

APPENDIX 11.9:

WYE SAC QUALIFYING FEATURES DESCRIPTION

RIVER WYE SAC

1. Species and habitats definitions and their relationship with the River Wye are provided below. These are largely reproduced from the Joint Nature Conservation Committee (JNCC) website: <http://jncc.defra.gov.uk>.

Water Courses of Plain to Montane Levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* Vegetation

2. The River Wye, on the border of England and Wales, is a large river representative of sub-type 2 (of this habitat). It has a geologically mixed catchment, including shales and sandstones, and there is a clear transition between the upland reaches, with characteristic bryophyte-dominated vegetation, and the lower reaches, with extensive *Ranunculus* beds. There is a varied Water-crowfoot *Ranunculus* flora; stream water-crowfoot *R. penicillatus* ssp. *pseudofluitans* is abundant, with other *Ranunculus* species – including the uncommon River Water-crowfoot *R. fluitans* – found locally. Other species characteristic of sub-type 2, include Flowering-rush *Butomus umbellatus*, Lesser Water-parsnip *Berula erecta* and Curled Pondweed *Potamogeton crispus*. There is an exceptional range of aquatic flora in the catchment including River Jelly-lichen *Collema dichotum*. The river channel is largely unmodified and includes some excellent gorges, as well as significant areas of associated woodland.

Transition Mires and Quaking Bogs

3. The term ‘transition mire’ relates to vegetation that in floristic composition and general ecological characteristics is transitional between acid bog and alkaline fens, in which the surface conditions range from markedly acidic to slightly base-rich. The vegetation normally has intimate mixtures of species considered to be acidophile and others thought of as calciphile or basophile. In some cases the mire occupies a physically transitional location between bog and fen vegetation, as for example on the marginal lagg of raised bog or associated with certain valley and basin mires. In other cases these intermediate properties may reflect the actual process of succession, as peat accumulates in groundwater-fed fen or open water to produce rainwater-fed bog isolated from groundwater influence. Many of these systems are very unstable underfoot and can therefore also be described as ‘quaking bogs’.

White-clawed (or Atlantic Stream) Crayfish *Austropotamobius pallipes*

4. The Welsh River Wye system is the best site known in Wales for White-clawed Crayfish. The tributaries are the main haven for the species, particularly at the confluences of the main river and the Edw, Dulas Brook, Sgithwen and Clettwr Brook.

Sea Lamprey *Petromyzon marinus*

5. The Sea Lamprey population in the River Wye is found in the main stem below Llyswen. The River Wye provides exceptionally good quality habitat for Sea Lamprey and supports a healthy population.

Brook Lamprey *Lampetra planeri*

6. The Brook Lamprey population is widely distributed in the River Wye catchment. The river provides exceptionally good quality habitat for Brook Lamprey and supports a healthy population.

River Lamprey *Lampetra fluviatilis*

7. The River Lamprey population is widely distributed in the River Wye catchment. The river provides exceptionally good quality habitat for River Lamprey and supports a healthy population.

Twaite Shad *Alosa fallax*

8. Twaite Shad have long been abundant in the River Wye. Twaite Shad often spawn at or just above the tidal limit, but in the River Wye they migrate over 100km upstream, the highest spawning site being at Builth Wells. Data held by the Environment Agency indicate that, of three selected rivers, the largest spawning areas for this species occur on the River Wye. The river has relatively good water quality, adequate flows through an unobstructed main channel and a wide range of aquatic habitats conducive to supporting this fish species. In particular, there are a number of deep pools essential for congregation before spawning.

Atlantic Salmon *Salmo salar*

9. Historically, the River Wye is the most famous and productive river in Wales for Atlantic Salmon, with high-quality spawning grounds and juvenile habitat in both the main channel and tributaries; water quality in the system is generally favourable. It is also one of the most diverse river systems in the UK, with a transition from hard geology, high gradients, rapid flow fluctuations and low nutrient-content in its upper reaches, to a more nutrient-rich river with lower gradient, more stable flow and softer geology in the lowlands. The effect of river engineering work on migration and spawning has been limited, although there is a localised influence from the Elan Valley reservoirs, through inundation of spawning and nursery habitat and fluctuations in flow and water levels in the upper River Wye. The most important tributaries for spawning are included in the SAC. Although in the past non-native Salmon may have been released to the system, the impact of this is likely to have been minimal. The River Wye Salmon population is particularly notable for the very high proportion (around 75%) of multi sea winter (MSW) fish, a stock component which has declined sharply in recent years throughout the UK. This pattern has also occurred in the River Wye, with a consequent marked decline in the population since the 1980s. However, the River Wye Salmon population is still of considerable importance in UK terms.

Bullhead *Cottus gobio*

10. The diversity of habitat types in the River Wye means that it is likely to represent most of the habitat conditions in which bullhead occurs in Britain, highlighting the conservation importance of this river. Targeted surveys within the Study Area failed to find any Bullhead.

Otter *Lutra lutra*

11. The River Wye holds the densest and most well-established otter population in Wales, representative of otters occurring in lowland freshwater habitats in the borders of Wales. The river has bank-side vegetation cover, abundant food supply, clean water and undisturbed areas of dense scrub suitable for breeding, making it particularly favourable as otter habitat. The population remained even during the lowest point of the UK decline, confirming that the site is particularly favourable for this species and the population likely to be highly stable. Otter are known to be present within the Study Area.

Allis Shad *Alosa alosa*

12. Relatively little information is available on the habitat requirements of Allis Shad in freshwater. It grows in coastal waters and estuaries but migrates into rivers to spawn, swimming up to 800km upstream in continental Europe. However, Allis shad do not readily traverse obstacles to migration such as dams or weirs, and this has been a major cause of their decline. Adults spawn at night with a great deal of noisy splashing; the eggs are released into the current where they settle among gaps in gravelly substrates. Spawning sites tend to be used year after year, and relatively shallow gravelly areas adjacent to deep pools are thought to represent optimal spawning habitat. Almost all adults die after spawning.
13. Sites in the UK have been selected where Allis Shad has been reliably recorded as present, where there is previous evidence of breeding, and where there still appear to be favourable conditions for breeding. However, because there is only one recently-confirmed spawning population in the UK (Tamar estuary), this species is not currently a primary reason for site selection at any UK SAC. Population declines in many parts of Europe have been attributed to the effects of pollution, overfishing and river obstructions to migration.