside of pebbles/cobbles are therefore important.

The importance of submerged higher plants to bullhead survival is unclear, but it is likely that where such vegetation occurs it is used by the species for cover against predators. Weed cutting should be limited to no more than half of the channel width in a pattern of cutting creating a mosaic of bare substrate and beds of submerged plants. Slack-water areas provide important refuges against high flow

conditions. Suitable refuges include pools, submerged tree root systems and marginal vegetation with >5 cm water depth.

Bullheads are particularly associated with woody debris in lowland reaches, where it is likely that it provides an alternative source of cover from predators and floods. It may also be used as an alternative spawning substrate. Debris dams and woody debris should be retained where characteristic of the river/reach. Woody debris removal should be minimised, and restricted to essential activities such as flood defence.

Maintenance of intermittent tree cover in conjunction with retention of woody debris helps to ensure that habitat conditions are suitable. At least 50% high canopy cover to the water course/banks should be maintained, where appropriate. Some reaches may naturally have lower tree cover. Cover may also be lower in urban reaches.

Bullhead densities have been found to be negatively correlated with densities of non-native crayfish, suggesting competitive and/or predator-prey interactions. Non-native crayfish should be absent from the SAC.

The presence of artificially high densities of salmonids and other fish will create unacceptably high levels of predatory and competitive pressure on juvenile and adult bullhead. Stocking of fish should be avoided in the SAC.

Escapes from fish farms are a form of uncontrolled introduction and should be prevented by effective screening on all intakes and discharges.

Bullheads are relatively sedentary and interactions between populations in different parts of the catchment and in different catchments are likely to be limited, suggesting the existence of genetically discrete populations. Since they are of no angling interest, deliberate transfers between sites are unlikely to have been undertaken in the past, such that the genetic integrity of populations is likely to be intact. There should be no stocking/transfers of bullhead unless agreed to be in the best interests of the population.

In general, management for other SAC features is expected to result in favourable habitat for bullhead, through improvements in water quality and flow regime and maintenance of suitable physical habitat.

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## **5.6 Conservation status and management requirements of Feature 6: European otter *Lutra lutra***

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### **Conservation status**

Status: Favourable. The conservation status of otters in the Usk SAC is determined by monitoring their distribution, breeding success, and the condition of potential breeding and feeding habitat outlined in the Performance Indicators. Their current condition can be considered favourable, but with scope for further improvement, if habitat and other natural factors can be maintained and enhanced.

### **Management requirements**

The catchment should be capable of supporting at least 18 breeding females, based on one breeding female per 20km stretch of river. It is possible that if all the breeding sites achieve optimal habitat conditions and fish and amphibian stocks are secured that the catchment may then support further breeding animals. However, the amount of compression of home ranges that otters will accept cannot as yet be determined<sup>3</sup>.

Management should aim to ensure that there is sufficient undisturbed breeding habitat to support an otter population of a size determined by natural prey availability and associated territorial behaviour.

The involvement of river users and land managers will be important in improving potential breeding habitat near to the river. Agri-environment schemes and the Better Woodlands for Wales scheme provide possible mechanisms for maintaining suitable sites, such as lightly grazed woodlands, areas of dense scrub, and tussocky fens with purple moor-grass.

Food availability is an important factor. Fish biomass should stay within expected natural fluctuations. A potential problem appears to be the decline in eel populations, and similar concerns are apparent with respect to amphibian numbers.

Measures to ensure the safe movement of otters around the catchment will be promoted, in particular the provision of ledges, tunnels and fencing on new road bridge schemes. Where bridges are being repaired or replaced, or at especially bad locations for otter road deaths, such features may be retro-fitted.

Certain areas of the SAC are critical to the movement of otters both within the system and to adjacent sites. The Usk SAC provides a key movement corridor for otters passing between the relatively high densities in mid Wales and the south-east Wales coastal strip (Seven Estuary and Gwent Levels). The function of this aspect of the site should be protected through the maintenance of suitable resting sites (in terms of size, quality and levels of disturbance) through the major urban centre of Newport.

Pollution of rivers with toxic chemicals, such as PCBs, was one of the major factors identified in the widespread decline of otters during the last century. There should be no increase in pollutants potentially toxic to otters.

