



water for life and livelihoods

**Consultation Response Document
to the draft Northumbrian River
Basin Management Plan**

We are the Environment Agency. It's our job to look after your environment and make it **a better place** - for you, and for future generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

The Environment Agency. Out there, making your environment a better place.

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Key outcomes

The consultation on the draft River Basin Management Plan within the Northumbria River Basin District generated a significant amount of interest, with over 80 different organisations and individuals responding.

Throughout the six month consultation period, the Northumbria River Basin District Liaison Panel and Environment Agency held a number of events and meetings to engage interested parties. All of these events prompted lively debate and gave constructive feedback to improve the River Basin Management Plan and inform future ways of working.

The range of organisations who responded and the comments made reflects the diverse nature of the Northumbria River Basin District. This document provides further details on the key points raised and how the Environment Agency intends to deal with the comments.

In summary, a number of key themes emerged, these are:

- Size and presentation of the plan
- Level of ambition in the first cycle
- Missing information on water body classification
- Over-emphasis on a small number of sectors to deliver the first cycle
- Many measures in Scenario C should be in Scenario B
- Lack of clarity over what will happen in cycles two and three and the future of the Liaison Panels.

Many of these comments also apply to other river basin districts in England and Wales. In light of the feedback from the consultation, we have made a number of changes for the first River Basin Management Plan, as follows:

- Reviewed the content and presentation of the main document and annexes
- Updated and reviewed the current status and future objective for every water body
- Reviewed the local and national measures, including feedback from consultation responses.

It is clear that a balanced approach is needed in the delivery of the plan. Comments in relation to under ambition from one sector directly contradict a feeling of “gold plating” from another sector. Similarly the potential for measures such as Water Protection Zones prompted polarised views. Part of the challenge in the delivery of the plan is to ensure that all sectors understand the rationale behind the measures implemented and recognise the views of others.

We were pleased that so many organisations recognised that delivering the Northumbria River Basin Management Plan will require new ways of working together, and volunteered information on projects they are currently involved in or plan to deliver.

A number of respondents provided specific information on their local water bodies often linking pressures to issues and proposing solutions. We have not always been able to include the full detail in the plan; we will retain and use this information for delivering the plan from December 2009 onwards.

We would like to thank everyone who took the time to make a contribution to the consultation. We look forward to working together to deliver the first Northumbria River Basin Management Plan and improving our water environment.

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1 Introduction

The Water Framework Directive¹ (WFD) establishes new and better ways of protecting and improving rivers, lakes, groundwater, transitional (where freshwater and sea water mix) and coastal waters. The WFD is based on a six-yearly cycle of planning, action, monitoring and review called River Basin Management Planning.

The WFD and River Basin Management Planning specifically encourages the active involvement of everyone in planning for, and delivering, a better water environment.

Draft River Basin Management Plans

On 22 December 2008 we published the draft Northumbria River Basin Management Plan for consultation. The plan set out detailed proposals for improving the water environment for the next six years and beyond. It described the main issues for the Northumbria River Basin District (RBD) and highlighted key actions proposed for dealing with them. Supporting annexes to the main document gave more detail on the current state of waters in the RBD, the actions proposed and the mechanisms that can be used to forward these actions.

We worked closely with the Northumbria River Basin District Liaison Panel to develop the draft River Basin Management Plan and promote the consultation. The liaison panel includes representatives of businesses, planning authorities, environmental organisations, consumers, navigation, fishing and recreation bodies and central, regional and local government, all with key roles in putting the plan into action.

This public consultation ran from 22 December 2008 until 22 June 2009. Responses from the consultation will be used to further develop the River Basin Management Plan and its delivery. The first River Basin Management Plan will be published on 22 December 2009.

In the Northumbria River Basin District we actively promoted the consultation to interested parties in the following ways:

- Published the draft River Basin Management Plan online on the Environment Agency's website at www.environment-agency.gov.uk/wfd. This website address was actively promoted on all relevant literature and through stakeholder's websites.
- Published a public notice of consultation on 30 January 2009 and 6 February 2009 in The Journal.
- Held five sector specific workshops within the RBD and attended numerous meetings organised by others, in total speaking to more than 100 people.
- The Liaison Panel used their networks to circulate information to over 6000 people.
- Copies of the consultation document were made available in public libraries and a simple summary leaflet was produced.

