



**Cyfoeth
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Cymru
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Wales

Clwyd Management Catchment Summary

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1. Background to the Clwyd 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.

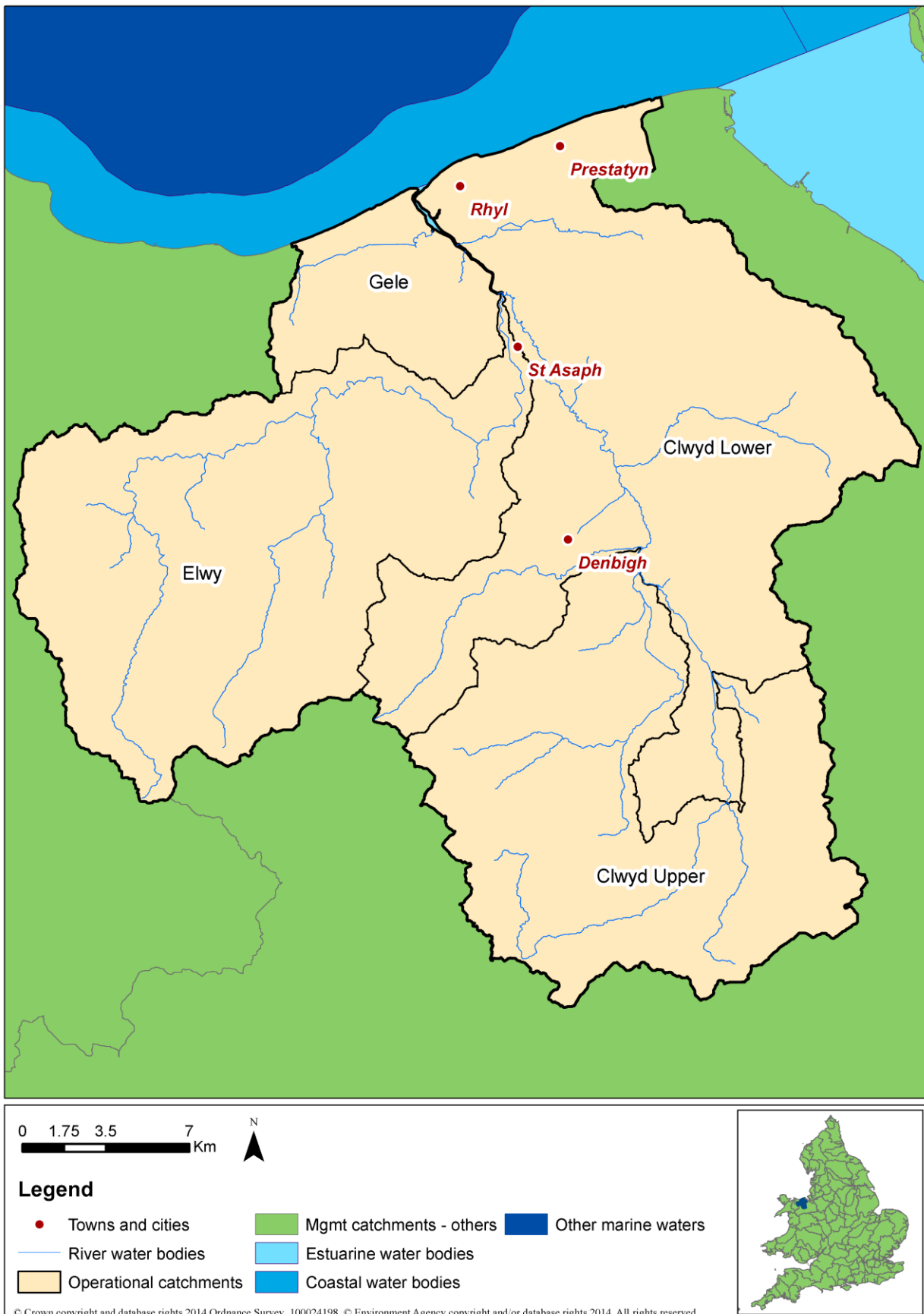
The Water Framework Directive provides a major overarching framework for river basin management. The Floods Directive sets out a strategic approach to flood risk management planning. A flood risk management plan has been produced for consultation in parallel to the river basin management plan and can 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 Clwyd Management Catchment

Figure 1. Clwyd Management Catchment map



The Clwyd has its headwaters in Clocaenog forest and the Elwy, a major tributary, rises slightly to the west in the Hiraethog moors. Agriculture dominates the largely rural Clwyd catchment. Mixed livestock rearing is a feature of the upper catchment along with areas of forestry such as at Clocaenog. Dairying and some arable crops are more common in the fertile lowlands. Part of the lower catchment is a nitrate vulnerable zone for both surface and groundwater. The lower part of the Clwyd was canalised in medieval times from Rhuddlan to the sea. Modified natural lakes provide public water supplies, and the main river Clwyd is supported by ground water augmentation when flows are naturally low.

