

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

SITE OF SPECIAL SCIENTIFIC INTEREST CITATION

CARMARTHENSHIRE

AFON TYWI

Date of Notification: 1998

National Grid Reference: SN 762348 - SN 355075

O.S. Maps: 1 :50,000 Sheet number: 146, 159
1 :10,000 Sheet number: SN73 SE, SW
SN72 NW
SN62 NE, SE, SW
SN52 SE, SW
SN51 NE, NW
SN42 SE, SW
SN41 NW, SW
SN31 NE, SE
SN30 NE, NW

Site Area: 1249.5 ha

Description:

Afon Tywi Site of Special Scientific Interest extends downstream from Llandovery to the confluence with the Afon Taf and Pembrey Coast SSSI in Carmarthen Bay. It is an actively eroding river meandering across a wide flood plain which is composed of alluvium, glacial sands and gravels. This has resulted in extensive shingle banks being formed. These are important for birds and invertebrates, and the river is also of special interest for its fish species and otters, and in its lower reaches for its saltmarsh vegetation.

GEOLOGY

The Afon Tywi from Llandovery to Carmarthen Bay (at Llanstephan - Ferryside) displays a varied geology and geomorphology. The course of the river is characteristic of a mature river valley. Over the 74 km from Llandovery down to the sea the river falls just 65 m. There is a tidal influence from Llanstephan up-stream to Bryn Myrddin. For the greater part, the river meanders over a flat valley floor, re-working previously deposited river sediments. Though rock sections are uncommon, the orientation of the river course indicates that it is controlled by features in the underlying solid geology, such as faults or folds in the rocks of the valley floor. Generally, ashes, sandstones and limestones give rise to solid areas of river bed. The areas of shale and mustone are occupied by glacial till or river alluvium. These latter deposits are frequently exposed in small river cliffs, displaying evidence of the historical development of the river basin.

FLORA

Submerged aquatic plants present in stretches of moderate flow in the river channel include the sporadic occurrence of water crowfoot *Ranunculus penicillatus* ssp. *penicillatus* and water starwort species *Callitriche hamulata*, *stagnalis* and *platycarpa*.

Characteristic vegetation of the exposed gravel shoals include unstable communities which are subject to periodic inundation. Species such as yellow cresses *Rorippa* spp., water forget-me-knot *Myosotis scorpioides* and water pepper *Polygonum hydrociper*, are widespread and frequent. Grasses such as reed canary-grass *Phalaris arundinacea*, marsh foxtail *Alopecurus geniculatus* and creeping and common bents *Agrostis* spp. occur on more stable areas of shingle where gorse *Ulex* spp. and willows *Salix* spp. are becoming established. These areas of scrub also provide important overwintering sites for shingle invertebrates and rest areas for otters.

Marginal vegetation consists mainly of reed canary-grass *Phalaris arundinacea*, reed sweetgrass *Glyceria maxima* with branched bur-reed *Sparganium erectum* occurring occasionally.

Much of the river bank is subject to active erosion and the species composition, often dominated by tall ruderals and ephemerals reflects this. Species such as rose bay willow herb *Chamerion angustifolium*, nettle *Urtica dioica*, creeping thistle *Cirsium arvense* and marsh ragwort *Senecio aquaticus* are dominant along much of the banks with common knapweed *Centaurea nigra* and yarrow *Achillea millefolium* common. However, extensive areas of Indian balsam *Impatiens glandulifera* and to a lesser extent Japanese knotweed *Fallopia japonica* occur in the lower reaches.

Tree cover is sparse along the banks of the Afon Tywi, the adjacent flood plain dominated mainly by intensive dairy farming with improved grassland running down to the river. Spate river conditions make fencing impractical with the result that there is little tree regeneration. Existing trees comprise mainly of alder *Alnus glutinosa*, common sallow *Salix cinerea* and common osier *Salix viminalis*. Where areas of deciduous woodland have been retained, the dominant species are alder *A. glutinosa*, ash *Fraxinus excelsior*, willow *Salix* spp. and sycamore *Acer pseudoplatanus*.

Below Carmarthen, but especially in the lowest reaches of the river, a diverse range of saltmarsh communities covering over 150 hectares has developed. These range from transitional low marsh communities at the lowest levels merging into extensive areas of common saltmarsh-grass *Puccinellia maritima* saltmarsh communities including the thrift *Armeria maritima* sub-community. A rayed sea aster *Aster tricolium* community is also present with extensive areas of at least three red fescue *Festuca rubra* communities. At the top of the saltmarsh in some places are well developed examples of sea rush *Juncus maritimus* saltmarsh including the scarcer parsley water-dropwort *Oenanthe lachenalii* sub-community.

