CYNGOR CEFN GWLAD CYMRU
COUNTRYSIDE COUNCIL FOR WALES

CARMARTHENSHIRE **AFON TYWI**

Local Planning Authority: Carmarthenshire County Council

Date of Notification: February 1998

National Grid Reference: SN 762348 - SN 355075

OS 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 Tâf and Pembrey Coast SSSI in Carmarthen Bay. It is an actively eroding river meandering across a wide floodplain 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 gives rise to solid areas of river bed. The areas of shale and mudstone 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 hydropiper, 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 sweet-grass 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 rosebay willow herb Chamerion angustifolium, nettle Urtica dioca, creeping thistle Cirsium arvense and marsh ragwort Senecio aquaticus are dominant along much of the banks with common knapweed Centaurea nigra and yarrow Achillea millefolia common. However, extensive areas of Indian balsam Impatiens gladulifera 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 floodplain 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 tripolium 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 bankside 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 Actitus hypoleucos 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 quinquepunctata, the click beetle Negastrius sabulicola, the ground beetle Lionychus quadrillum 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:

Part of the Afon Tywi is within the Dinefwr district of the Tir Cymen scheme.

The site incorporates land previously notified as part of Gweunydd Dryslwyn SSSI.

Afon Tywi abuts the Dinefwr Estate, Creigiau Llansteffan, Craig Ddu-Wharley Point Cliffs and Pembrey Coast SSSIs.

Afon Tywi is a possible Special Area of Conservation (SAC).

Afon Tywi abuts onto the Burry Inlet candidate SAC.

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 II and IV
Allis shad Alosa alosa - Annex II and V
Twaite shad Alosa fallax - Annex II and V
Atlantic Salmon Salmo salar - Annex II and V
Bullhead Cottus gobio - Annex II and V
Sea Lamprey Petromyzon marinus - Annex II
River Lamprey Lampetra fluviatilis - Annex II and V
Freshwater Pearl Mussel Margaritifera margaritifera - Annex II 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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SITE NAME: AFON TYWI

NOTIFICATION DATE:

OPERATIONS LIKELY TO DAMAGE THE SPECIAL INTEREST

1. Cultivation, including ploughing, rotovating, harrowing and re-seeding.

2. The introduction of grazing to ungrazed areas and alterations to the grazing regime in other areas (including type of stock, intensity or seasonal pattern of grazing).

3. Stock feeding, the introduction of stock feeding and alterations to stock feeding practice.

4. Mowing or cutting vegetation, the introduction of mowing or cutting and alterations to the mowing or cutting regime.

5. Application of manure, slurry, silage liquor, fertilisers and lime to agriculturally unimproved permanent grass, forestry and all other unimproved riparian habitats.

6. Application of pesticides, including terrestrial and aquatic herbicides (weedkillers).

7. Dumping, spreading or discharge of any materials.

8. Burning and alterations to the pattern or frequency of burnings.

9. Release into the site of any wild animal*, plant or seed or micro-organism.

10. Killing, injuring, taking or removal of any wild animal*, or the eggs/nests of any wild animal or the disturbing, taking, damaging or destroying of any wild animal in its place of shelter excluding pest control, existing fishing and game shooting.

11. Destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood.

12. Tree and/or woodland management, the introduction of tree and/or woodland management and alterations to tree and/or woodland management including planting, felling, thinning, coppicing and changes in species composition.

13a. Drainage including the use of mole, tile, tunnel or other artificial drains.

13b. Modification to the structure of water courses including rivers, streams, springs, ditches, dykes, drains, oxbows, backwater channels and mill leats/races including their banks and beds, as by re-alignment, regrading, damming, dredging, shoal removal, excavation dredging and the installation and repair of weirs sluices, fish ladders and croys, and the installation of new fishing platforms, fords and stock watering points.

13c. Management of aquatic and bank vegetation for drainage purposes.

14. Alterations to water levels and tables and water utilisation including irrigation, storage and abstraction from existing water bodies and through boreholes. Also the modification of current drainage regime, (eg through the installation of new pumps).

15. Infilling or digging of ditches, dykes, drains, ponds, pools, marshes, oxbows, backwater channels, mill leats/races, quarries or pits.

16a. Freshwater fishery production and/or management.

16b. Introduction of or alterations to seafood or marine life collection, including commercial netting, the use of traps or fish cages.

17. Reclamation of land from sea, estuary or marsh.

19. Erection and repair of sea defences or coast protection works, including cliff or landslip drainage or stabilisation measures.

20. Extraction of minerals, including peat, shingle, hard rock, sand and gravel, topsoil, sub-soil, shells and spoil.

21. Destruction, construction, removal, rerouting or regrading of roads, tracks, walls, fences, hard-stands, banks, ditches or other earthworks, including soil and rock exposures.

22. Storage of materials.

23. Erection of permanent or temporary structures, or the under-taking of engineering works, including drilling or the laying, maintenance or removal of pipelines and cables, above or below ground.

24. Modification of natural or man-made features (including cave entrances) and clearance of boulders, large stones, loose rock or scree and the battering, buttressing or grading of geological exposures, river banks and cuttings (rock and soil) and infilling of pits and quarries.

26. Use of vehicles or craft within the control of the owner or occupier.

27. Recreational or other activities within the control of the owner or occupier.

28. Introduction of game or waterfowl management and alterations to game and waterfowl management and hunting practice.

* "animal" includes any mammal, reptile, amphibian, bird, fish or invertebrate.