

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

SITE OF SPECIAL SCIENTIFIC INTEREST: MANAGEMENT STATEMENT

PEMBROKESHIRE

**AFON CLEDDAU GORLLEWINOL /
WESTERN CLEDDAU RIVER**

Date of Notification: 24 March 2003

Site Area: 371.7 ha

1. Introduction:

This management statement contains CCW's opinion of the way in which the SSSI should be managed in order to maintain its special interest. It also provides a basis for future discussions and decisions on the conservation management of the SSSI. It is important that any works described in this statement are fully discussed with and formally consented by CCW, before any of these management activities are started.

The document sets out a vision for the features of interest; it describes the key issues affecting those features and outlines any management considered necessary to safeguard the features.

It is very important to recognise that management may need to change with time. Problems that we are aware of today may be resolved or completely removed and new unforeseen problems may arise. New improved management techniques may also become available. Consequently the management outlined in this document is considered appropriate for the short term but may need to change in the long term.

2. Features of Special Scientific Interest:

- River habitats including water crowfoot habitat
- Associated riverside habitats (including semi-natural broadleaved woodland, scrub, marshy grassland, swamp and mire).
- Otter
- Fish (bullhead, brook lamprey, river lamprey, sea lamprey).

As well as the features listed above, the Western Cleddau River SSSI has other habitats that are essential to the maintenance of the special wildlife interest. These include semi-improved neutral grassland, continuous bracken, tall herbs or fern, river gravels, ponds, streams, ditches, hedgerows and individual trees. This diversity of habitats similarly supports a wide range of species and these too are a key component of the special interest of the site. Unless it is specified below, management of this site should aim to look after these habitats as well as the listed features of interest.

3. Long-term Vision for the Site and Features:

3.1 River Habitats Including Water Crowfoot Habitat

CCW's aim is to maintain the present distribution and extent of all semi-natural river habitats and to ensure that the full range of characteristic species is present and capable of regenerating naturally.

3.2 Associated Riverside Habitats

At present 30% of the SSSI is covered by semi-natural broadleaved woodland and 24% is covered by scrub. The current distribution and extent of these habitats, which are important for otter, should be retained, provided there is no conflict with the ecological requirements of the other features of the site, especially aquatic plants. The woodland and scrub should be made up of naturally regenerating native species, including oak, ash, willow, alder, hazel, hawthorn and blackthorn. Over time, the scrub will tend to develop into woodland so the relative proportions of these habitats will change, unless scrub is allowed to colonise new areas within the SSSI.

Marshy grassland, swamp and mire account for 17% of the SSSI. The current extent of these wet habitats should be protected. The existing diversity of plant species within these habitats should be retained and improved where possible. Some typical plants found in these diverse habitats include meadowsweet, wild angelica, marsh marigold and purple moor-grass as well as various sedges and rushes. Alien or native invasive species, especially Japanese knotweed, should be controlled.

CCW will work in partnership with landowners and occupiers, the Environment Agency Wales and the Pembrokeshire Rivers Trust to assess the whole site and identify areas where these semi-natural habitats should be restored or encouraged to develop.

3.3 Fish (bullhead, brook lamprey, river lamprey, sea lamprey)

The Western Cleddau River SSSI should support viable populations of bullhead and river, brook, and sea lamprey. There must be sufficiently good quality habitat throughout the entire river system to allow fish populations to increase to reach their natural limits.

3.4 Otter

CCW's aim is to maintain a viable population of otters with continued evidence of breeding and stable or increasing numbers. Otters must be present throughout the river system with sufficient suitable habitat, including breeding, resting and feeding sites to support the population in the long term.

4. Key Management Issues:

CCW will, where appropriate, work in partnership with relevant organisations, landowners and occupiers to manage the SSSI. Management decisions must take into account the requirements of all the features of the site and must be formulated at a whole site scale and in some cases at a catchment level.

4.1 River Habitats Including Water Crowfoot Habitat

- **Water Quality**

Good water quality is a fundamental attribute of the river habitats, directly and indirectly affecting all the plants and animals that use the river. CCW will work with relevant partners including landowners and occupiers to minimise the risk of pollution of the rivers by nutrients, silt, organic matter and chemicals from industry, forestry, and agriculture especially intensive dairy farming. Water crowfoot and the associated aquatic plants are particularly sensitive to raised levels of nutrients (soluble reactive phosphorous and nitrates) and sediment in the water.