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## **5.7 Conservation status and management requirements of Feature 7: Water courses of plain to montane levels with the *Ranunculon fluitantis* and *Callitricho-Batrachion* vegetation**

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### **Conservation status**

Status: Unfavourable: Unclassified. This feature is not identified as one of the primary reasons for designation of the River Usk SAC; its distribution being apparently limited by the availability of suitable hydromorphological conditions. Important stands have been identified in the lower reaches of the main river below Abergavenny down to the tidal limit, and in the upper reaches of a headwater stream, the Afon Senni. These reaches may represent a sub-type of the feature where large submerged and floating leaved flowering plants, in particular *Ranunculus*, are dominant. Habitat suitability studies<sup>4</sup> suggest that the natural range of the feature may be more widespread within the SAC. More widespread sub-types may consist of communities dominated by aquatic bryophytes. Where necessary, examples of these sub-types may be identified as priorities for management, for example through the management of riparian vegetation to preserve shade and humidity. Further understanding of the distribution and status of this feature and its natural range within the River Usk SAC is required.

The present unfavourable status of the feature results from the over-abundance of invasive non-native species of bankside plant communities, which are included within the feature definition. These are predominantly giant hogweed and Himalayan balsam in the lower reaches of the main river.

### **Management requirements**

Factors that are important to the favourable conservation status of this feature include flow, substrate quality and water quality, which in turn influence species composition and abundance. These factors often interact, producing unfavourable conditions by promoting the growth of a range of algae and other species indicative of eutrophication. Under conditions of prolonged low flows and high nutrient status, epiphytic algae may suppress the growth of aquatic flowering plants. Favourable management for this feature is therefore largely dependent on ensuring that sufficient depth, velocity and duration of flow and sufficiently low phosphate levels are maintained within the natural range of the vegetation.



A favourable flow regime can be defined with reference to naturalised flows (removing the influence of artificial abstractions and discharges from flow records). While more sophisticated analysis of depth and velocity has been carried out locally for the Review of Consents process, a flow level criterion is generally applied to regulate abstractions. Based on current available information, the recent level of flow depletion downstream of major abstractions in the River Usk SAC is not considered to be damaging to this feature, either through limiting its range or adversely affecting its community composition<sup>5</sup>.

The conservation objectives require that the area covered by the feature is stable or increasing within its natural range, which is likely to require catchment-wide measures to control diffuse pollution from agriculture, as the principal source of phosphate. Measures should be targeted initially at those reaches identified as holding important stands of this vegetation, in particular the Afon Senni.

Invasive non-native plants are a detrimental impact on this feature. Giant hogweed, Himalayan balsam and Japanese knotweed should be actively managed to control their spread and hopefully reduce their extent in the SAC.

## **6. ACTION PLAN: SUMMARY**

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

<b>Unit Number</b>	<b>CCW Database Number</b>	<b>Unit Name</b>	<b>Summary of Conservation Management Issues</b>	<b>Action needed?</b>
001	000467	Tidal reach	Development pressures in Newport leading to increased disturbance and pollution risk.	Yes
002	000468	Prioress Mill to tidal limit	Dwr Cymru Prioress Mill abstraction causing flow depletion and fish entrainment. Invasive weeds affect river bank areas.	Yes
003	000469	Llanfoist Bridge to Prioress Mill	Trostrey Weir forms a partial barrier to migration of shad. Invasive weeds affect river bank areas.	Yes
004	000470	Crickhowell Bridge to Llanfoist Bridge	Trostrey Weir and Llanfoist Bridge form a partial barrier to migration of shad. Tipped waste affects a significant length of river bank at Llanfoist. Invasive weeds affect river bank areas.	Yes
005	000471	Brecon Weir to Crickhowell Bridge	Crickhowell Bridge forms a near-total barrier to migration of shad. Canal abstraction at Brecon Weir causes localised significant flow depletion at low flows. Himalayan balsam is invasive over large areas of river bank.	Yes
006	000472	Usk Reservoir to Brecon Weir & Afon Hydfer	Brecon Weir forms a partial barrier to fish migration. The main River Usk is partially regulated by Usk Reservoir. Forestry affects the upper part of Afon Hydfer. Agriculture and forestry affect run-off regime and water quality.	Yes
007	000473	Usk Tributaries, Brecon downstream	Partial barriers to fish migration at several locations. Caerfanell is regulated by Talybont Reservoir. Grwynne Fawr is regulated by Grwynne Fawr Reservoir. Agricultural land management affects run-off regime and water quality.	Yes
008	000474	Camlais, Bran & Ysgir	Agricultural land management affects run-off regime and water quality.	Yes
009	000475	Crai & Cilieni	Crai is regulated by Cray Reservoir. Agricultural land management affects run-off regime and water quality.	Yes
010	000476	Afon Senni	Agricultural land management affects run-off regime and water quality.	Yes
011	000488	Upper Nant Menascin	No known significant issues.	No

## **7. GLOSSARY**

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

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

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

boundaries as well as within sites. Conservation management may also be embedded within other frameworks for land/sea management carried out for purposes other than achieving the conservation objectives.

