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Wales

Tawe to Cadoxton Management Catchment Summary



Contents

1. Background to the management catchment summary.....	3
2. The Tawe to Cadoxton Management Catchment	4
3. Current Status of the water environment	7
4. The main challenges.....	9
5. Objectives and measures	12
6. What next?.....	18
7. Water Watch Wales	18

1. Background to the management catchment summary

This management catchment summary supports the current consultation on the updated river basin management plans. Along with detailed information on the Water Watch Wales website, this summary will help to inform and support delivery of local environmental improvements.

Natural Resources Wales has adopted the ecosystem approach. This means being more joined up in how we manage the environment and its natural resources to deliver economic, social and environmental benefits for a healthier, more resilient Wales. It means considering and regulating the environment as a whole, rather than dealing with individual aspects separately; weighing up and setting priorities for the many competing demands on our natural resources in a more integrated way. Partnership working is essential to achieve our ambition. By working together in this management catchment we will:

- understand the issues in catchments and how they interact
- understand how the issues are affecting the current local benefits and future uses of water
- involve local people, communities, organisations and businesses in making decisions by sharing evidence
- identify which issues to tackle as a priority.

The Water Framework Directive provides a major overarching framework for river basin management. The Floods Directive sets out a strategic approach to flood risk management planning. A flood risk management plan has been produced for consultation in parallel to the river basin management plan and can also be found on our website. The flood risk management plan details how we propose to manage flood risk across the river basin district by prioritising those communities that are most at risk of flooding and detailing the measures we intend to take to manage their risk.

The flood risk management plan and the river basin management plan will shape important decisions, direct considerable investment and action, and deliver significant benefits to society and the environment.

As part of the consultation we are asking you for your input on priority opportunities and how we can make these summary documents as useful and relevant to the management catchment as possible. Within the river basin management plan consultation documents are a number of consultation questions; these will provide a useful starting point to gather your ideas in order to improve not only this document but partnership options to ensure that we work together to provide the best environmental options. We encourage you to look at the river basin management plans and respond to the consultation questions which you can find on our website.

2. The Tawe to Cadoxton Management Catchment

Figure 1. The Tawe to Cadoxton Management Catchment



The area covered by this management catchment summary includes the catchment areas of the rivers Tawe, Neath, Afan, Kenfig, Ogmore, Colhuw, Thaw and Cadoxton (see Figure 1). The area stretches from Swansea in the west, to southern Penarth in the east and encompasses much of the central part of the Brecon Beacons National Park from which the headwaters of the Tawe and Neath emanate.

Much of the existing development, both recent and historic, has taken place on the flat areas of land in the valley bottoms adjacent to major watercourses. The principal communication links, such as railways, roads (which includes the M4) and the Swansea Canal, have also followed the valley bottoms. In order to accommodate urban and industrial developments, rivers have been confined or re-routed (notably the Tawe and Neath rivers) and flood defences have been constructed, which now represent an important element of the infrastructure in the area. Our management activities are influenced by such legacies.

Historically, industrial activity was particularly extensive in Swansea and the lower Tawe valley. Many of these areas have been remediated and transformed into residential developments and award-winning marina complexes, in part facilitated by the Tawe Barrage. Today, limited shipping activity at Swansea Docks – the former hub of Swansea's industrial past – remains, with the King's Dock still used for cargo operations. In Swansea, as in the main urban areas of Neath, Port Talbot and Bridgend, there are major industrial estates, and in some areas a persistent legacy from former colliery sites, metal ore

extraction/smelting and stone quarrying, which left behind spoil tips, contaminated land and problems with polluting discharges from abandoned mines.

The coastal part of the area supports large industry such as Tata Steel at Port Talbot and Ford at Bridgend. Away from the coast, forestry is an important land-use, particularly coniferous plantations in the upper part of the Neath, Afan and Ogmore catchments where there is almost complete coverage of the steep valley sides, in particular Rheola, Margam, Ogmore and Afan forests. Increasingly, a deciduous mix is planted after harvesting the existing timber, especially along river corridors, in order to enhance biodiversity.

Agricultural activity in the upland areas of the Brecon Beacons is largely restricted to sheep farming on unimproved grassland with some beef cattle rearing. The lower lying areas, particularly in the Vale of Glamorgan, are more fertile and support dairy units, arable farming and beef cattle rearing. The Vale is a distinctive lowland landscape with importance historically, having a wealth of archaeological sites ranging from prehistoric burial chambers and agricultural features to WWII military installations. Additionally, the area's coastal region provides major landscape features which support considerable nature conservation and geological interest.

