

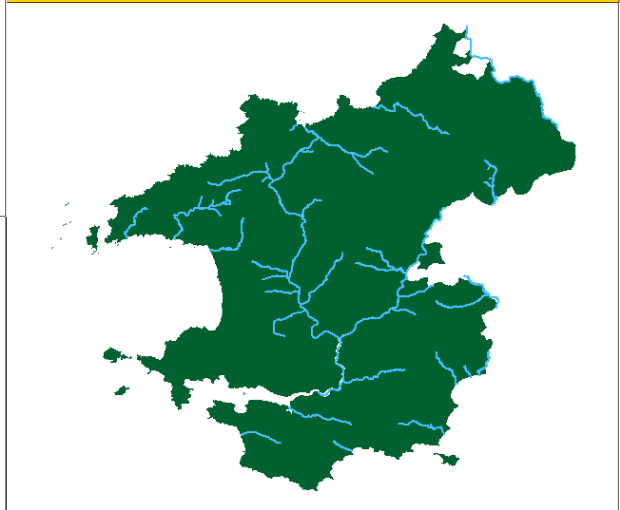
Ecology Rivers and streams provide a mosaic of many different habitats supporting different animals and plants. In the riffles and pools you find freshwater insects like mayflies and caddisflies; on the exposed sediments of shingle and sand many non-aquatic insects such as ground beetles and craneflies are found, whereas dragonflies and damselflies are seen flying over watercourses in the summer.

Watercourses are particularly important spawning grounds for River Lamprey, Brook Lamprey, Sea Lamprey, Bullhead, Salmon and Brown Trout. The rare freshwater white-clawed crayfish and the freshwater pearl mussel are both found in Pembrokeshire's rivers. Marginal vegetated areas provide shelter for frogs, newts and floating water plantain and the banksides support a wide variety of flowering plants and animals including otters, and kingfishers. Rivers also provide vital wildlife corridors for species of bats and birds.



Where in Pembrokeshire? The rivers and streams in Pembrokeshire vary in size and type, with the two larger rivers, the Eastern and Western Cleddau, draining partially from the Preseli Hills. Originally the Western Cleddau flowed north to Aber Mawr but after the last ice age, the river changed course and carved its way south creating Treffgarne Gorge. Below their tidal limits, these rivers join to form the Daugleddau, an extensive and diverse tidal reach of great ecological value. Downstream the Daugleddau broadens into the Milford Haven Waterway, one of the largest natural harbours in the world. There are also smaller rivers such as the Nevern, Gwaun, Solva, Alun and Ritec. Parts of the rivers Teifi and Taf also lie within the county boundary.

Outline Distribution Map



Why are they in trouble? Most of the rivers in Pembrokeshire are of a good or very good quality suitable for many fish species. They are however threatened by:

- Diffuse Pollution.
- Abstractions and lowering of groundwater levels.
- In-river / on bank-side engineering works for fisheries management or flood defence work.
- Siltation / sediment suspension resulting from development work in general, de-watering or pumping out excavations, lack of vegetative buffering between ploughed fields and watercourses, high stocking rates, deforestation, watercourse engineering and soil compaction.
- Invasive species (Japanese knotweed, Australian swamp stonecrop, Himalayan balsam) out-compete native species.

What can you do to help?

- Ask about the 'Adopt a Riverbank' scheme - if you want to volunteer to carry out activities on a river near you, contact the Pembrokeshire Rivers Trust 01437 783070
- If you manage land with watercourses, contact the relevant agencies for information on best practice - Environment Agency on 08708 506 506. CCW on 01646 624000 for advice relating to designated sites, agri-environment schemes or grants or Pembrokeshire Rivers Trust for general advice.
- Avoid disturbing areas of invasive weeds, seek advice on how to control them near a watercourse, take care with chemical treatment. Contact Invasive Species Partnership through Pembrokeshire County Council on 01437 764551.
- Report any pollution incidents to the Environment Agency on 08708 506506.
- Conserve water in your home and at work.