<b>Conservation objective</b>	The expression of the desired <b>conservation status</b> of a <b>feature</b> , expressed as a <b>vision for the feature</b> and a series of <b>performance indicators</b> . The conservation objective for a feature is thus a composite statement, and each feature has one conservation objective.
<b>Conservation status</b>	A description of the state of a <b>feature</b> that comprises both its <b>condition</b> and the state of the <b>factors</b> affecting or likely to affect it. Conservation status is thus a characterisation of both the current state of a feature and its future prospects.
<b>Conservation status assessment</b>	The process of characterising the <b>conservation status</b> of a <b>feature</b> with particular reference to whether the aspirations for it, as expressed in its <b>conservation objective</b> , are being met. The results of conservation status assessment can be summarised either as ‘favourable’ (i.e. conservation objectives are met) or unfavourable (i.e. conservation objectives are not met). However the value of conservation status assessment in terms of supporting decisions about <b>conservation management</b> , lies mainly in the details of the assessment of feature <b>condition</b> , <b>factors</b> and trend information derived from comparisons between current and previous conservation status assessments and condition assessments.
<b>Core Management Plan</b>	A CCW document containing the conservation objectives for a site and a summary of other information contained in a full site <b>Management Plan</b> .
<b>Factor</b>	Anything that has influenced, is influencing or may influence the <b>condition</b> of a <b>feature</b> . Factors can be natural processes, human activities or effects arising from natural process or human activities, They can be positive or negative in terms of their influence on features, and they can arise within a site or from outside the site. Physical, socio-economic or legal constraints on <b>conservation management</b> can also be considered as factors.
<b>Favourable condition</b>	See <b>condition</b> and <b>condition assessment</b>
<b>Favourable conservation status</b>	See <b>conservation status</b> and <b>conservation status assessment</b> <sup>3</sup>
<b>Feature</b>	The species population, habitat type or other entity for which a site is designated. The ecological or geological interest which justifies the designation of a site and which is the focus of conservation management.
<b>Integrity</b>	See <b>site integrity</b>
<b>Key Feature</b>	The habitat or species population within a <b>management unit</b> that is the primary focus of <b>conservation management</b> and <b>monitoring</b> in that unit.
<b>Management Plan</b>	The full expression of a designated site’s legal status, <b>vision</b> , <b>features</b> , <b>conservation objectives</b> , <b>performance indicators</b> and

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<sup>3</sup> A full definition of favourable conservation status is given in Section 4.

	management requirements. A complete management plan may not reside in a single document, but may be contained in a number of documents (including in particular <b>the Core Management Plan</b> ) and sets of electronically stored information.
<b>Management Unit</b>	An area within a site, defined according to one or more of a range of criteria, such as topography, location of <b>features</b> , tenure, patterns of land/sea use. The key characteristic of management units is to reflect the spatial scale at which <b>conservation management</b> and <b>monitoring</b> can be most effectively organised. They are used as the primary basis for differentiating priorities for conservation management and monitoring in different parts of a site, and for facilitating communication with those responsible for management of different parts of a site.
<b>Monitoring</b>	An intermittent (regular or irregular) series of observations in time, carried out to show the extent of compliance with a formulated standard or degree of deviation from an expected norm. In <b>Common Standards Monitoring</b> , the formulated standard is the quantified expression of favourable <b>condition</b> based on <b>attributes</b> .
<b>Operational limits</b>	The levels or values within which a <b>factor</b> is considered to be acceptable in terms of its influence on a <b>feature</b> . A factor may have both upper and lower operational limits, or only an upper limit or lower limit. For some factors an upper limit may be zero.
<b>Performance indicators</b>	The <b>attributes</b> and their associated <b>specified limits</b> , together with <b>factors</b> and their associated <b>operational limits</b> , which provide the standard against which information from <b>monitoring</b> and other sources is used to determine the degree to which the <b>conservation objectives</b> for a <b>feature</b> are being met. Performance indicators are part of, not the same as, conservation objectives. See also <b>vision for the feature</b> .
<b>Plan or project</b>	<b>Project:</b> Any form of construction work, installation, development or other intervention in the environment, the carrying out or continuance of which is subject to a decision by any public body or statutory undertaker. <b>Plan:</b> a document prepared or adopted by a public body or statutory undertaker, intended to influence decisions on the carrying out of <b>projects</b> . Decisions on plans and projects which affect Natura 2000 and Ramsar sites are subject to specific legal and policy procedures.
<b>Site integrity</b>	The coherence of a site's ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it is designated.
<b>Site Management Statement (SMS)</b>	The document containing CCW's views about the management of a site issued as part of the legal notification of an SSSI under section 28(4) of the Wildlife and Countryside Act 1981, as substituted.
<b>Special Feature</b>	See <b>feature</b>
<b>Specified limit</b>	The levels or values for an <b>attribute</b> which define the degree to which the attribute can fluctuate without creating cause for