The area as a whole has a high conservation value with numerous designated sites and the Brecon Beacons National Park. Tourism is vital and visitors are attracted by wide-ranging leisure opportunities, including game fishing, hiking and canoeing in the Brecon Beacons, cycling one of the numerous off-road trails in the valley forests and nine designated bathing waters to choose from along the varied coastline.

The Tawe catchment is one of three areas in Wales where we are trialling an approach to natural resource planning/management. The purpose of the trials is to work with local stakeholders in determining how natural resources are best used and managed. A key element of this is understanding what roles our environment plays in supporting wider society. Our aim is to ensure that our environment is used sustainably, whilst at the same time we are responding to local needs, delivering benefits for people and business.

In February 2014 we held the Tawe to Cadoxton management catchment workshop at the Aberavon Beach Hotel. During this event, local partners and interested parties identified the key benefits provided by the water environment. These included:

- Natural beauty and landscape
- Heritage features and structures
- Biodiversity of rivers and their margins, upland lakes, wetlands, wooded gorges, sand dunes and other habitats
- Woodlands – ancient and commercial
- Leisure opportunities – fishing, boating, cycling, hiking, bird-watching etc.
- Coastline
- Tourism attraction

We continue to work in collaboration with a range of partners and sectors in innovative ways so we can achieve even more together. A flavour of some of the projects that have been delivered within this management catchment over the last 3 years are presented as case studies through this document.

Case study – Misconnections into River Ogmore, Bridgend

- A large storm water sewer outfall into the river near a popular angling pool was contaminated with grey water, sewage litter and fungus. The source of the pollution was domestic drainage where toilets, sinks, washing machines, dishwashers are connected by mistake to surface water drains, instead of the foul sewer.
- The local water company carried out investigative work to establish the location of the discharges and also checked the sewers. Our environment officer also carried out joint inspections with the water company and local authority. CCTV surveys were carried out to find polluted branches of the storm sewer and visual inspections of the drainage and properties were made. Dye tracing was carried out to confirm property connections. The local authority officer then worked with the householders to rectify the misconnection.



2.1 Key facts

We use the term water bodies to help understand and manage the water environment. A water body is part, or the whole, of a river, lake, ground water or coastal water. The number and type of water bodies in the management catchment is shown in the table below

Table 1. Number and type of water bodies.

Number of water bodies	Natural	Artificial	Heavily Modified	Total
River*	46	2 (canals)	5	53
Lake	1	2	2	5
Coastal	2		1	3
Estuarine	1		3	4
Groundwater	15			15
Total	65	4	11	80

*River water bodies includes canals and surface water transfers

There are areas in the catchment where the water environment is recognised as being of particular importance, including rare wildlife habitats, bathing waters or areas around drinking water sources. These areas are known collectively as protected areas and are detailed in the table below.