For more information on species identification, where to send records or how you can get involved with specific projects see part 2 of the plan or contact the Biodiversity Officer.

What's being done? European law protects the Cleddau rivers, the Daugleddau and the Milford Haven Waterway. They were designated as Special Areas of Conservation in 2005. These are managed by the Countryside Council For Wales (CCW) who survey and monitor ecological features of designated sites. There are also several laws in place regulating water quality, pollution, abstractions and flood management. The Environment Agency Wales (EAW) carries out monitoring and surveys of water resources, quality and fisheries management in the Cleddau and Pembrokeshire Coast area. Agri-environment schemes and other grant systems such as Living Rivers and Fishing Wales projects exist to protect riverbanks from excessive erosion and work to minimise diffuse pollution in our rivers. The Environment Agency and Forestry Commission both produce good practice guidance on this. The Pembrokeshire Rivers Trust has been set up to help deliver sustainable management of the river systems and they are working with fishing groups and communities to raise awareness of biodiversity issues within the river systems. Invasive weeds are being controlled through an eradication programme.

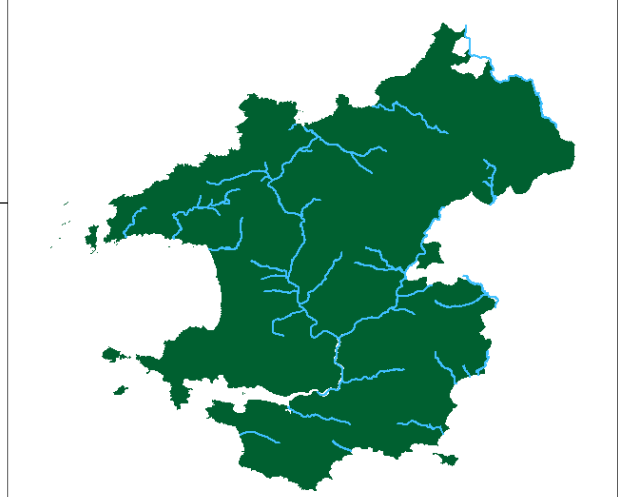
Ecoleg Mae afonydd a nentydd yn darparu brithwaith o gynefinoedd amrywiol yn cynnal gwahanol anifeiliaid a phlanhigion. Yn y rhannau bas a'r pyllau fe welwch drychfilod dwr croyw fel gwybed Mai a phryfed gwellt; ar y gwaddodion graean a thywod noeth fe welwch lawer o drychfilod tir sych fel chwilod y llawr a phryfed teiliwr; tra bo gweision y neidr a mursennod i'w gweld yn hedfan dros ddyfrffosydd yn yr haf.

Mae dyfrffosydd yn silfeydd arbennig o bwysig i lamprai'r afon, lamprai'r nant, lamprai'r môr, penlletwad, eogiaid a brithyll. Yn afonydd Sir Benfro mae cimwch crafanc wyn yr afon a misglod perlog dwr croyw prin i'w cael. Mae ardaloedd ymylol dan dyfiant yn rhoi lloches i frogaod, madfallod a llyriad dwr ar y wyneb ac mae'r glannau'n cynnal amrywiaeth eang o blanhigion blodeuog ac anifeiliaid gan gynnwys dyfrgwn, a glas y dorlan. Mae afonydd hefyd yn darparu tramwyfeydd bywyd gwyllt hanfodol i rywogaethau ystumod ac adar.