¹ Further information on the Water Framework Directive is available at www.environment-agency.gov.uk/wfd
Environment Agency Consultation Response Document to the draft Northumbria River Basin Management Plan, September 2009

2 List of respondents

The table below shows which organisations/interest areas responded. Data protection prevents naming individuals who have not given permission for their details to be made public.

Sector	Organisation
Agriculture and rural land management	<ul style="list-style-type: none"> • BPEX (Agricultural and Horticultural Development Board) • Country Land and Business Association • LEAF and FWAG (Linking Environment and Farming and Farming and Wildlife Advisory Group) • The National Farmers Union (NFU), the Agricultural Industries Confederation (AIC), the Country Land and Business Association (CLA), and the Crop Protection Association (CPA) joint response
Angling and Conservation	<ul style="list-style-type: none"> • Angling Trust • Association of River Trusts • British Association for Shooting and Conservation • British Dragonfly Society • Buglife • Durham Bird Conservation • Durham Heritage Coast Partnership • Gloucester Angling Club • National Federation of Fishermen's Organisations • Northumberland Wildlife Trust • Riverfly Partnership • RSPB (Northern England Region) • Salmon and Trout Association • The National Trust (Yorkshire and North East Region) • The Northumberland Sea Fisheries Committee • The Tyne Anglers Alliance • Tyne Rivers Trust • Wear Rivers Trust • Wild Trout Trust • World Wildlife Fund • The Shellfish Association of Great Britain
Industry manufacturing and other business	<ul style="list-style-type: none"> • Association of Electricity Producers • British Hydropower Association • British Marine Aggregate Producers Association • British Marine Federation • Sea Fish Industry Authority • Chemical Industries Association Ltd • Confederation of British Industry • Environmental Industries Commission (EIC) • Institute of Chemical Engineers

	<ul style="list-style-type: none"> • Institution of Civil Engineers & PIANC (ICE) • Johnson Matthey • Non Ferrous Alliance • RWE Npower • The Coal Authority
Local and regional government	<ul style="list-style-type: none"> • Association of North East Councils • Forestry Commission • Highways Agency • Ministry of Defence • New Romney Town Council • Northumberland County Council • Northumberland National Park Authority • Natural England • One north East
Navigation	<ul style="list-style-type: none"> • British Ports Association & The united Kingdom Major Ports Group LTD (BPA & UKMPG) • British Waterways • Inland Waterways Advisory Council • Inland Waterways Association • Port of London Authority
Other	<ul style="list-style-type: none"> • Beyond Carbon • Blueprint for Water • Cranfield University • Ebchester Village Trust • Loweswater Care Project and Department of Sociology, Lancaster University • Northumbria Regional Flood Defence Committee (individual member) • One North East • Our Rivers • Ouseburn Catchment Steering Group
Recreation and Sports	<ul style="list-style-type: none"> • Canoe England • Royal Yachting Association
Water Industry	<ul style="list-style-type: none"> • British Water • Consumer Council for Water • Northumbrian Water • OFWAT • Water UK

3 Number and types of responses

Sector	Total
Agriculture and rural land management	4
Angling and conservation	21
Industry manufacturing and other business	15
Local and regional government	9
Navigation	5
Other/unknown	10
Public	10
Recreation & Sports	3
Water industry	6
Grand Total	83

Format	Total
Econsultation	24
Email	59
Our Rivers	1
Grand Total	83

A range of methods were used to enable organisations and individuals to give their comments on the draft River Basin Management Plan. These are described below:

Online system

An electronic questionnaire was available online alongside the main consultation document, annexes and other supporting information. We received 24 responses via the online system. These were from 14 organisations and nine individuals (some organisations made more than one response).

Responses via emails and letter

We received 59 emails (including one via the 'Our Rivers' campaign, set up by environmental non-governmental organisations in April 2009) and no letter responses to the consultation. Many of these responses were from representative organisations on behalf of their members. Some responses followed the set questions that were asked in the main consultation document and others chose to focus on the areas that were important to them.