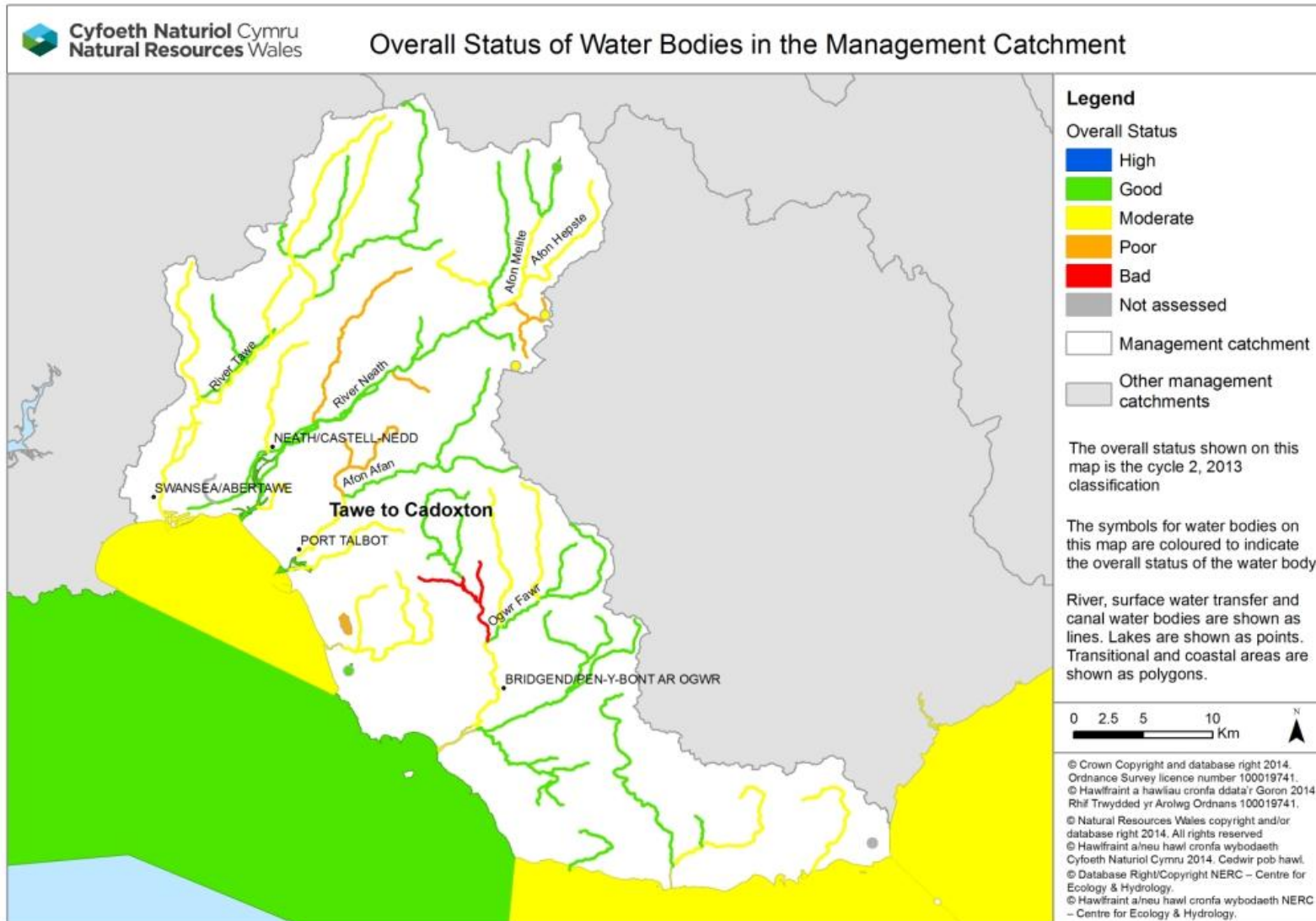
Table 2. Number and type of protected areas.

Protected Area	Number
Bathing Waters	14
Drinking Water Protected Areas	18
Natura 2000 and Ramsar sites	15
Nitrate Vulnerable Zones	177 ha
Shellfish Waters	4
Urban Waste Water Treatment Directive - Sensitive areas	1

3. Current Status of the water environment

We assess the condition of water bodies through monitoring which produces an annual classification. The current status for each water body is shown in figure 2. Note, since 2009, we have updated some of the systems we use to classify water bodies, including changes to some standards and water body boundaries.