There are also important transitions to wet grassland, freshwater mire and dune. The richest areas are normally ungrazed or lightly grazed. Morfa Uchaf is particularly important in this respect with a rich variety of associations including two forms of inundation grassland, one with a dense stand of slender spike-rush *Eleocharis uniglumis*.

MAMMALS

Otter *Lutra lutra* is widespread along the river where appropriate bank side cover is available, and water voles *Arvicola terrestris* have also been recorded.

FISH

The Afon Tywi is used by both twaite and allis shad, *Alosa fallax* and *A. alosa*. This river is one of only four rivers in England and Wales, known to date, in which the twaite shad breeds. Shad are regularly seen and sometimes caught by local fishermen. Much of the river habitat is considered suitable for shad spawning with the main areas between Carmarthen and Llanegwad, with spawning also reported further upstream near Manordeilo.

The river also supports an excellent population of sea trout *Salmo trutta trutta*, which is why the Afon Tywi is recognised as one of the premier sea trout fisheries in the United Kingdom. Atlantic salmon *Salmo salar*, the eel *Anguilla anguilla*, the river lamprey *Lampetra fluviatilis* and the sea lamprey *Petromyzon marinus* are other migratory fish present. Non migratory fish include the brown trout *Salmo trutta fario* and the bullhead *Cottus gobio*.

BIRDS

The Afon Tywi, downstream of Llandovery, meanders through a wide gravel-based flood plain, with generally sparse bankside tree cover and this supports an important breeding bird community. A particular feature is its extensive areas of shingle banks providing suitable breeding habitat for little ringed plover *Charadrius dubius*. The Afon Tywi is the most important river in the UK for this species and holds approximately 4-5% of its total population (in 1997). Active bank erosion is another feature of the river providing nesting sites for kingfishers *Alcedo atthis* and a significant population of sand martins *Riparia riparia*, the Afon Tywi catchment holds between 1 and 2% of its British breeding population. Common sandpiper *Actitis hypoleucis* also breeds along the Afon Tywi. Mute swan *Cygnus olor* breeds along the slow flowing reaches whilst occasional reaches of faster flowing riffles with bankside tree cover, provide habitat for dipper *Cinclus cinclus* and grey wagtail *Motacilla cinerea*, but these species are generally scarce along the Afon Tywi.

Small numbers of overwintering white-fronted geese *Anser albifrons* have been recorded on adjacent flood plains. The tidal reaches provide important feeding grounds for a diverse assemblage of estuarine birds including black-tailed godwit *Limosa limosa*, oystercatcher *Haematopus ostralegus* and curlew *Numenius arquata*.

INVERTEBRATES

The Afon Tywi supports an important assemblage of river invertebrates including beetles *Coleoptera*, true flies *Diptera*, dragonflies *Odonata*, spiders *Araneae* and molluscs *Mollusca*. The main invertebrate interest on the Afon Tywi is found on the extensive shingle banks. The fauna includes national rarities such as the 5-spot ladybird *Coccinella auinquepunctata*, the click beetle *Negastris sabulicola*, the ground beetle *Lionychus auadrillum* and the predatory shingle fly *Tachydromia acklandi*. The nationally scarce wolf spider *Arctosa cinerea* is also found on the

shingle banks.

The Afon Tywi additionally supports populations of the nationally scarce club-tailed dragonfly *Gomphus vulgatissimus*, especially where the river is slow flowing and there is bankside scrub or woodland to provide shelter for the maturing adults.

The nationally scarce freshwater pearl mussel *Margaritifera margaritifera* has also been recorded from the lower reaches of the river.

Remarks:

Afon Tywi is a Special Area of Conservation

The site supports the following habitats and species listed in the EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora:

Common otter *Lutra lutra* - Annex 11 and IV

Allis shad *Alosa alosa* - Annex 11 and V

Twaite shad *Alosa fallax* - Annex 11 and V

Atlantic Salmon *Salmo salar* - Annex 11 and V

Bullhead *Cottus gobio* - Annex 11 and V

Sea Lamprey *Petromyzon marinus* - Annex II

River Lamprey *Lamprologus fluviatilis* - Annex 11 and V

Freshwater Pearl Mussel *Margaritifera margaritifera* - Annex 11 and IV

Otter and freshwater pearl mussel are listed under Schedule 5 of the Wildlife and Countryside Act 1981, (as amended).

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