Local workshops

During the consultation period, the Environment Agency and partners hosted five workshops to promote the consultation. The overarching aim for the events was to increase the understanding of the draft plan and to prompt constructive and informative responses to the consultation. To achieve this, each workshop aimed to help delegates do the following:

- Understand the Water Framework Directive (WFD), how the draft River Basin Management Plan will be used and how they could contribute to the consultation.
- Understand the actions in the draft River Basin Management Plan and the relevance to them and their business and / or for their customers and clients.
- Suggest ways in which they can contribute to the delivery of the River Basin Management Plan.

- Give feedback to the Environment Agency on how best to interact with them in the longer term.

The following table provides further information on the event topics, locations and number of attendees.

Date	Event	Location	Delegate Numbers
25-Feb-09	Common Ground event	Kirkley Hall (two sessions)	45
05-Mar-09	Business & Industry Event	Middlesbrough	20
18-Mar-09	Wildlife Recreation and Angling event	Beamish	23
20-Mar-09	Local Authorities Event	Newcastle	21

Other meetings

Environment Agency staff and Liaison Panel members attended a number of meetings to promote the consultation. Meetings either took the format of one to one discussions, presentations to small groups or discussions. The following table provides further details.

Date	Event
January	Tyne Rivers Trust River Watch Events
20-Jan-09	Ouseburn Catchment Steering Group
29-Jan-09	North East Assembly Development Board
27-Feb-09	One North East lunchtime seminar
March-09	North East Biodiversity Forum
March-09	North Berwickshire Coastal Group
March-09	Presentation to Northumberland National Park Authority Board
March-09	Tyne Rivers Trust River Watch Events
04-Mar-09	Tees Environment Industry Group
23-Apr-09	Joint meeting for Environment Agency committee members
30-Apr-09	Marine Biodiversity Forum
14-May-09	Natural England internal staff drop in session

4 Summary of responses and action we will take

Over 1200 responses were received to the 11 river basin plans for England and Wales. (There were 83 comments received on the draft plan for this River Basin.) The following pages set out our responses to the comments received. We have summarised the responses under topic areas and present the action we have taken or will take through the first plan cycle in relation to these topic areas.

The consultation asked the following questions.

This plan sets out objectives for the water environment for the next six years and beyond. To what extent do you agree with what we are planning to achieve?

1. Do you agree with the assessment of problems in water bodies? What would you change?
2. Do you agree with the proposed objectives? What would you change?
3. For some water bodies we have proposed objectives with deadlines after 2015 or a lower overall target. Do you agree with these changes? What would you change?

This plan sets out the actions required to meet the objectives. To what extent do you agree that the right actions have been identified (actions that are proportionate and feasible)?

4. We have followed a process to assess (appraise) these actions. This process is described in detail in Annex E. Do you agree with how we have done this?
5. What comments do you have on these actions? Are there any actions that have been missed, or any changes you'd propose?

There are some extra actions that could be put in place if there was more certainty they would be effective. These are listed under scenario C, and we would like to know if you can help to make these actions happen.

6. What comments on Scenario C actions do you have, including any additional information you can supply about specific actions?
7. What support can you offer, such as undertaking any actions or providing resources, to help deliver more for your environment?

Other comments you may have on this plan

8. Do you agree with our assessment of how climate change will affect the pressures on the water environment? What would you change?
9. What other comments do you have on this draft plan?

Some respondents used these questions to structure their response. However most did not. We refer to the question numbers where relevant in this section, but it was not possible to provide simple analysis as to the number of people who agreed/disagreed with each question.

Responses received

Overview of main national issues raised by stakeholders and our response

The Environment Agency is extremely pleased with the interest shown in the consultation on the draft River Basin Management Plan. We were impressed with the numbers of people who attended the various meetings and discussions we and co-deliverers organised during the consultation period. We appreciate the number of people who showed interest in the future of their water environment by taking the time to submit their responses to the consultation.

The draft River Basin Management Plan consultation set out a number of questions that we suggested to help those interested to focus on key issues. We believe it is evidence of the care that respondents have for their water environment that most chose to comment on the issues important to them, rather than the questions we had laid out.

Whilst many respondents told us what they would like to see changed in the draft plan, more comments were actually questions about how the planning process worked and how the details of the plan had been developed.