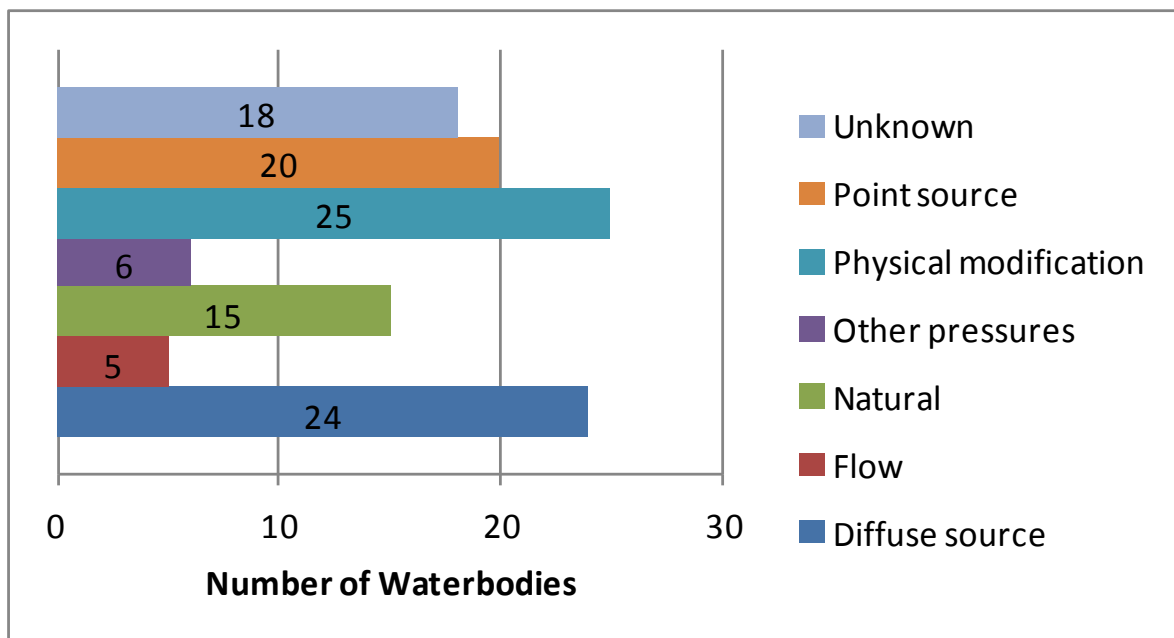
Figure 2. The current status of the Tawe to Cadoxton Management Catchment (new building blocks, 2013 interim classification).



4. The main challenges

We have carried out a programme of investigations to better understand the causes as to why water bodies are failing to meet the required standards. The results of our findings are summarised in Figure 3.

Figure 3. Reasons for not achieving good status.



Water bodies are often impacted by more than one issue. We have identified six water bodies within the Tawe, Kenfig, Neath and Afan catchments that are failing because of physical modifications such as man-made weirs which prevent fish migrating upstream and reaching their spawning grounds. The Kenfig catchment has three rivers which are likely to be failing as a result of surface water abstraction from industry. Contaminated land is a reason for failure in the Fendrod and the legacy from coal mines is very likely to be a reason for failure in the Pelenna. Continuous discharge from wastewater treatment works is a reason for failure in the Sychryd and is very likely to be a reason for failure in the Llynfi. Intermittent discharges (sewer overflows) from wastewater treatment works are very likely to be a reason for failure in the Llynfi, Fendrod and Dulais (Neath). The cumulative impact of misconnected wastewater drainage from housing and industrial estates are very likely to be a reason for failure in six water bodies in the Ogmore and Neath catchments.

4.1 Workshop feedback on challenges

We need to work together to ensure the overall aims of the Water Framework Directive are met and to agree on the priority issues and solutions. The following is a list of some of the challenges that were raised as part of the workshop held in Aberafan (it is not a full list). All of the comments received will be taken into account and the following is just a flavour of these comments:

- Barriers to fish migration
- Flooding – water and asset management
- Flooding – habitat improvement
- Energy-generation projects – hydropower, tidal lagoon
- Recreation – improved rural and urban access
- Abstraction issues

- Diffuse pollution from urban areas, including drainage misconnections, development pressure
- Forestry felling issues – Phytophthora (poor communications), acidification, flood risk
- Forestry – low species diversity
- Rural land management – soil erosion and diffuse pollution from agriculture
- INNS (Invasive Non Native Species), especially Himalayan Balsam and Japanese Knotweed
- Community engagement and awareness-raising
- Industrial pollution and historic issues
- Bathing water quality
- Limited project-funding opportunities

4.2 Tawe natural resource management trial

The Environment Bill proposes new duties for Natural Resources Wales to take an area-based approach to the sustainable management of natural resources. The Tawe river catchment is one of three areas being used to explore how to embed the ecosystems approach to natural resource management in a specific geographical area.

The Tawe catchment ranges from the wild uplands of the Brecon Beacons national park to the heart of Swansea city including Swansea Bay. The Tawe has carried Swansea through the ages and the lower reaches bear the scars of the area's industrial legacy. The uplands offer a high conservation value with numerous designated sites including Special areas of Conservation, Sites of Special Scientific Interest and the Brecon Beacons National Park. Tourism is vital in the area and visitors are attracted by recreation such as angling, outdoor activities, national parks and the EU designated bathing waters.

The Tawe is a fascinating and beautiful place with a vibrant history. The mixture of social, economic and environmental issues lends it to be a good subject for this Natural Resource Management Trial. The Swansea valley has a plethora of interesting and passionate people who are the key to making this project a real success and ultimately generate a better, healthier, more sustainable place to live and enjoy.