	concern about the <b>condition</b> of the <b>feature</b> . The range within the limits corresponds to favourable, the range outside the limits corresponds to unfavourable. Attributes may have lower specified limits, upper specified limits, or both.
<b>Unit</b>	See <b>management unit</b>
<b>Vision for the feature</b>	The expression, within a <b>conservation objective</b> , of the aspirations for the <b>feature</b> concerned. See also <b>performance indicators</b> .
<b>Vision Statement</b>	The statement conveying an impression of the whole site in the state that is intended to be the product of its <b>conservation management</b> . A ‘pen portrait’ outlining the <b>conditions</b> that should prevail when all the <b>conservation objectives</b> are met. A description of the site as it would be when all the <b>features</b> are in <b>favourable condition</b> .

## **8. REFERENCES AND ANNEXES**

<sup>1</sup> Harvey JP & Cowx IG (2003). *Monitoring the River, Brook and Sea Lamprey*, Lampetra fluviatilis, L. planeri and Petromyzon marinus. Conserving Natura 2000 Rivers Monitoring Series No.5, English Nature, Peterborough.

[http://www.english-nature.org.uk/LIFEinUKRivers/species/lamprey\\_monitoring.pdf](http://www.english-nature.org.uk/LIFEinUKRivers/species/lamprey_monitoring.pdf)

<sup>2</sup> Hull International Fisheries Institute (2006). *Monitoring of lamprey in the rivers Wye and Usk SACs 2005-2006*. Unpublished report to CCW, available on request.

<sup>3</sup> Morgan P (2005). *Current and potential distribution, condition and breeding success of the otter (Lutra lutra) in the River Usk catchment*. CCW Environmental Monitoring Report No.19

<sup>4</sup> Geodata Institute (2005). *Fluvial audit of the Upper Usk Tributaries*. CCW

<sup>5</sup> Holmes NTH (2004). *A review of water quality monitoring on the Usk catchment using macrophytes*. Environment Agency Wales, South East Area

<sup>6</sup> Cowx IG & Fraser D (2003). *Monitoring the Atlantic Salmon*. Conserving Natura 2000 Rivers Monitoring Series No.7, English Nature, Peterborough.

[http://www.english-nature.org.uk/LIFEinUKRivers/species/salmon\\_monitoring.pdf](http://www.english-nature.org.uk/LIFEinUKRivers/species/salmon_monitoring.pdf)

## ANNEX 1 – STANDARDS USED IN THE USK REVIEW OF CONSENTS FOR FLOW

The flow target used in the Environment Agency (EA) Resource Assessment and Management Framework (RAM) for the River Usk utilises the Habitats Directive Ecological River Flow (HDERF) objective during the key fish migration period in April to June. The maximum permissible percentage reduction from naturalised flow levels during this period is given in Table 1. Within the River Usk SAC, all reaches above Abergavenny are classified as having Very High sensitivity to abstraction, and below Abergavenny as High sensitivity. At other times of year the flow objective is derived from the CAMS River Flow Objective and recent actual abstraction scenario, whichever is the more stringent. At low flows this is equivalent to the HDERF objective. Some licences including the major public water supply abstractions in the lower river have Hands-off Flow conditions, which prevent abstraction during low flows.

**Table 1 HDERF1 - River flow thresholds for SAC/SSSI rivers**

<b>EW band (sensitivity)</b>	<b>Maximum % reduction from daily naturalised flow</b>		
	<b>&gt;Qn50</b>	<b>Qn50-95</b>	<b>&lt;Qn95</b>
Very High	10	10	1-5
High	15	10	5-10

For reaches below reservoirs, the effect of abstraction from storage is excluded from the assessment, so that the target flow is a ‘benchmark’ flow, incorporating the reservoir compensation release, rather than a naturalised flow. At times of low flow, compensation releases may increase the flow downstream of the reservoir above natural levels. There may also be effects resulting from reduced water temperature.

## ANNEX 2 – STANDARDS USED IN THE USK REVIEW OF CONSENTS FOR PHOSPHATE

Source: ‘Usk Phosphate Target setting’ Environment Agency Wales Ref. No: EASE/TM/04/03

### INTRODUCTION

The Environment Agency, English Nature and the Countryside Council for Wales have agreed on a methodology for the determination of guideline phosphorus standards on SAC rivers. The methodology is based upon catchment geology and river size, and a set of guideline standards has been applied to the typology which permits a reasonable degree of anthropogenic change but which should be consistent with the favorable condition of SAC interest features. The full details can be found in WQTAG048b – Guideline Phosphorus Standards for SAC Rivers.