Ble yn Sir Benfro? Mae afonydd a nentydd Sir Benfro'n amrywio o ran maint a math, gyda'r ddwy afon fwyaf, y Cleddau Ddu a Chleddau Wen, yn llifo'n rhannol o Fynydd Preseli. Yn wreiddiol roedd Cleddau Wen yn arfer llifo tua'r gogledd i Aber Mawr ond, ar ôl oes yr iâ ddiwethaf, newidiodd yr afon ei chwrs a cherfiodd ei ffordd tua'r de gan greu Ceunant Trefgarn. Islaw terfyn y llanw, mae'r afonydd hyn yn ymuno i ffurfio Daugleddau, dyfroedd llanw helaeth ac amrywiol o werth ecolegol mawr. I lawr yr afon mae Daugleddau'n ehangu i ffurfio Dyfrffordd Aberdaugleddau, un o borthladdoedd naturiol mwyaf y byd. Mae afonydd llai hefyd fel Nyfer, Gwaun, Solfach, Alun a Ritec ac mae hannau o afonydd Teifi a Thaf yn llifo o fewn ffiniau'r sir.

Map Dosbarthiad Amlinellol



Pam fod angen eu gwarchod? Mae ansawdd y rhan fwyaf o afonydd Sir Benfro yn dda neu'n dda iawn sy'n addas ar gyfer llawer o rywogaethau pysgod. Fodd bynnag, maent dan fygythiad oherwydd:

- Llygredd gwasgaredig.
- Tynnu dwr a gostwng lefel dwr daear.
- Gwaith peiranyddol yn yr afon neu ar y lan i reoli pysgodfeydd neu amddiffyn rhag llifogydd.
- Siltio a daliant gwaddodion yn deillio o waith datblygu'n gyffredinol, dihybyddu neu bwmpio allan o gloddiadau, diffyg llystyfiant lledfoll rhwng caeau â'r dyfrffosydd, cyfraddau stocio uchel, datgoedwigo, gwaith peiranyddol ar ddyfrffosydd a chywasgu pridd.
- Rhywogaethau ymosodol (clymog Japan, corchwyn Seland Newydd, rhedyn y dwr, Jac y neidiwr) yn curo rhywogaethau brodorol.

Beth sy'n cael ei wneud? Mae cyfraith Ewrop yn gwarchod afonydd Cleddau, Daugleddau a Dyfrffordd Aberdaugleddau. Dynodwyd hwy'n Ardaloedd Cadwraeth Arbennig yn 2005. Cyngor Cefn Gwlad Cymru (CCGC) sy'n rheoli'r rhain a bydd yn gwneud arolwg ac yn cadw golwg ar nodweddion ecolegol safleoedd dynodedig. Mae amryw ddeddfau'n bodoli hefyd sy'n rheoleiddio ansawdd dwr, llygredd, tyniadau a rheoli llifogydd. Bydd Asiantaeth yr Amgylchedd Cymru (EAW) yn cynnal arolygon ac yn cadw golwg ar ansawdd adnoddau dwr, ac yn rheoli pysgodfeydd yn ardal Arfordir Cleddau a Sir Benfro. Mae cynlluniau amaeth-amgylcheddol a threfnau grant eraill fel prosiectau Afonydd Byw a Physgota Cymru'n bodoli i warchod glannau afonydd rhag erydiad gormodol a gweithio i leihau llygredd gwasgaredig yn ein hafonydd. Mae Asiantaeth yr Amgylchedd a'r Comisiwn Coedwigaeth yn cynhyrchu canllawiau arferion da ar hyn. Sefydlwyd Ymddiriedolaeth Afonydd Sir Benfro i reoli afonydd yn gynaliadwy ac maent yn gweithio gyda grwpiau pysgota a chymunedau i gynyddu ymwybyddiaeth o faterion bioamrywiaeth yn yr afonydd. Mae chwyn ymosodol yn cael eu rheoli trwy raglen ddfodi.

Beth fedrwyd chi ei wneud i helpu? • Holwch ynghylch y cynllun

'Mabwysiadu Glan Afon' - os ydych eisiau gwirfoddoli i gynnal gweithgareddau ar afon gerllaw, cysylltwch ag Ymddiriedolaeth Afonydd Sir Benfro 01437 783070.