CCW will work closely with relevant organisations to ensure that the water quality within the SSSI fulfils the ecological requirements of the river habitats. Where appropriate, consideration should be given to the creation of buffer strips along the river to reduce the input of nutrients and sediments from adjacent land.

- **Water Level**

The water level in the river influences a range of factors of critical importance to these semi-natural river habitats including current velocity, dissolved oxygen levels, concentrations of pollutants and available habitat for associated plants and animals.

The water crowfoot and associated aquatic plants are susceptible to drying out during periods of low flow. Increased water levels, for instance during flood conditions, lead to high current velocities, which can damage or uproot the aquatic plants that make up this habitat.

CCW will work in partnership with relevant organisations to ensure that there is sufficient water in the channel at all times to provide adequate conditions for the river habitats. Existing and proposed abstractions and discharges will be assessed for their impact on the flow regime in the river.

- **Riverside Habitat Management**

All the features of the river rely on good quality bankside and channel habitat. Good riverside habitat management should concentrate on preserving and where necessary restoring natural channel features such as gravel beds, pools, meanders and backwaters. Bankside habitats are often impoverished by agricultural improvement, overgrazing and tree and scrub clearance, which can cause serious erosion of the riverbanks. Damage to the riverbanks can be worsened by stock accessing the river and poaching the already eroded areas, as well as potentially increasing levels of sediment within the watercourse.

The water crowfoot habitat is particularly sensitive to changes in the management of the riverside habitat, for example alterations to the grazing regime. Trampling of the river bed by livestock, especially at stock crossing or cattle drinks, can damage or uproot aquatic plants and may lead to widening of the channel and subsequent lowering of the water level. Livestock also graze on water crowfoot and other aquatic plants. Modification of the river channel, excessive shading by bankside trees and changes in land drainage near the river may also affect the water crowfoot habitat.

CCW should be consulted before management operations are carried out on the riverside habitat. Positive management of the riverbanks and channel, for example creation of buffer strips or fencing to exclude stock from the river, can be achieved

through SSSI management agreements and agri environment schemes such as Tir Gofal. Consideration should be given to creating open areas along densely shaded sections of river, however, any management of the bankside vegetation for the water crowfoot habitat should be balanced against the needs of the other features of the SSSI. CCW will work in partnership with landowners and occupiers, Environment Agency Wales and the Pembrokeshire Rivers Trust to assess the whole site, identify areas where management of the riverside habitat is needed and implement positive management in those targeted areas.

- **Engineering Works**

Engineering works, such as highway maintenance, bridge repairs, flood defence works and the maintenance of weirs have the potential to cause significant damage to the river habitats and the water crowfoot plant community. Channel and bank engineering works can cause pollution, erosion and increased sediment in the river as well as altering the flow regime. Flood defence and other works can adversely affect the natural features of the river by widening, deepening or straightening the channel or by the removal of sand, gravel or boulders.

CCW should be consulted before any engineering works are undertaken on or near the river.

4.2 Associated Riverside Habitats

- **Water Level**

The wet habitats, including wet woodland, marshy grassland, swamp and mire rely on a high water table for their continued existence. Lowering of the water level through drainage or abstraction may alter the species composition and damage the special interest of these habitats (see also section 4.1).

- **Grazing**

The level of grazing on the marshy grassland, swamp and mire habitats should be controlled. Both overgrazing and too little grazing can lead to a reduction in botanical and structural diversity. High stocking levels may also cause poaching and erosion in these sensitive habitats.

Alterations to the grazing regime within the woodland and scrub may result in the loss of these habitats. Overgrazing of woodlands hinders natural tree regeneration and reduces botanical diversity of the ground flora. In contrast, a low level of grazing is beneficial to tree regeneration in wet woodlands providing the bare soil and light needed for the germination of many species. Much of the woodland is located on steep slopes or wet areas close to the river and would benefit from stock exclusion, thereby also creating shelter and cover for otters, another feature of the site.

CCW will work with owners and occupiers to ensure an optimal level of grazing where appropriate.

- **Forestry Operations**

CCW will work in partnership with the Forestry Commission and owners/occupiers to assess and advise on proposed forestry operations that could impact on the site. Any forestry operations within or adjacent to the site should be carried out according to the Forestry Commission Forest and Water Guidelines.