Whilst the Environment Agency sets out here the changes it has made as a result of the responses, we also wish to acknowledge the desire for more background information on what is not just the Environment Agency's plan but one belonging to society as a whole.

This may make the discussion of responses received lengthier than we might have envisaged. As a brief overview of the responses, and how they have influenced the plan, a brief summary of the main issues is as follows:

Readability and Accessibility of the Plans

The draft plan consultation was primarily focussed at the strategic level, looking for comments on the overall improvement of water bodies. Many respondents wanted to comment in detail on proposals for individual water bodies, of which there could be more than a thousand in an individual river basin district.

The plans have been substantially modified to improve their readability, eliminating much replication but maintaining a level of clarity on the expectation from delivery sectors.

The focus of activity will turn to the water body level when delivery of the plan starts. When looking at a single water body, it will be possible to present information, both map and data, in a more expansive way than will ever be practicable in a River Basin Management Plan covering many hundreds of water bodies.

From December 2009 there will be further improvement to local map information available on the What's in Your Back Yard (WIYBY) section of the Environment Agency Website.

Clearer information on individual water bodies is now presented in the main water body annex (Annex B) with National Grid Referencing to give another way of navigating around the document

Ambition of environmental outcomes

Release of the draft plan for consultation was accompanied by a letter signed jointly by the Department for Environment, Food and Rural Affairs (Defra), the Welsh Assembly Government and the Environment Agency that was open about the desire to increase ambition and asked other co-deliverers to come forward with their offers. Whilst useful local initiatives have been identified, unfortunately there have not been any additional measures sufficiently large enough to raise the status class of any individual water body.

The Environment Agency has worked hard to ensure we are capturing the full potential of available measures in the plan. This has involved harnessing a great deal of local knowledge to consider the potential for improvement at water body level. Defra has made available an additional £10M in 2009/10 that is being used to improve environmental outcomes, prevent deterioration and lay the foundations for future improvement.

Defra/Welsh Assembly Government have indicated that a number of additional measures are likely to become available during the first river basin planning cycle as long as the appropriate legislation can be secured. These include:

- Hydromorphology - Defra is aiming to provide the Environment Agency with powers to carry out work to ensure that the physical characteristics of water bodies are such that they are capable of supporting the target ecological status. This will include a duty for flood and coastal erosion risk management authorities to exercise their functions so as to secure Water Framework Directive requirements. Both aspects have been consulted on in the Floods and Water Management Bill consultation and were supported by an overwhelming majority of respondents who commented on the proposals. Amendments will also be made to the Water Resources Act to enable Water Protection Zones to be used to address pressures on hydromorphological conditions such as habitat destruction and remobilisation of sediment, such as might be caused by inappropriate dredging.
- Water Protection Zones (WPZs) - Where voluntary measures do not achieve the required improvement in water quality under the Water Framework Directive, the intention is to use regulation in the form of WPZs. WPZs will be used to tackle both agricultural and non-agricultural diffuse pollution. The Environment Agency is currently developing "proof of concept" WPZ candidate sites. These may or may not develop into full WPZs, depending on the level of evidence gathered. Defra is running a WPZ sectoral working group with key stakeholders (NFU, eNGOs, ports and navigation, local authorities, small businesses and water companies). The group will discuss the statutory guidance that is being developed by Defra to the Environment Agency, and the designation process of WPZs, evidence required, local information, consultation period and Impact Assessment. The number of WPZs that will be used will be based on an assessment of the impact voluntary measures have had, and the evidence required to justify the use of a WPZ.
- Sustainable Drainage Systems - A proposal in the Floods and Water Management Bill consultation requires that all new developments and

redevelopments (both domestic and commercial) include sustainable drainage systems (SUDS) for the management of surface water. SUDS mimic natural drainage and help manage surface water flood risk, as well as improving water quality, by naturally filtering water, and providing amenity. Developers will seek approval for drainage systems from a SUDS approving body, to ensure that they meet a set of National Standards before a connection to the surface water or combined sewer can be given. SUDS built to National Standards will then be adopted by the SUDS approving body and maintained on an ongoing basis to ensure they continue to operate effectively. If the bill is approved, SUDS legislation is expected to come into force in 2011.