The purpose of this report is to detail how these guidelines have been applied to the Usk SAC.

### 1.1 Determining River Size Class

There are three size classes, representing headwaters, river, and large river (Table 1). The division is based on the river flow categories used in the General Quality Assessment and the River Habitat Survey (Table 2). By reference to these data, the river can be allocated to one of the 3 classes.

**Table 1.** River size classification

River class	GQA flow band
1 – Headwaters	1 – 2
2 – River	3 – 8
3 – Large river	9 – 10

**Table 2.** GQA Flow Bands

GQA flow band	Long Term Average Natural Flow (cumecs)	Equivalent in ML/day
1	<0.31	<26.8
2	<0.62	<53.6
3	<1.25	<108
4	<2.5	<216
5	<5.0	<432
6	<10	<864
7	<20	<1728
8	<40	<3456
9	<80	<6912
10	>80	>6912

When the SIMCAT model of the Usk was built, Hydrology provided flow gauge information, flow estimates and headwater flow estimates (see Usk SIMCAT Final Model Build Report). The information from these was used to determine the GQA flow band and hence the river class.

The main River Usk is classed as a ‘river’ from just below Usk reservoir to the tidal limit. The SAC tributaries will obviously start off as headwaters but invariably reach ‘river’ size by the time they enter the main river Usk. In order to differentiate the point at which the tributary changed from ‘headwater’ to ‘river’ class, detailed flow data along the length of the tributaries would be required rather than the usual two flow estimates that we currently have. Therefore, to keep the classification simple, the SAC tributaries will be classed as ‘river’ along their entire lengths.

### 1.2 Determining the Geological Class



**Table 3.** Geological classification

<b>A.</b> Hard upland geologies (all land over 330m)	Igneous, plus Cambrian to Devonian series and Carboniferous. Low porosity, poor geology with hill farming and v. low population density
<b>B.</b> Other Cambrian – Devonian, and Carboniferous	Hard mudstones, sandstones, limestones. Improved pasture plus some arable, low population density
<b>C.</b> Jurassic and Cretaceous limestones	Soft limestones and chalk. More intensive agriculture and higher population densities, but relatively resistant to P enrichment due to soil/geological adsorption capacity. Form major aquifers whose P levels set background P concentrations of the rivers
<b>D.</b> Triassic sandstones and mudstones	Soft sandstones and mudstones in lowland areas, agriculture and population densities similar to (C) but more vulnerable to P enrichment due to low adsorption capacity. Form major aquifers whose P levels set background P concentrations of the rivers
<b>E.</b> Mesozoic clay vales and Tertiary clays	Very low porosity, rich soils in lowland areas. Intensive agriculture and high population densities, yielding highest background P levels.

The Methodology identifies five geological types (Table 3).

The Usk catchment is predominantly Old Red Sandstone and was therefore assigned to category ‘B’.

### 1.3 Combining River Size and Geological Class

Combining the river size and geological class information allows an appropriate guideline standard to be allocated (Figure 1).

**Table 4.** Phosphorus values assigned to river types (total reactive phosphorus mg/l, except \* total phosphorus)

Geological class	1. Headwaters	2. River	3. Large river
<i>A</i>			
Natural	Undetectable	0.02	0.02
<b>Standard</b>	<b>0.02</b>	<b>0.04</b>	<b>0.06</b>
<b>Threshold</b>	<i>0.04</i>	<i>0.06</i>	<i>0.10</i>
<i>B</i>			
Natural	0.02	0.02	0.03
<b>Standard</b>	<b>0.06</b>	<b>0.06</b>	<b>0.10</b>
<b>Threshold</b>	<i>0.10</i>	<i>0.10</i>	<i>0.10</i>
<i>C</i>			
Natural	0.02	0.02	0.02
<b>Standard</b>	<b>0.04</b>	<b>0.06</b>	<b>0.06</b>
<b>Threshold</b>	<i>0.06</i>	<i>0.10</i>	<i>0.10</i>
<i>D</i>			
Natural	0.02	0.02	0.03
<b>Standard</b>	<b>0.06</b>	<b>0.06</b>	<b>0.10</b>
<b>Threshold</b>	<i>0.10</i>	<i>0.10</i>	<i>0.20</i>
<i>E</i>			
Natural	0.02	0.03	0.03
<b>Standard</b>	<b>0.06</b>	<b>0.10*</b>	<b>0.10*</b>
<b>Threshold</b>	<i>0.10</i>	<i>0.20*</i>	<i>0.20*</i>

The Usk SAC falls into flow category 2 ‘River’ and Geological class ‘B’, and therefore gets a P Target of 0.06 mg/l.