Natural resource planning requires a joint collaborative planning exercise through which issues and priorities are agreed, opportunities are identified and existing mechanisms that impact on natural resources work together to achieve delivery.

The output from this approach is proposed to be an Area Statement which clearly sets out the priorities and opportunities for the management of natural resources in the Tawe catchment. The ongoing River Basin Planning work within the Tawe catchment will form an integral part of the natural resource management trial. More information on the ecosystems approach and natural resource management can be found in the Western Wales River Basin Plan.

Case study – Fisheries improvement at Green Park weir

- Rising at 500m above sea level, the River Afan flows 26 km into Swansea Bay at Port Talbot. The history of coal mining and metal refining within the catchment resulted in the virtual elimination of the salmonid fishery in the early 19th Century.
- Four out of the six surveyed Afan water bodies are currently failing the WFD objective for fish.
- A salmon action plan consultation in 2003, identified Green Park Weir as the main fish passage obstruction on the Afan. Positioned at the head of tide, the weir is very important for fish making the transition from the marine to the freshwater environment.
- The new fish pass installed in 2011 consists of a twin flight Larinier super active bottom baffle fish pass set on three planes with a resting pool in the middle. Designed to operate between Q90 to Q5 flows, the fish pass is innovative and the only Larinier with “split level channels” in the UK.
- Improved migratory salmonid access to the Afan is expected to deliver increased fish populations, helping to achieve the WFD target of good ecological status for all the water bodies in the Afan catchment by 2027.



5. Objectives and measures

This section outlines what we are aiming to achieve and the proposed new measures that need to be put in place. We aim to develop a single integrated programme of measures by 2021 that meets Water Framework Directive objectives:

- **Prevent deterioration in status**

Water body status will not be allowed to deteriorate from the current reported status.

- **Achieve the objectives for protected areas**

Achieve the standards set by the relevant directive under which they were designated. For water dependent Natura 2000 sites we will aim to achieve conservation objectives, achieving good status by 2021 is a milestone towards this objective.

- **Aim to achieve good overall status for surface and ground waters**

Implement measures to achieve good overall status where they are technically feasible and not disproportionately costly.

5.1 Measures

We have reviewed the reasons why water bodies are failing to achieve objectives and identified potential measures. Measures are divided into two groups. National measures apply to the whole of Wales, or the United Kingdom. In general these set the legislative, policy or strategic approach. Examples include a national ban on using a particular chemical or a national strategy for prioritising and funding the remediation of abandoned mines. Local measures are specific to the river basin district or a part of it. For example, the removal of invasive plants along a length of designated river or a local campaign targeting misconnections across an industrial estate. Many of the actions listed will also have multiple benefits. For example, sustainable urban drainage (SuDs) schemes help to reduce urban pollution, sewage pollution and changes to water levels.

A list of all national measures, both new and existing, and the local measures at the water body scale are detailed on Water Watch Wales. If you know about any others or want to suggest new measures, please tell us in your response to the consultation. The river basin management plan will become a statutory document hence the importance of ensuring that the correct measures are identified through this consultation.

The table below summarises the local measures for the management catchment, including those identified for protected areas. The high level categories describe the types of action required and broadly the options that are available, including voluntary and regulatory measures. At the local scale some of the options described might not be considered appropriate. There is overlap between some categories.

Table 3. Summary of local measures.

Measure	Description	No. of water bodies
Acidification restoration	Emissions controls and upland restoration: blocking drainage, restoring blanket bog, within forestry plantation blocking forest drains and establishing native trees within the riparian zone, liming options. Some overlap with "address air pollution".	3