- **Misconnections** - Misconnections occur when a drainage pipe is connected to the wrong type of sewer, for example when a foul drain is connected to a surface water sewer, or a surface water drain connected to a foul sewer. Misconnections can overload sewerage systems and cause pollution. Defra estimate that 300,000 households are currently misconnected, this will rise to 500,000 by 2015. Currently only local authorities can remedy misconnections, water companies must liaise with local authorities to rectify misconnections nationally that they have identified. The Floods and Water Management Bill consultation proposed to give sewerage companies similar powers to local authorities, making it cheaper and easier to fix misconnections. If the bill is approved, it is expected that the misconnections clauses will be introduced in 2011.
- **Phosphates in Domestic Laundry Detergents** - Defra are proposing to ban the sale of domestic laundry detergents containing more than 0.4% of phosphates. Phosphates cause eutrophication, and a ban will be an important step in improving water quality by reducing phosphate pollution at source, supporting the polluter pays principle. A consultation on a ban received widespread support from industry as it provides a level playing field. If a ban is introduced, Defra and Welsh Assembly Government are looking at a commencement date of 2015, providing industry with an adequate period of time in which to adapt their processes.

It has not been possible to evaluate the impact of these measures at water body level, but the Environment Agency has a goal of achieving an additional two percent of surface waters at Good Ecological Status (GES) by 2015, to reflect in part the availability of these measures.

Implementation of the River Basin Management Plan will be led by the Environment Agency at the catchment level. A variety of methods for working with local co-deliverers and stakeholders will be explored, but it is a confident expectation that by working together with all the co-deliverers and sectors involved and viewing the catchment as a whole ultimately the ambition that is contained in the plan as of autumn 2009 is likely to be exceeded.

High proportion of water industry actions

River Basin Management Plans are not restricted to measures purely driven by the new requirements of the WFD. Pulling together the total effort on water environment improvement over the next six years, they also incorporate the substantial improvements arising from the requirements of pre-existing Directives. Earlier Directives were very much aimed at dealing with point source discharges, which are predominantly the responsibility of water companies. One of the main pressures needing attention, to move more water bodies towards achieving Good Ecological Status (GES), is phosphate and again water company discharges are an important

source. This combination of work needed to fulfil commitments to older Directives, and phosphate releases from seWelsh Assembly Government systems explains the high contribution required from water companies in the first cycle.

There are of course other sources of pollutants. Phosphate and agricultural chemicals are particularly important in England. Funded by Defra, the Environment Agency, working alongside Natural England, has a major programme of investment in advice to the farming community on sound, sustainable farming techniques through the England Catchment Sensitive Farming Delivery Initiative. Given the necessary time for improvements to have an impact on environment quality, this will eventually help to reduce the impact of farming activities. If, in certain locations, after voluntary initiatives have been attempted and insufficient progress towards Good Ecological Status (GES) and Good Ecological Potential (GEP) is made, firmer regulatory mechanisms such as Water Protection Zones will be available to enforce the required progress, and once piloting of mechanisms has proved their effectiveness, the Environment Agency is committed to their use.

With these introductory remarks we now examine the responses in more detail.

Note – we have laid out the following analysis thus:

- **Summary of comments received in consultation responses on a particular subject**

Our response to these comments, what we have changed, explanation of actions etc...

4.1 Principles and general direction

There was general support for the aims of the River Basin Management Plan and Water Framework Directive, and what we set out to achieve.

There was recognition for the scale of the job in putting the draft plan together, and praise for the Environment Agency's efforts within the river basin district to engage stakeholders.

4.2 Presentation and structure

4.2.1 Readability of the plan

- **Consultation Response:** The main document was broadly welcomed but there was concern over the accessibility of the annexes and technical language used. It was felt that whilst there was necessarily a lot of detail there, it was not easy to find the most relevant information. Some respondents requested a briefer, more manageable plan. Others requested more information.
- **Consultation Response:** Respondents asked for greater use of diagrams and tables to explain the statistics in the main document. Particular information was requested on principal causes of failure to achieve good status and key measures proposed to address them. The need to show improvements that will happen to particular elements within 'good status' was also identified.