## ANNEX 3 – STANDARDS USED IN THE USK REVIEW OF CONSENTS FOR WATER QUALITY

Table 1 sets out the targets specified in the EA Appropriate Assessment for the River Usk Review of Consents. RE1 applies to all of the designated SAC reaches of the River Usk (RE2 applies to some non-designated tributaries).

**Table 1** River ecosystem (RE) classification

	Dissolved O xygen (% sat) 10%ile	Biological Oxygen Demand (mg/l) 90%ile	Total Ammonia (mg N/l) 90%ile	Un-ionised Ammonia (mg N/l) 95%ile	pH (lower limit as 5%ile, upper limit as 95%ile)	Hardness (mg/l CaCO <sub>3</sub> ) Mean	Dissolved Copper (µg/l) 95%ile	Total Zinc (µg/l) 95%ile
RE1	80	2.5	0.25	0.021	6.0-9.0	≤10 >10 and ≤50 >50 and ≤ 100 >100	5 22 40 112	30 200 300 500
RE2	70	4.0	0.6	0.021	6.0-9.0	≤10 >10 and ≤50 >50 and ≤ 100 >100	5 22 40 112	30 200 300 500

## **STANDARD DATA FORM for sites within the 'UK national site network of European sites'**

Special Protection Areas (SPAs) are classified and Special Areas of Conservation (SACs) are designated under:

- the Conservation of Habitats and Species Regulations 2017 (as amended) in England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters);
- the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) in Scotland;
- the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) in Northern Ireland; and
- the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) in the UK offshore area.

Each SAC or SPA (forming part of the UK national site network of European sites) has its own Standard Data Form containing site-specific information. The information provided here generally follows the same documenting format for SACs and SPAs, as set out in the [Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 \(2011/484/EU\)](#).

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

More general information on SPAs and SACs in the UK is available from the [SPA homepage](#) and [SAC homepage](#) on the JNCC website. These webpages also provide links to Standard Data Forms for all SAC and SPA sites in the UK.

<https://jncc.gov.uk/>

# Appendix D

## Legislation and Policy

A framework of international, European, national and local legislation and planning policy guidance exists to protect and conserve wildlife and habitats. This is described in the following sections. The reader will refer to the original legislation for the definitive interpretation.

### D.1.1 Designated Sites

A network of nationally designated sites has been established through the designation of Sites of Special Scientific Interest (SSSI) under the Wildlife and Countryside Act 1981 (as amended). The protection afforded by the Act means it is an offence to carry out or permit to be carried out any operation listed within the notification without the consent of the Statutory Nature Conservation Organisation<sup>15</sup> (Natural England).

The protection afforded to SSSIs is used to underpin the designation of areas at a European Level. European Sites comprise:

- Special Areas of Conservation (SAC) designated under the Conservation of Habitats and Species Regulations 2019 (Amendment) (EU Exit) (known as the Habitats Regulations);
- Special Protection Areas (SPA) designated under the Wildlife and Countryside Act.

Wetlands of International Importance (Ramsar sites) declared under the Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 are normally also notified as SSSIs but are only considered European Sites as a matter of UK and Local Government Policy.

The Habitats Regulations transpose the requirements of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the Habitats Directive) into law within England and Wales, while the Wildlife and Countryside Act transposes Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive) in the law within England and Wales. Equivalent legislation exists to transpose these directives in the law within Scotland and Northern Ireland.

The Habitats Regulations require that consideration is given to the implications of plans and projects (developments) on European Sites are considered. Specifically, Regulation 61(1) states:

*“A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which –*

*(a) is likely to have a significant effect on a European site or European marine site (either alone or in combination with other plans or projects), and*

*(b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications for that site in view of that site’s conservation objectives.”*

The formal consideration of effects on European Sites is therefore undertaken by the determining authority such as the Local Planning Authority.

Local Nature Reserves can be given protection against damaging operations through powers within the National Parks and Access to the Countryside Act 1949 (as amended). However, this protection is usually conveyed through inclusion of protection within local planning policy relating to these sites and other non-statutory sites such as sites of Importance for Nature Conservation.

These sites are protected by the relevant legislation regardless of whether planning permission is required. Where planning consent is required, they will also be protected by Planning Policy.

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<sup>15</sup> Section 28 of the Wildlife and Countryside Act 1981 (as substituted by Schedule 9 of the Countryside and Rights of Way Act 2000).

Country Parks, Local Wildlife Sites (LWS) including Sites of Importance for Nature Conservation (SINC), and Ancient Woodlands are protected by Planning Policy, which will apply to schemes which require planning consent.