Measure	Description	No. of water bodies
Address air pollution	Emissions controls to reduce nitrogen and acidic deposition. Some overlap with "acidification restoration".	14
Address point source pollution	Investigate and regulate pollution from point sources. Overlaps with "reduce pollution from sewage discharges" and "other waste water discharges".	14
Appropriate coastal process and sediment management	Measures to protect and restore integrity of dune systems.	3
Complete first cycle investigation	All ongoing WFD investigations from first cycle programme.	27
Drainage and water level management	Investigate and implement changes to land drainage regimes and structures to restore water levels.	28
Dredging and silt management	Includes reducing siltation at source through land management, and implementing sustainable dredging and silt disposal regimes.	5
Improve fish passage and habitat	Remove or modify barriers to fish passage.	6
Improve flows and water levels	Reduce impacts of regulated flows and abstractions, restore more natural flow regimes, implement options to improve water levels, such as water efficiency and recycling measures, alternative sources and supplies.	15
Manage invasive non-native species	Eradication and/or management of invasive non-native species in line with current national invasive species Action Plans. Includes biosecurity good practice, such as "CHECK-CLEAN-DRY" and Be Plant Wise.	32
Mine water and contaminated land remediation	Coal and metal mine, and contaminated land remediation - including passive and active mine water treatment, capping of spoil, removal of wastes to landfill, and channel diversion.	6

Measure	Description	No. of water bodies
Mitigate impacts of flood and coastal defences	Reduce impacts of flood defence structures and operations - improve connectivity, habitat, and morphology by implementing options through capital and maintenance programmes, such as soft engineering, opening culverts, upgrading tidal flaps, changing dredging and vegetation management. Includes the national habitat creation programme to address coastal squeeze.	15
Mitigate impacts of shipping, navigation and dredging	Assess and implement options for adapting dredging regimes and reducing the impacts of physical modifications.	4

Some examples of actions that are already under way include:

- Schemes to improve fish passage at Green Park Weir, Marcroft Weir and Nant Cynon delivered by Afan anglers, in collaboration with Natural Resources Wales.
- Habitat improvements in lower Ogmore delivered by Ogmore Angling Association, in collaboration with Natural Resources Wales. Also gravel reinstatement on Upper Garw river.
- We are reviewing discharge permits and abstraction licences to ensure they are environmentally protective.
- Local authorities are working with us to find and resolve misconnections.
- Businesses are working with us on industrial estates to improve their pollution prevention measures.
- The Coal Authority operates several minewater treatment plants in this catchment, e.g. Pelenna, Ynysarwed, and is developing a further scheme at Aberbaiden colliery on the Kenfig.
- Afan wetland creation – this is a new project which aims to create wetland habitat in the Afan catchment between the confluence of the Corrwg with the confluence of the Pelenna.
- The Clear Streams initiative to improve the water environment in the urban communities of Swansea and Maesteg. ‘Clear Streams - Maesteg’ involves two water bodies in the Llynfi catchment.

5.2 Workshop feedback on solutions

Of the challenges raised at the management catchment workshop, the following potential solutions were proposed:

- **Flooding – habitat improvement**
Proposed solutions included: influence planners and developers to recognise ecological benefit of numerous ‘small’ contributions, such as constructing drainage ditches rather than culverting.
- **Recreation – improved rural and urban access**

Proposed solutions included: education – to encourage the public to use pathways, particularly inland rights of way which have enjoyed less promotion than coastal routes. Benefits to social equality and pride in local environment / community. *River ranger* scheme (on Tawe).

- **Urban diffuse pollution**

Proposed solutions included: better management of urban drainage, through less pipework and more wetlands and ponds. More strategic approach to tackling misconnections and diffuse pollution generally, with awareness-raising being key. *Connect Right* campaign and enhanced focus on targeting developers to avert further misconnections. More stringent building control sign-off. Water-safe accreditation.

- **Forestry**

Proposed solutions included: improved planning to enhance diversity, better management and liaison, within Natural Resources Wales and with partners.

- **Invasive Non Native Species, especially Himalayan Balsam and Japanese Knotweed**

Proposed solutions included: top-down catchment approach, involving the community, e.g. for HB-pulling.

- **Community engagement and awareness-raising**

Proposed solutions included: make it social. Make it fun. Build in key environmental messages.

- **Industrial pollution and historic issues**

Proposed solutions included: new byelaws for Natural Resources Wales/local authorities/internal drainage boards. More research into small-scale mine water treatment approaches.

Case studies:

- **Industrial Estate Surveys** - Industrial estates across Neath Port Talbot, Bridgend and Swansea have been surveyed by contractors which have identified numerous pollution issues which were then investigated by officers. The surveys also provide vital information for officers involved in incident response.
- **Clear Streams Llynfi** - As part of the Clear Streams initiative in the Llynfi valley, we delivered a partnership project with the Keep Wales Tidy Eco Schools co-ordinator which aimed to engage and inspire young people to take an active role in improving the water quality of the River Llynfi. We delivered workshops to talk about pollution, misconnections, invertebrates & the food cycle (with the help of Hector the Otter!). The Clear Stream (Llynfi) initiative will continue to work with stakeholders in the Llynfi valley and also hopes to deliver the pioneering Eco Schools workshops across the wider Ogmore catchment in the future.