- Os ydych yn rheoli tir gyda dyfrffosydd, cysylltwch â'r asiantaethau perthnasol i gael gwybodaeth am arferion gorau, cynlluniau neu grantiau amaeth-amgylcheddol. Cysylltwch ag Asiantaeth yr Amgylchedd ar 08708 506 506, CCGC ar 01646 624000 i gael cyngor perthnasol i safleoedd dynodedig a chynlluniau amaeth-amgylcheddol neu Ymddiriedolaeth Afonydd Sir Benfro am gyngor cyffredinol.
- Arbedwch ddwr yn eich cartref ac yn y gwaith.
- Ceisiwch osgoi ymyrryd â thir lle mae chwyn ymosodol. Gofynnwch am gyngor ar sut i'w rheoli ar bwys dyfrffos. Byddwch yn ofalus gyda thriniaeth gemegol. Cysylltwch â Phartneriaeth Rhywogaethau Ymosodol trwy Gyngor Sir Penfro ar 01437 764551.

I gael rhagor o wybodaeth am adnabod rhywogaethau, ble i anfon cofnodion neu sut i ymwneud â phrosiectau penodol, gwelwch ail ran y cynllun neu cysylltwch â'r Swyddog Bioamrywiaeth.

RHADBOST Rhadbost RLXJ-HAHU-BCAK Partneriaeth Bioamrywiaeth Sir Benfro, t/l Uned Cefn Gwlad, Cynllunio Datblygu, 1B Neuadd y Sir, Hwlfordd, Sir Benfro, SA61 1TP

Ffôn: 0790 154 1728

Ffacs: 01437 776496

www.biodiversitypembrokeshire.org.uk

RIVERS AND STREAMS ● AFONYDD A NENTYDD



The actions listed below aim to

- Maintain current extent and distribution of rivers and streams in Pembrokeshire
- Maintain quality of rivers and streams, subject to natural processes
- Restore rivers and streams to favourable condition where feasible

	ACTION	PARTNERS	DATE	DETAILS	CONTACTS
1	Press Release to coincide with launch of plan	EAW, PRT	July 06	Launch event	Bethan Cox
				Western Telegraph/ Pembs Radio / Environment Agency	Bethan Cox
2	Ensure Eastern and Western Cleddau, Solva, Gwaun, Nevern, Teifi and Taf meet EC Freshwater Fisheries Directive Water Quality Standards. All rivers and streams in the Cleddau and Pembrokeshire Coast area and parts of the Teifi Valley should be classifiable as River Ecosystem Class 1 and 2 for watercourses (i.e. water is of good or very good quality suitable for all fish species)	EAW	Jan 06	Maintain and develop water pollution detection and polluter identification techniques and prosecution procedures; seek appropriate review of penalties	Bob Phillips (EA-W pollution prevention)
				Press for tighter standards and regulation against diffuse pollution	
				Develop, implement and review best practice in pollution contingency planning and response	
3	Ensure 95 percentile flow rates to be met on all relevant river stretches aquifer water balances - targets to be met are set standards in the European Surface Water Abstraction Directive.	EAW	CAMs launch date	Continue to review the status of the area as exempt from groundwater licensing.	James / Sally (EA-W Water Resources).
				Develop an abstraction licensing policy; model and manage water resources within the Cleddau and Pembrokeshire Coast catchment through CAMS (Catchment Abstraction Management Strategy)	
				Ensure the development of sustainable water use and land use through planning policies and the development control function of local authorities	
4a	Educate and promote best practice in agriculture, forestry, domestic and industrial water use and waste disposal	EAW	On going	Maintain and develop pollution prevention, pollution detection and polluter identification techniques and prosecution procedures; seek appropriate review of penalties	Bob Phillips (waste & WQ) Megan Daniel (EAW)
		EAW	On going	Press for tighter standards and regulation against diffuse pollution and contravention of waste legislation	
		EAW	On going	Develop, implement and review best practice in pollution contingency planning and response	
		EAW	On going	Control diffuse pollution from farms on the Nevern through the INTERREG project.	
4b	Educate and promote best practice in fisheries management	PRT	By 31 March 2005	Distribute material promoting catch-and-release of salmon, trout & sea trout to Cleddau & Teifi Valley fisheries. Continue to have information available on request via brochures & displayed on website.	Ben Wilson (EA-W fisheries) Helen Johnston (PRT)
4c	Educate and promote best practice in development	EAW	On going	Request buffer strips on river corridors and ensure protection of bank side vegetation on developments especially planning applications.	Mair Rees (EA-W biodiversity)
5	Invasive weeds eradication programme	PCC, EAW, CCW	On going	Continue with work to control spread of Japanese Knotweed, Himalayan Balsam and other invasives on watercourses through the Invasive Weeds Partnership.	Sean Tilling, Mair Rees, Gayle Wootton
		EAW	On going	Control movement of soil containing Japanese knotweed	Bob Phillips