- **Alder Disease (Phytophthora)**

Alder is an important component of much of the wet woodland in the SSSI and is often the dominant species where banks are lined with trees. Phytophthora could therefore pose a serious threat to the woodland on the site. It has already been recorded on many of the alders lining the river, particularly in the lower reaches.

The Forestry Commission and the Environment Agency Wales are currently undertaking research into the management and treatment of diseased alders. CCW will formulate a management policy relating to alder disease once the results of this research become available. Early indications are that coppicing of affected trees results in disease-free re-growth from the coppiced stumps.

- **Invasive Alien Species**

The wet habitats including wet woodland, marshy grassland, swamp and mire, are at a high risk of being colonised by invasive alien species such as Japanese knotweed and Himalayan balsam, which form dense stands, displacing native plants, reducing species diversity and the resulting value of these habitats to wildlife.

CCW will work with partners to control the invasive alien species within the site, where this will not harm the other features of the SSSI.

- **Dead Wood/Tree Removal**

Dead wood and old veteran trees provide an important habitat for many species, particularly for invertebrates, fungi and lower plants such as lichens and mosses.

No party should undertake tree or dead wood removal without seeking further advice from CCW with the exception of the Environment Agency Wales, for emergency flood alleviation reasons.

- **Agricultural Improvement**

Nutrient enrichment poses a threat to the botanical diversity of the associated habitats. Fertiliser should not be applied to these habitats and where possible fertiliser application should be limited on fields adjacent to the SSSI to avoid enriched water entering the site. Organic waste, particularly slurry and manure from intensive dairy farming should not be applied on or near to these wet areas. Ploughing or cultivating will damage these habitats and should not be carried out.

- **Engineering Works**

These habitats are prone to damage from heavy machinery, therefore the effect of any proposed engineering works should be carefully assessed by CCW

4.3 Fish (bullhead, brook lamprey, river lamprey, sea lamprey).

- **River**

The fish features require a semi-natural, dynamic river system including sufficient clean gravel beds with different gravel sizes for spawning, well-oxygenated silty sand bars for lamprey larvae, and cover for juvenile fish (e.g. aquatic plants, coarse woody debris or submerged roots).

- **Water Quality**

Good water quality is essential to maintaining healthy fish populations in the Western Cleddau River SSSI. The site is considered to be at a high risk from organic agricultural pollution such as slurry, silage effluent, milk or milk washings. When these pollutants are broken down by microbes (eg bacteria) in the river they decrease oxygen levels in the water. This can result in fish and other aquatic life suffocating and, in serious incidents, can directly poison aquatic life.

Sheep dips, especially synthetic pyrethroid dips, are extremely toxic to aquatic invertebrates, which are the main food source for the bullhead and for the fish species that the river and sea lamprey feed on. Proper use and disposal of sheep dips within the catchment is essential and they must never be disposed of in watercourses.

Sediment from activities such as ploughing, habitat clearance, forestry operations or heavy grazing can be washed into the river where it can smother the gravel beds which are important breeding sites for the bullhead and lamprey. Where these activities are permitted, care must be taken to minimise soil erosion and runoff. (See also section 4.1)

- **Water Level**

The amount of water in the river channel affects a range of critical factors for the fish species including dissolved oxygen levels, available territory, accessibility of spawning areas and the impact of pollution.

There are a number of abstraction points within the catchment. The impact of these abstractions on the fish species, especially during periods of low flow, must be assessed. (See also section 4.1)

- **Riverside Habitat Management**

Vegetation on the riverbanks provides cover for fish, can reduce nutrient and sediment inputs to the water and can stabilise eroding banks. In addition, bankside vegetation provides food and shelter for many invertebrates, which are the main prey for many fish species. Trees also shade the channel, moderating temperature changes and reducing the likelihood of deoxygenation of the water.

Aquatic plants provide resting places and cover for many species of fish. Beds of silt deposited downstream of aquatic plants are important nursery sites for juvenile lamprey.