Misconnections model made by officers in the Neath Port Talbot Bridgend environment management team.

5.3 Alternative objectives

We have identified a small number of water bodies where because of the nature of the problem or the required measures we propose an extended deadline or less stringent objective (less than good). In each case we have provided a justification.

Table 4. Proposed alternative objectives and justifications

Alternative objective	Justifications	Number of water bodies	Water body
Less stringent objective	Technically infeasible – ubiquitous and persistent chemical	2	Nant y Fendrod - headwaters to confluence with Tawe Tawe -confluence with Twrch to tidal limit

5.4 Opportunities for partnerships

There are several external funding opportunities, which could support projects that contribute towards Water Framework Directive outcomes. Each fund has its own priorities, budgetary allocation and application process. Types of funding for consideration include:

- European funds – The EU provides funding from a broad range of programmes.– go to the Welsh European Funding Office website for more information.
- Lottery funding – such as Heritage Lottery Fund, Postcode Lottery and BIG Lottery Fund which have a range of programmes from £5000 up to £millions.
- Charities, trusts & foundations – there are many of these operating and they often have a specific focus – either geographically or topically and will support local charities and projects.
- Businesses and sponsorship opportunities – including making the most of the Welsh carrier bag charge!
- Public bodies – local authorities, Welsh Government, UK Government and NRW may have annual funding opportunities or one-off competitions for their priority areas.
- Crowd funding – gathering support from a wide range and number of funders, often including individuals and usually using the internet to raise awareness for a specific project needing funds.
- Trading – increasingly funders are looking to support organisations with longer term sustainability in mind so developing trading opportunities can be something to consider too.

Your local County Voluntary Council and Wales Council for Voluntary Action will have up to date information on opportunities such as these as well as a host of other support available.

6. What next?

This summary is intended to be a snap shot of the management catchment and should enable you to be able to access further detail using Water Watch Wales. We welcome your views on how we can improve how we do this.

The summary supports the current consultation on the updated river basin management plans. We encourage you to look at the river basin management plans and respond to the consultation questions which you can find on our website. If you have any questions, please e-mail:

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westernwalesrbd@naturalresourceswales.gov.uk

7. Water Watch Wales

During the implementation phase of the first river basin management plan many of our partners and stakeholders requested access to data and information to assist them in helping to deliver local environmental improvements. It was quite clear early on that the first plan was difficult to navigate and access at a local scale. Consequently with both the support and input from the river basin district liaison panels a web based tool has been developed. This tool is called Water Watch Wales. This is an interactive spatial web-based tool that provides supporting information and data layers which can assist partners.

We are continuing to develop this tool and see it as a critical link between the more strategic river basin management plan and local delivery. It should enable the user to access information on:


- classification data at the water body scale
- reasons for not achieving good status
- objectives
- measures/actions, including protected area information
- partnership projects





Data can be retrieved in a number of formats (spreadsheets and summary reports). A user guide together with frequently asked questions is included with the tool and can be accessed from a link on the home page.


Figure 4. Opening screen shot for Water Watch Wales

Water Watch Wales Map Gallery

The Natural Resources Wales Water Watch Map Gallery is a collection of web maps related to the [Water Framework Directive](#) in Wales. Find out more about the Water Framework Directive by viewing the gallery below. Content of the website will be developed and added to over time. Use the send feedback button on the right of this page to email us with comments and suggestions.



- **RBMP Consultation Map**
A map providing information for the River Basin Management Plan Consultation for Cycle 2 of WFD.
[View map >](#)
- **WFD Comparison Map**
This map shows Water Framework Directive river waterbody catchments in Wales, with overlap into neighbouring regions of England, symbolised according to the baseline classification in 2009 and the latest assessment classification.
[View map >](#)
- **WFD Projects Map**
WFD projects added by partners and co-deliverers. **Add project.**
[View map >](#)
- **WFD Rivers and water-bodies in Wales**
Cycle 1 WFD Rivers and other water-bodies in Wales with classifications, reasons for failure and summary reports
[View map >](#)





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