

APPENDIX A – CONSERVATION OBJECTIVES OF THE RIVER USK SPECIAL AREA OF CONSERVATION (SAC)

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.

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

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

Conservation planning and management.

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

Assessing plans and projects.

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

Monitoring and reporting.

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

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

b. Format of the conservation objectives

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

Each conservation objective consists of the following two elements:

1. Vision for the feature
2. Performance indicators

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

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

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

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

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.

The ecological status of the water environment should be sufficient to maintain a stable or increasing population of each feature. This will include elements of water quantity and quality, physical habitat and community composition and structure. It is anticipated that these limits will concur with the relevant standards used by the Review of Consents process given in Annexes 1-3.

Flow regime, water quality and physical habitat should be maintained in, or restored as far as possible to, a near-natural state, in order to support the coherence of ecosystem structure and function across the whole area of the SAC.

All known breeding, spawning and nursery sites of species features should be maintained as suitable habitat as far as possible, except where natural processes cause them to change.

Flows, water quality, substrate quality and quantity at fish spawning sites and nursery areas will not be depleted by abstraction, discharges, engineering or gravel extraction activities or other impacts to the extent that these sites are damaged or destroyed.

The river planform and profile should be predominantly unmodified. Physical modifications having an adverse effect on the integrity of the SAC, including, but not limited to, revetments on active alluvial river banks using stone, concrete or waste materials, unsustainable extraction of gravel, addition or release of excessive quantities of fine sediment, will be avoided.

River habitat SSSI features should be in favourable condition. In the case of the Usk Tributaries SSSI, the SAC habitat is not underpinned by a river habitat SSSI feature. In this case, the target is to maintain the characteristic physical features of the river channel, banks and riparian zone.

Artificial factors impacting on the capability of each species feature to occupy the full extent of its natural range should be modified where necessary to allow passage, e.g. weirs, bridge sills, acoustic barriers.

Natural factors such as waterfalls, which may limit the natural range of a species feature or dispersal between naturally isolated populations, should not be modified.

Flows during the normal migration periods of each migratory fish species feature will not be depleted by abstraction to the extent that passage upstream to spawning sites is hindered.

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

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.

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.

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.

Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects.

Levels of suspended solids will be 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.

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);
- Twait 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
<p>The conservation objective for the water course as defined in 4.1 above must be met.</p> <p>The population of the feature in the SAC is stable or increasing over the long term.</p>	<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>
<p>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 e.g. suitable flows to allow upstream migration, depth of water and substrate type at spawning sites, and ecosystem structure and functions e.g. food supply (as described in sections 2.2 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</p> <p>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.</p>	<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 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>

	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.
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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 *Petromyzon marinus* :
Performance indicators for feature condition

Attribute	Specified Limits	Comments	Relevant Unit[s]
(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 overtime. 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 >0.1m ⁻² (Harvey & Cowx 2003) ¹	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 m ⁻² in suitable habitat ² , therefore 0.1 m ⁻² is a conservative threshold value for unfavourable condition.	

Brook lamprey <i>Lampetra planeri</i> and River lamprey <i>Lampetra fluviatilis</i> : <i>Performance indicators for feature condition</i>			
Attribute	Specified Limits	Comments	Relevant Unit[s]
(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 receding 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	The combined natural range of these two species in terms of ammocoete distribution includes all units above the tidal limit i.e. all except unit 1. Presence at less than 2/3 of sample sites will lead to an unfavourable condition assessment.	2-10
	No reduction in distribution of ammocoetes	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.	
(c) Ammocoete density	Optimal habitat: >10m ⁻² Overall catchment mean: >5m ⁻²	Optimal habitat comprises beds of stable fine sediment or sand >15cm 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
Twaiite shad <i>Alosa fallax</i> and Allis shad <i>Alosa alosa</i> : <i>Performance indicators for feature condition</i>			
Attribute	Specified Limits	Comments	Relevant Unit[s]
(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 sites within units 2 to 5 will be monitored at 3 yearly intervals. Absence from any site in 2 consecutive surveys will result	1-5

		in an unfavourable condition assessment.	
<i>Performance indicators for factors affecting the feature</i>			
(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> : <i>Performance indicators for feature condition</i>			
(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-seawinter 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 electro fishing data.	6-10
<i>Performance indicators for factors affecting the feature:</i> Water quality			
(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	All

		throughout the SAC [see Annex 3].	
<i>Performance indicators for factors affecting the feature:</i>			
Hydromorphology			
(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> :			
<i>Performance indicators for feature condition</i>			
a) Adult densities	No less than 0.2 m ⁻² in sampled reaches	CSM guidance states that densities should be no less than 0.2 m ⁻² in upland rivers (source altitude >100m) and 0.5 m ⁻² 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 ongoing 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 <i>Lutra lutra</i> (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	
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. 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		Refer to section 5.9 for current assessment of feature population. 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.	

<p>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 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.</p> <p>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.</p>	<p>The decline in eel populations may be having an adverse effect on the population of otters in the Usk.</p> <p>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.</p>
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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.

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