Populations are centred on Ruthin, Denbigh, St Asaph and Rhyl. Tourism is important to the local economy. The Clwydian range and Dee Valley Area of Outstanding Natural Beauty is a popular location for walkers and contains several Iron Age hill forts. The coastal plain has EU designated bathing waters at Rhyl, Prestatyn and Kinmel Bay. The catchment is also important for salmon and sea trout fishing.

In February 2014 a Clwyd catchment workshop was held at Glyndŵr University, St Asaph. During this event the benefits of the catchment were captured. These included;

- Tourism & recreation - bathing beaches, fishing, country parks, importance to local economy
- Food production - crops and livestock
- Carbon capture in the uplands
- Water supply - agriculture, drinking water both public and private supplies
- Forestry - multiple benefits e.g. timber, employment, flood control habitat creation, carbon sequestration
- Biodiversity - range of habitats and species, Clwyd particularly important for sewin (sea trout)
- Landscape value - visual amenity, designation as Area of Outstanding Natural Beauty

Natural Resources Wales continues to work in partnership with a range of partners and sectors in innovative ways so that 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 together with projects in development are included below:

Table 1. Partnership projects in the management catchment

Project Name	Project Description	Partners	Funding sources
Glanfyddion Cut Rhuddlan	Tidal flap with eel pass	Afonydd Cymru	European Fisheries Fund
Elwy Habitat Project	Soft revetment and bank stabilisation	Coed Cymru, Conwy BC	Conwy County Borough Council, WFD TSO
Habitat restoration on the Afon Corris	Fencing to improve habitat on the Afon Corris near Cyffylliog	Afonydd Cymru	WFD TSO fund
Gallen fish pass	Construction of fish pass over man-made barrier	Landowner, Afonydd Cymru, Clwyd & Conwy River Trust	European Fisheries Fund

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 2. Number and type of water bodies.

Number of water bodies	Natural	Artificial	Heavily Modified	Total
River*	23	0	7	30
Lake	0	0	1	1
Coastal	0	0	1	1
Estuarine	0	0	1	1
Groundwater	7	0	0	7
Total	30	0	10	40

*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.