The draft River Basin Management Plan set out a strategic approach to environmental improvement at the river basin district scale and presented information at the more

detailed water body level. This was a difficult task. The draft plan consultation was primarily focussed at the strategic level, looking for comments on the overall improvement of water bodies. Many respondents wanted to comment in detail on proposals for individual water bodies, of which there could be more than a thousand in an individual river basin district.

We have substantially modified the plans to improve their readability, eliminating much replication but maintaining clarity about the expectation from all sectors to play their part in delivering the actions. We have shown key improvements more clearly and more prominently in the document.

In response to the consultation we have expanded the description of issues and outlined the solutions at a catchment scale. This explains what will be achieved, what the issues are, their causes and sources, the practicable remedies and the challenges remaining for subsequent cycles.

Where appropriate information will be provided separately from the plan in more 'user-friendly' leaflets, update of WIYBY, water body summary sheets, online presentation with case studies, measures and objectives in spreadsheets for usability.

- **Consultation Response:** Headline messages were requested in the main document text regarding costs and benefits.
- **Consultation Response:** Respondents often identified other plans and processes that could assist with improving waters, and asked for greater clarity on the relationship with river basin management planning.

We have included a short section within the main document titled 'costs and benefits of taking action'. A more detailed analysis is contained in the Final Impact Assessment made available alongside the plan.

We have created a new annex (Annex J) that identifies where and how relevant policies, planning processes, management processes, programmes, initiatives and methods are being aligned to deliver more sustainable outcomes for the water environment. Some of the main messages from this annex have also been incorporated into the main document.

4.2.2 Accessibility of information at the water body level

- **Consultation Response:** Several respondents commented on the accessibility of information and data, especially at the water body level.
- **Consultation Response:** Some felt that the 'What's In Your Backyard' (WIYBY) tool used to help respondents access water body level information was difficult to use and did not hold the same data as Annex B for each water body.
- **Consultation Response:** Comments were received regarding the maps in Annex B. It was felt these were not clear enough to be able to identify some water bodies with certainty.

The attempt to show so much background information in the plan, which is required by the Water Framework Directive itself, may well have led to confusion for the reader. Detailed water body information was presented in a variety of annexes, and the lack of correlation between the annexes is a frequent comment from respondents. We have now provided clearer information in the main water body annex (Annex B), with National Grid Referencing to allow another way of navigating through the Annex B

tables. When the plans are published in December 2009 we will have changed the order in which the water body tables appear in Annex B so that as far as is possible, adjacent water bodies appear next to each other. We have now provided better linkage between annexes and more information on the reasons for decisions, particularly choice of alternative objectives as set out in a completely revised Annex E.

The ability to link information in the plan and its annexes to map based information has been a continuing dialogue throughout production and consultation on the draft plan. We have made digital geo-spatial information more freely available to co-deliverers than it was at the start of the consultation. Interactive map information for the general public will continue to be based on the 'What's in your backyard' (WIYBY) section of the Environment Agency's website. We have recognised difficulties in interpretation of water body information in this system because of the presentation of background map information. We will improve the display of River Basin Management information when WIYBY is updated in December 2009.

When delivery of the plan starts, the focus of activity will turn to the water body level. When looking at a single water body, it will be possible to present information, both map and data, in a more expansive way than will ever be practicable in a River Basin Management Plan covering many hundreds of water bodies.

For those experienced in data manipulation, more detailed spreadsheet information will be available to download from the Environment Agency website, following publication of the plan in December 2009. Also in December, with hyperlinks throughout the online published plans, ease of navigation will be improved.

4.3 Objectives and ambition

4.3.1 Ambition

- **Consultation Response:** Some respondents agreed with and supported the proposed objectives, and a staged approach to 2027.
- **Consultation Response:** Others felt that the level of progress by 2015 was too low to allow confidence that the 2027 targets would be met. They felt that the 2015 target was unambitious and were concerned about how the second and third cycle targets would be met.
- **Consultation Response:** Some respondents thought a target should be set for some water bodies to reach high ecological status. Concern was expressed by others that the objectives were being 'gold plated'.

Release of the draft plan for consultation was accompanied by a letter signed jointly by Defra, Welsh Assembly Government and the Environment Agency that was open about the desire to increase ambition and asked other co-deliverers to come forward with their offers. Whilst useful local initiatives have been identified, the consultation did not reveal any additional measures significant enough to improve ambition at the water body, catchment, district or national scale.