Overgrazing of the riverside habitat can lead to erosion of the riverbanks and increased sedimentation in the river. Stock with access to the river can damage important river features such as spawning grounds. (See also section 4.1)

- **Engineering Works**

Particular attention must be given to protecting spawning gravels and beds of silt, which may be used by juvenile lamprey. (See also section 4.1)

- **Fishery Management**

It is recognised that habitat improvements for many of the SSSI features will also benefit the fishery. Continued close liaison should ensure that the impact of management for fishing, such as management of bankside and channel features for anglers, or removal of non-target species that are SSSI features is minimised. CCW will work with partners such as the Environment Agency Wales and the Pembrokeshire

Rivers Trust to ensure that management of the fisheries is sympathetic to the requirements of the fish and other features of the SSSI.

- **Obstructions to migration**

Weirs, dams and other manmade structures can impede fish movement, in particular spawning migrations. Existing obstructions should be evaluated and options such as the installation of fish passes should be considered. New operations that may result in an obstruction to fish migration, temporary or otherwise, need to be carefully assessed by CCW and the Environment Agency Wales.

- **Alder Disease (Phytophthora)**

The large scale loss of bankside alders to Phytophthora would be detrimental to the fish features of the SSSI, causing a reduction in available cover, shade and food as well as increased erosion and sediment in the water. (See also section 4.2)

- **Invasive Alien Plants**

Large stands of invasive alien plants within the river channel can reduce the suitability of the habitat for the fish species, for example by increasing the risk of erosion and siltation when they die back in winter, and in extreme cases can block migration routes.

CCW will work in partnership with relevant organisations to control the invasive alien species in the SSSI.

4.4 Otter

- **Water Quality**

Historically the decline of the otter in the 1950s and 1960s has been attributed to the toxic effects of pollution, especially from pesticides, which lower the otter's resistance to disease and reduce breeding success. In addition good water quality is essential for maintaining stocks of prey species (fish and amphibians) for the otter.

CCW will work closely with relevant organisations to ensure that the water quality within the SSSI fulfils the ecological requirements of the otter.

- **Water Level**

Low flow rates can reduce food availability and concentrate pollutants. The requirements of the otter need to be taken into account when formulating limits for water quantity in the catchment.

CCW will work with relevant partners to ensure that there is adequate water quantity and suitable flow characteristics to fulfil the ecological requirements of the otter.

- **Engineering Works**

Engineering works near the river could disturb otters, damage or destroy habitat and have the potential to reduce the availability of food for the otter.

CCW should be consulted on any proposed bank or channel engineering works that could have an impact on the features of the SSSI

- **Riverside Habitat Management**

Dense riverside vegetation, especially woodland and scrub are particularly important for the otter, providing resting and breeding sites, which must be protected. In addition otters use crevices between boulders, cavities in the roots of bankside trees and piles of flood debris as holt sites. Mowing, clearance and overgrazing of bankside vegetation opens up the riverside habitat, destroying many potential otter resting and breeding sites.

CCW should be consulted on any proposed alterations to management of the riverside habitats. Consideration should be given to improving bankside habitat by, for example, fencing off buffer strips, planting trees, building artificial otter holts or excluding stock, particularly where lack of suitable bankside habitat may be limiting the distribution of the otter.

- **Fishery Management**

CCW will ensure that fishery management is sympathetic with the needs of otters. Bankside habitat management for angling should not be detrimental to the otters on the site.

- **Alder Disease (Phytophthora)**

Alder is an important and common riverside tree. The large-scale loss of alders to Phytophthora would reduce the quantity and quality of otter habitat along the river. (See also section 4.2)

- **Recreational Activities**

Recreational use of the site, including dog walking, angling, kayaking and cycling could disturb otters. Breeding, resting and feeding areas are especially sensitive to disturbance.

CCW will work with relevant partners to assess the impact on the otter of recreational activities within the site and to ensure that disturbance to sensitive sites is minimised.

- **Invasive Alien Species**

CCW will ensure that any disturbance to the otter during the removal of invasive species will be kept to a minimum.

- **Hunting**

CCW will work with hunting groups to ensure that their activities are sympathetic to the needs of the otters within the SSSI.

- **Road Deaths**

Significant numbers of otters can be killed on roads, particularly when flooding makes it difficult for them to pass under bridges and culverts and they attempt to cross the road. If such sites are identified then CCW will seek to ensure that mitigation measures to provide alternative access routes for otters, such as dry culverts or ledges on bridges, are put in place.