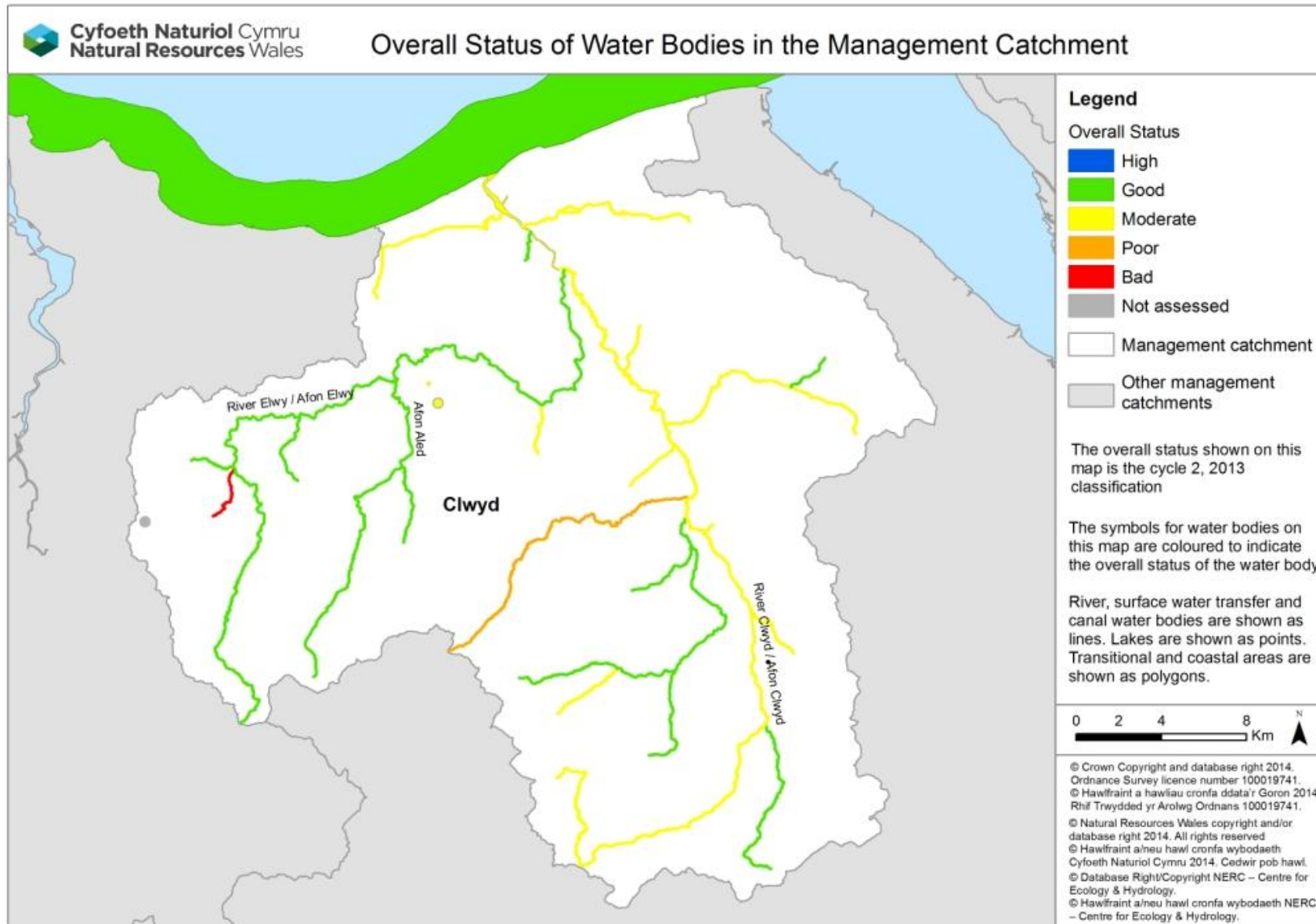
Table 3. Number and type of protected area

Protected Area	Number
Bathing Waters	8
Drinking Water Protected Areas	9
Natura 2000 and Ramsar sites	13
Nitrate Vulnerable Zones	13160ha
Shellfish Waters	2
Urban Waste Water Treatment Directive - Sensitive areas	0

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.

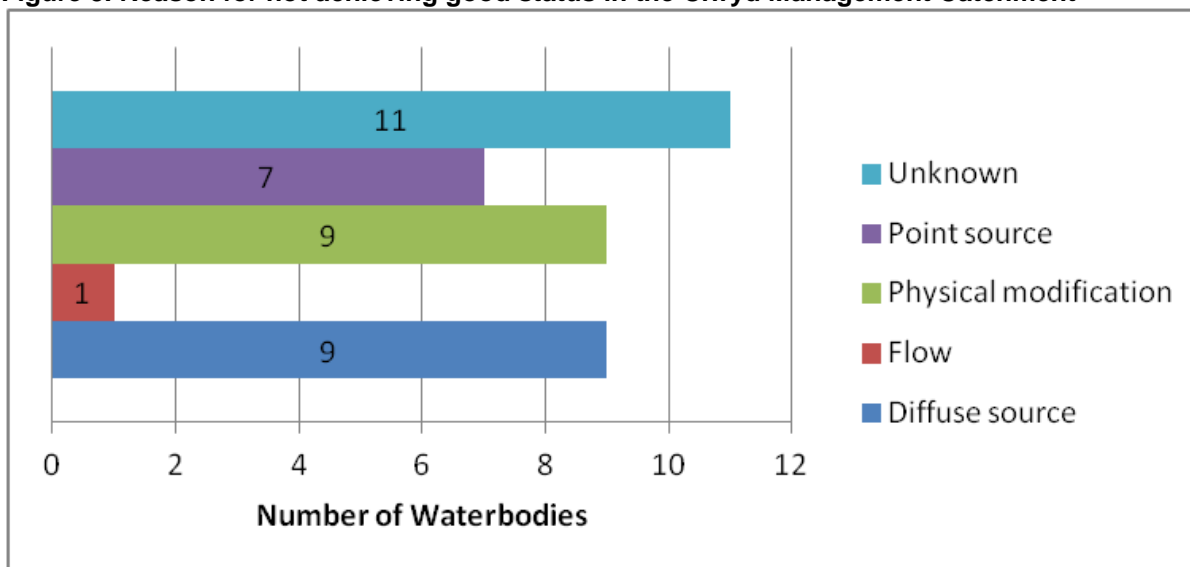
Figure 2. Current status of the Clwyd Management Catchment (new building blocks, interim 2013 classification)