The Environment Agency has worked hard to ensure we capture the full potential of available measures in the plan. This has harnessed a great deal of local knowledge, to find improvements at water body level.

Further work during the 6 month consultation on the draft River Basin Management Plan has secured commitment from Government or third parties to deliver:

- Design and development of Water Protection Zones in England;

- projects to tackle invasive non-native species;
- promotion of best practice for use, disposal and treatment of pesticides;
- an enhanced programme of pollution prevention campaigns and enforcement action;
- and an extended programme to implement best practice and remediation at abandoned metal mines is currently underway funded by Defra and Welsh Assembly Government.

Through work with Natural England and the Countryside Council for Wales, measures have now been identified and included in the plan to ensure objectives for Natura 2000 Protected Areas are met for water dependent Special Areas of Conservation and Special Protection Areas designated under the Habitats Directive and Birds Directive.

In cooperation with the Drinking Water Inspectorate and water companies, measures and further investigations are now included in the plan for Drinking Water Protected Areas.

Defra has made available an additional £10M in 2009/10 which is being focused on improving environmental outcomes in England

Defra and the Welsh Assembly Government, in partnership with the Environment Agency, will continue to develop and identify opportunities for appropriate additional measures to be implemented after the River Basin Management Plan have been submitted and approved.

The Water Framework Directive sets an objective of aiming to achieve at least 'good status' in all water bodies by 2015 or, where justified, by 2021 or 2027. This is the target that we all should be working towards.

The first cycle, and its programme of measures, is based on existing work programmes and investigations. As the plans develop and actions begin to be implemented a clearer vision towards 2027 can be developed.

Implementation of the plan will be led by the Environment Agency from the catchment level. A variety of methods for working with local co-deliverers and stakeholders will be explored. By working together, it is hoped that the ambition in the plan will be exceeded.

The information collected during the preparation of the plan, supplemented by the results of investigations over the next few years, will be an excellent foundation for planning and delivering further improvements in future cycles.

Annex E of the plan contains information on additional measures that be possible to put in place during the first cycle, or in cycles 2 and 3. Future plans will need to address those issues where only limited progress is currently possible. This will mean a greater emphasis on addressing the problems of diffuse urban and agricultural pollution, and restoring the physical habitat of the water environment.

Given the scale of improvement required, and the long standing complex pressures on the water environment, for some water bodies it may not be possible to achieve good status by 2027. We are not in a position to identify these particular water bodies yet, but in future cycles greater use of the Water Framework Directive's flexibility to set less stringent objectives may be needed.

- **Consultation Response:** Support was given for the inclusion of WFD objectives in the government PSA targets and clarification was requested on the progress of this.

The current natural environment Public Service Agreement (PSA 28), which runs until the end of March 2011, contains a water quality headline indicator. This refers to year on year improvement in the biological quality and a year on year improvement in the trend of chemical quality of rivers as reported under the Environment Agency's General Quality Assessment (GQA). It also contains a proxy indicator with regard to the number of water bodies achieving Good Ecological Status. This will be reviewed as a result of the 2009 classification data. Discussions regarding the potential future PSA indicators under the next spending review period and the replacement of the GQA assessment as the headline indicator have started but it is not yet possible to confirm a new target measure.

- **Consultation Response:** Objectives have not been set for coastal diffuse pollution in the Northumbria region and coastal issues have not been given the attention afforded to other areas within the RBD

Objectives for bathing waters are included as a local measure in the plan and the importance of coastal regions will be more fully recognised.

4.3.2 Protected area objectives and measures

- **Consultation Response:** Respondents were concerned that some protected area (Natura 2000 and Drinking Water Protected Areas) objectives and measures were not yet fully integrated into the plan.

A clear description of the interrelationship between Natura 2000 "Favourable Conservation Status" objectives and Water Framework Directive objectives is now included in Annexes B and D. Measures that have been developed by Natural England and the Countryside Council for Wales, the delivery of which will be overseen by them, are now given in Annexes C and D.