## D.1.2 Protected and Notable Species

### European Protected Species

The Habitats Regulations convey special protection to a number of species which are listed in schedule 2 of the Regulations and are referred to as European Protected Species (EPS):

- All UK resident bat species;
- All whale and dolphin species;
- Large blue butterfly *Maculinea arion*;
- Common dormouse *Muscardinus avellanarius*;
- Pool frog *Rana lessonae*;
- Sand lizard *Lacerta agilis*;
- Fisher's estuarine moth *Gortyna borelii lunata*;
- Great crested newt *Triturus cristatus* ;
- European otter *Lutra lutra*;
- Wild cat *Felis silvestris*;
- Lesser Whirlpool Ram's-horn Snail *Anisus vorticulus*;
- Smooth snake *Coronella austriaca*;
- Sturgeon *Acipenser sturio*;
- Natterjack toad *Bufo calamita*; and
- All marine turtles.

Regulation 41 makes it an offence to:

- a) Deliberately capture, injure or kill any wild animal of a EPS;
- b) Deliberately disturb wild animals of such a species;
- c) Deliberately takes or destroys the eggs of such a species;
- d) Damages or destroys a breeding site or resting place of such an animal.

Disturbance in the context of the offences above is disturbance which is likely to impair the ability of the animals to survive, to breed or reproduce, to nurture their young, to hibernate, to migrate; or to affect significantly the local distribution of the species.

Licences can be granted by the relevant SNCO for developments (sometime referred to as EPS Licences or Derogation Licences) providing the purposes of the licence is for “*preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment*”.

### UK Protected Species

### Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981 provide protection to both EPS and other species including wild birds, water voles and reptiles.

All wild birds, their nests and eggs are protected with some rare species afforded extra protection from disturbance during the breeding season (these species are listed in Schedule 1 of the Act). It is illegal to take any wild bird or damage or destroy the nests and eggs of breeding birds. There are certain exceptions to this in respect of wildfowl, game birds and certain species that may cause damage.

In England and Wales water voles are listed on Schedule 5 of the Wildlife and Countryside Act 1981, receiving full protection since 2008. The Wildlife and Countryside Act 1981 together with amending legislation, lists the following offences:

- Intentionally killing, injuring or taking a water vole by any method;
- Intentionally or recklessly damaging or destroying a water vole place of shelter or protection;
- Intentionally or recklessly damaging disturbing a water vole whilst it is occupying such a structure or place it uses for shelter or protection;
- Intentionally or recklessly obstructing access to a water vole's place of shelter or protection;
- Selling, offering for sale, or possessing or transporting for the purposes of sale, any live or dead water vole, or any part or derivative, or advertising any of these for buying or selling.

All native reptile species in the UK are subject to partial protection from intentional or reckless killing or injury only.

### The Protection of Badgers Act 1992

Badger and their setts are protected under the Protection of Badgers Act 1992 which makes it an offence to kill, injure or take a badger, or interfere with a sett.

### Eels (England and Wales) Regulations 2009 and Salmon and Freshwater Fisheries Act 1975

The Salmon and Freshwater Fisheries Act 1975 and The Eels (England and Wales) Regulations 2009 list provisions such as maintaining fish passes where rivers may be obstructed by dams or weirs and the provision of screens on outlets to avoid entrapment of fish.

## D.1.3 Other Legislation Relating to Species

Public authorities listed in the Environment (Wales) Act 2016, including LPAs “*must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in doing so promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions*”.

Ecosystem resilience is defined as the capacity for ecosystems to adapt, and comprises the key characteristics:

- Diversity between and within ecosystems;
- The connections between and within ecosystems;
- The scale of ecosystems; and
- The condition of ecosystems (including their structure and functioning).

In complying with the Biodiversity and Resilience of Ecosystems Duty, it is necessary to have regard to:

- The list published under Section 7;

- The State of Natural Resources Report (SoNARR) published under Section 8<sup>16</sup>; and
- Any area statement published under Section 11 for an area that includes all or part of an area in relation to which the authority exercises functions.

Section 7 lists species and habitats which are ‘of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales’ (as decided by WG in consultation with Natural Resources Wales (NRW)).

Locally Protected Species which may be identified within County Local Biodiversity Action Plans (LBAP), the Royal Society for the Protection of Birds (RSPB) ‘Birds of Conservation Concern’ or Red Data books for example.

#### **D.1.4 Invasive Species**

Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) lists certain plants and animals that are not native to Great Britain and could pose a threat to our native species and habitats.

Under this legislation it is an offence to plant or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9. It is also an offence to sell or to release into the wild any plants or animals on the Schedule.