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. Reason for not achieving good status in the Clwyd Management Catchment



Physical modifications are mostly artificial barriers which prevent fish migrating and reaching their spawning grounds for example a mineshaft on the Glanfyddion. There are a number of other partial barriers that could be improved. Diffuse sources are sediment and phosphate inputs from agricultural and rural land management, which impact on a number of rivers in the Clwyd including the Gallen, Wheeler, Bach and the main river Clwyd. Discharges from wastewater treatment works contribute to phosphate failures in the main Clwyd and locally in some tributaries.. Bathing waters are at risk from organisms that occur in waste effluent, originating from urban and rural runoff as well as discharges from wastewater treatment works.

4.1 Workshop feedback on challenges

We need to work together to ensure the overall aims of the Water Framework Directive are met, in order to work together effectively we need to agree on the issues and solutions. The following section includes some of the issues that were raised as part of the workshop; however 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.

- Upland land management and drainage affecting spates lower down catchment
- Flooding of domestic and business property, sewage works and land
- Diffuse pollution from urban areas and impact on bathing waters
- Diffuse pollution from rural land management - nutrients, sediments
- Predation of fish by birds, particularly impact on juvenile salmonids
- Invasive non-native species e.g. Himalayan balsam, signal crayfish

Case study – the Gallen fish pass

The Afon Gallen is a tributary of the Afon Clwyd and there are fewer numbers and species of fish than expected in this type of river so it has not reached good status. A disused weir was a barrier preventing fish including salmon, sea and brown trout from moving upstream to spawning areas. Land management practise is also causing run-off from tracks and sediment from the fields to get into the river.

Fish easement works were put in place by Afonydd Cymru, and involved decreasing the height of the jump by over a metre. A rocky ramp consisting of several pools was put in place to raise the downstream levels. The project has opened up over 20km of tributaries.

Afonydd Cymru has also carried out some habitat restoration work in the Gallen catchment. 300m of fencing and 75m of soft revetment improvement are complete, with a further similar sized habitat scheme planned.



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 4. Proposed list of local measure for the Clwyd Management Catchment

Measure	Description	No. of water bodies
Complete first cycle investigation	All ongoing WFD investigations from first cycle programme.	9
Dredging and silt management	Includes reducing siltation at source through land management, and implementing sustainable dredging and silt disposal regimes.	2
Improve fish passage and habitat	Remove or modify barriers to fish passage	3

Measure	Description	No. of water bodies
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.	3
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	2
Mitigate impacts of shipping, navigation and dredging	Assess and implement options for adapting dredging regimes and reducing the impacts of physical modifications.	1
New Investigation	Includes investigations for all new failures, deterioration, and drinking water protected areas	21
Reduce pollution from other waste water discharges	Reduce pollution from other (non-sewage) point sources, both regulated and unregulated. Investigate and implement basic pollution prevention measures, including provision of up to date advice and guidance, such as correct handling and storage of chemicals and waste, management of trade effluent, and regulation.	1
Reduce pollution from septic tanks	Target actions to ensure septic tanks are maintained correctly. Where necessary issue formal works notices to owners to relocate or replace tanks and soakaways.	3
Reduce pollution from sewage discharges	Reducing pollution from continuous and intermittent discharges, includes additional treatment at sewage treatment works (e.g. phosphate stripping), investigating and tackling sewer blockages, and implementing sustainable drainage to reduce surface water drainage to sewers.	5
Sustainable access and recreation management	Reduce the impacts of erosion, disturbance and damage from both water-based and terrestrial access, including tackling illegal off-roading.	3
Sustainable agricultural practices	Implement basic and additional measures such as correct	21