	ACTION	PARTNERS	DATE	DETAILS	CONTACTS
6	Ensure that all designated rivers and streams receive adequate site management planning, management agreements, agri-environment schemes and other proactive land management initiatives, where appropriate.	CCW, EAW, NAWAD	End date of Fishing Wales scheme March 2006	<p>Continue with Living Rivers Scheme/Fishing Wales to deliver proactive management to riverbanks (subject to ongoing funding).</p> <p>Continue with Tir Gofal scheme and look to work in ways to improve the impact of individual farms within a catchment.</p> <p>Implement pilot higher-tier agri-environment scheme on Deepford Brook.</p> <p>Carry out CCW internal review of consents for Afonydd Cleddau SAC.</p> <p>Carry out EAW internal review of consents for Afonydd Cleddau SAC.</p>	Gayle Wootton Ben Wilson Mary Wilson / Gill Howells
7a	Improve access to the river environment	PRT & Pembrokeshire College	W. Cleddau funding plans by 31 July 2005.	Definition, design and production of funding & implementation plans for a "Cleddau Trail", linking a series of publicly accessible sites along the Eastern and Western Cleddau rivers, to improve local community & visitor understanding of the Cleddau from source to sea.	Helen Johnston, PRT
7b	Developing community involvement in maintaining, protecting and promoting the river environment	PRT	By Dec 2005	Produce training and educational packs for use by community groups, schools and colleges in West Wales	Helen Johnston, PRT
			Sept 2005	Rivers Trusts development workshop focusing on Working with Communities, to be held in Cleddau catchment.	
			By 31 March 2007	9 sites of restored river habitats in West Wales adopted by community groups & being maintained with trained volunteer involvement	
8	Monitor the condition of the habitat (key indicators)	CCW	Summer 2005	<p>Monitor ranunculion habitat</p> <p>Continue with monitoring of wet woodlands and other features of SSSIs and SACs.</p>	Gayle Wootton
		PRT	By 31 March 07	6 demonstration sites selected & agreed with landowners, and best practice methods introduced.	Helen Johnston
		PRT	By 31 March 07	15 landowners implementing best-practice recommendations for protecting riparian land.	Helen Johnston

This plan contains all known information on June 2005, future schemes will be updated on the website plans. The whole plan will be reviewed in 2010.

INTERACTION WITH OTHER HAPs AND SAPs

Management for many species and habitats is compatible with that for the Rivers and Streams, eg. Wet Woodland, Purple moor grass and rush pastures, aquifer fed naturally fluctuating water bodies, coastal and floodplain grazing marsh, Fens, Eutrophic and Mesotrophic standing water, raised bog, Reedbeds, soligenous mire; all bat species, otters, water voles, freshwater clawed crayfish, freshwater pearl mussel, hairy dragonfly, small red damselfly, Southern damselfly, Scarce blue-tailed damselfly, floating water plantain.

A glossary for the abbreviations used in this plan can be found in the full Local Biodiversity Action Plan available from the website or the biodiversity officer.
Website: www.biodiversitypembrokeshire.gov.uk **Tel:** 0790 154 1728