The Invasive Alien Species (Enforcement and Permitting) Order 2019 allows for the enforcement of the EU Invasive Alien Species Regulation 1143/2014 on the prevention and management of invasive alien plant and animal species in England and Wales, including the relevant licenses, permits and rules for keeping invasive alien species. Species on this list are no longer listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended).

People undertaking works in proximity to invasive non-native plant species should take all reasonable steps and exercise all due diligence to avoid committing an offence.

#### **D.1.5 Hedgerow Regulations 1997**

The Hedgerow Regulations 1997 set out a framework for the protection of hedgerows against removal where they are deemed to be important either due to their age, ecological or archaeological features. Approval is required from the local authority prior to the removal of hedgerows deemed Important under the Hedgerows Regulations.

#### **D.1.6 The Well-being of Future Generations Act**

The Well-being of Future Generations Act 2015<sup>17</sup> places a duty on public bodies to carry out sustainable development. In this Act “sustainable development” means the process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals.

The action a public body takes in carrying out sustainable development must include:

- (a) setting and publishing objectives (“well-being objectives”) that are designed to maximise its contribution to achieving each of the well-being goals, and
- (b) taking all reasonable steps (in exercising its functions) to meet those objectives.

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<sup>16</sup> <https://naturalresources.wales/evidence-and-data/research-and-reports/the-state-of-natural-resources-report-assessment-of-the-sustainable-management-of-natural-resources/?lang=en>

<sup>17</sup> Acts of the National Assembly for Wales. The Well-being of Future Generations (Wales) Act 2015. <https://www.legislation.gov.uk/anaw/2015/2/contents/enacted>

The seven well-being goals include: a resilient Wales, a prosperous Wales, a healthier Wales, a more equal Wales, more cohesive communities, a Wales of vibrant culture and thriving Welsh language and a globally responsible Wales.

Of most relevance is 'A resilient Wales', which seeks to maintain and enhance a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change (for example climate change).

### **D.1.7 Planning Policy**

#### **Planning Policy Wales (PPW)**

At national level, Planning Policy Wales<sup>18</sup> sets the national policies in relation to development control through the Town and Country Planning Act 1990. This is supported by a series of Technical Advice Notes, with Technical Advice Note (TAN) 5<sup>19</sup> being of particular relevance as it sets out the consideration of nature conservation in the determination of planning applications. This policy and TAN 5 require Local Authorities to take measures to:

- Promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
- Ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
- Ensure that statutorily designated sites are properly protected and managed;
- Safeguard protected species; and
- Promote the functions and benefits of soils, and in particular their function as a carbon store.

Developers must ensure that they comply with the above legislation by fully assessing the potential impacts on protected species and habitats from the proposed development. Where planning permission is required, this assessment must be finalised prior to and included with the submission of the planning application. The Planning Authority can then ensure that the necessary protected species and habitats information has been provided to inform an assessment and that proposals are in full accordance with relevant legislation and planning policy.

WG has produced a Nature Recovery Plan which is aimed at addressing the underlying causes of biodiversity loss by putting nature at the heart of its decision-making, by increasing the resilience of Wales' natural systems (ecosystems), and by taking specific action for habitats and species. It sets out how Wales will deliver the commitments of the EU Biodiversity Strategy and the UN Convention on Biological Diversity to halt the decline in our biodiversity by 2020 and then reverse that decline. The Nature Recovery Action Plan links to and complements The Well-being of Future Generations (Wales) Act 2015 and the Environment Act (Wales) 2016. Developments should seek to complement this, in order to meet objectives, set out in the Environment Act and Well-being Act.

Statutorily designated sites must be protected from damage and deterioration, with their important features conserved and enhanced by appropriate management.

Although non-statutory designations carry less weight than statutory designations, they can make a vital contribution to delivering an ecological network for biodiversity and resilient ecosystems, and they should be given adequate protection in development plans and the development management process.

Planning authorities must follow a step-wise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible

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<sup>18</sup> Welsh Government (2018). Planning Policy Wales, Edition 11, February 2021.

<sup>19</sup> Welsh Assembly Government (2009) Technical Advice Note 5: Nature Conservation and Planning.



The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.

Planning authorities should protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial and identified green infrastructure function. Planning authorities should consider the importance of native woodland and valued trees, and should have regard, where appropriate, to local authority tree strategies or SPG. Permanent removal of woodland should only be permitted where it would achieve significant and clearly defined public benefits. Where woodland or trees are removed as part of a proposed scheme, developers will be expected to provide compensatory planting.

Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits; this protection should prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW.

Nature based solutions should be the first consideration given the opportunity to deliver other multiple benefits, including habitat creation, biodiversity enhancement and water quality improvements. Overall, green infrastructure opportunities can benefit ecosystem resilience and provide opportunities for leisure facilities or renewable energy generation.