Measure	Description	No. of water bodies
	management of slurry, silage, fuel oil, and agricultural chemicals; clean and dirty water separation; nutrient management planning; buffer strips and riparian fencing; cover crops and soil management. In N2k sites changes to grazing regimes may be required, includes scrub management. Within NVZs comply with storage and spreading regulations.	
Sustainable marine development	Includes off-shore energy developments, such as oil and gas exploration and tidal energy.	1
Sustainable woodland and forestry management	Restore the riparian zone, disconnect forest drains, monitor the effectiveness of the 5 principle risks associated with forestry and use forestry and woodland to reduce diffuse pollution.	1
Tackle misconnections and urban diffuse pollution	Investigate and solve misconnections to surface water drains (at residential and commercial properties) and implement sustainable drainage schemes (SuDS) to reduce diffuse pollution.	2
Total		78

Actions already under way in this catchment include:

- Addressing land management issues to improve overall fish habitat, for example improving migration in the Clywedog and Gallen
- Denbighshire County Council is identifying environmental issues and ways to maintain and enhance the environment in the short and long term
- Land owners and farmers are ensuring best practice to minimise the impact of farming and forestry activities on rivers, includes fencing schemes to create river corridors, soil testing and nutrient management plans
- Private dischargers and Welsh Water are ensuring appropriate treatment of sewage effluent, to minimise solids and nutrients entering the river system
- North Wales Wildlife Trust Alyn-Wheeler Living Landscapes project
- Natural Resources Wales has worked with partners on the Glanfyddion Cut, Bach, Wheeler – lower, Ystrad, Dŵr Ial, Hesbin, Corris, Clwyd – upstream of Hesbin and Gallen as part of our focus during the first river basin cycle.
- Afonydd Cymru working with a landowner in the Ystrad has installed a cattle crossing, provided fencing, gates, a water supply and drinking troughs.
- Afonydd Cymru are working with landowners in the Dŵr Ial to provide bankside fencing. A Muck to Money event was held in February 2014 in partnership with Farming Connect. The event aimed to improve understanding of the use of slurry to replace inorganic fertiliser and soil management to prevent compaction and run-off

- Elwy habitat project – Coed Cymru and Conwy County Borough Council, soft revetment, bank stabilisation, tree planting.

Case study – Clwyd natural flood risk management

Since the St Asaph floods in 2012 a review of existing flood defences in the Clwyd is underway. The Clwyd Natural Flood Risk Management project complements this. Managed by Cadwyn Clwyd, Rural Development Agency for Clwyd, in partnership with Natural Resources Wales, the project will identify benefits of natural flood risk management to ecosystem services in the catchment.

The aim is to alleviate flooding the lower catchment. The work will look at funding options for implementing some of the proposals at a catchment scale. Options may include tree planting, grip blocking or changes to farming practices. This is an opportunity to address concerns about flooding that were identified in the Clwyd catchment workshop in February 2014.

5.2. Workshop feedback on priorities and solutions

Concerns on current status raised at the workshop have been highlighted in Section 3, solutions and priorities were also discussed. Of the issues raised on the day, the following were flagged as priorities:

- **Diffuse pollution from urban areas, impact on bathing waters**
Proposed solutions include: Ongoing DCWW catchment management "address at source" and asset improvement programme; education and awareness raising about residential and industrial misconnections, use community groups to help this; address highway drainage
- **Diffuse pollution from rural land management - nutrients, sediments**
Proposed solutions include: Reduce soil erosion by targeting planting (e.g. maize) and education for NGOs/landowners on how river dynamics work. More riparian fencing (with maintenance agreements) and artificial wetlands needed to reduce nutrient and sediment loss. Adapt language and activity to make it relevant to landowners. Look at how Rural Development Plan could be used to help fund work.
- **Upland land management and drainage affecting spates lower down catchment**
Proposed solutions include: Target woodland and heath management more for water, increased tree planting, grip blocking
- **Flooding of domestic and business property, sewage works and land**
Proposed solutions include: Hold water in the uplands (see separate bullet point), prevent infiltration to sewer, more SUDS, ensure water can drain off flood plain, dredging and/or clearing debris from rivers (more dialogue and clarity needed between NRW and landowners), consider re-introducing local drainage board, improve coastal defences.

5.3 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, trust & 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.
- Crowdfunding – 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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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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