During the consultation period, the Environment Agency has carried out a risk assessment of Drinking Water Protected Areas (DrWPAs). The risk assessment has been informed by water company data, including those provided in Drinking Water Inspectorate returns. Where there is sufficient confidence that deterioration may take place, measures have been proposed and are now given in Annexes C and D. Where a risk has been identified but confidence is low, the Environment Agency will carry out further monitoring and investigation, and propose measures if the risk of deterioration can be confirmed.

4.3.3 Decisions for alternative objectives

- **Consultation Response:** Some respondents asked for better justification of extensions to the 2015 deadline. They felt the plan lacked transparency on why extensions (alternative objectives) had been applied.

At the Environment Agency we accept that the draft River Basin Management Plan provided a lack of clarity and transparency on the decisions made in setting alternative objectives for water bodies.

For the first River Basin Management Plan we have:

- set out more clearly the process for setting alternative objectives in Annex E;
- provided more information on the reason for failure that has led to the setting of an alternative objective;
- provided more information on what type of action results from the setting of the alternative objective e.g. investigation to identify appropriate measures for future cycles;
- provided more information on the types of measures that may be used to address the problem in future;
- provided a clear link between each water body element not at good by 2015 in the Annex B table with the decision making process, reasons for failure, types of investigation and potential future measure described in Annex E;
- provided information on the appraisal of and justification for alternative objectives set for Surface Water Drinking Water Protected Areas and Natura 2000 Protected Areas in Annex D.

4.4 Assessment of Issues and Pressures

The main comments made by respondents on the assessment of issues and pressures included the range of pressures covered, the standards used, uncertainty of source apportionment, and access to data and information.

- **Consultation Response:** There were a range of views regarding the assessment of problems in water bodies. Some respondents agreed with the assessment, or thought that it was broadly right. Others disagreed, as the draft plan did not contain sufficient information about the water bodies they were interested in, or they had a different view of the problems in water bodies.
- **Consultation Response:** Some of the issues highlighted by respondents include: road and urban run-off, hazardous substances, river morphology (including dredging), see treatment works and combined sewer outfalls, low flow, hydropower, drainage of wetlands, flooding, soils, excess nutrients, sediment, microbiology and future development pressure.

In developing the draft plan the Environment Agency concentrated on those issues highlighted by Liaison Panels and the results from consultation on Significant Water Management Issues. These were the pressures considered of greatest significance at river basin district level, matching the strategic nature of the plan. We accept that in individual water bodies, there are likely to be pressures and issues which are not reflected across the whole of a river basin district but nevertheless are of local significance.

Those interested can see further information about particular water bodies or on risk assessments not presented in the plan, on 'What's in your backyard' on the Environment Agency's website. This contains all the risk assessment results for all water bodies. Detailed method statements for the assessments are also available on the Environment Agency's website at <http://www.environment-agency.gov.uk/research/planning/33238.aspx>.

- **Consultation Response:** There were some comments questioning the standards used in the risk assessments, and whether they were appropriate to assess the risk of failing good status.

The standards used include those that will be directed in Defra's "Directions to the Environment Agency on Classification". They are set out and justified in the method

statements for each assessment. The method statements themselves were developed using guidance provided by the United Kingdom Technical Advisory Group (UKTAG), a group of technical experts drawn from environmental regulators across the UK. It is also worth noting that the risk assessments by themselves do not drive measures in water bodies, but provide the basis for highlighting potential problems and identifying sources. We will be working through the first and future cycles to improve the assessments using the responses gathered during the consultation, as well as other data.

- **Consultation Response:** There were many comments referring to the uncertainty over the causes of problems and the subsequent uncertainty over appropriate actions to reduce the risk or impact to the water body.

There is still substantial work to be done over the first cycle to improve the characterisation of sources and apportionment of pressures and their effect on water bodies. In Annex B it can be seen that there are a large number of water bodies where the reason for failure to achieve Good Ecological Status or Potential is uncertain. We have proposed a series of investigations to improve the confidence of the assessment of status. Several consultation responses have indicated specific areas of concern regarding source apportionment. Work is already underway to start to deal with some of these concerns.

For example:

For **abstraction issues**, we are undertaking investigations to determine the ecological significance of reduced flows where we are uncertain that there is an impact. Without these investigations measures to reduce abstraction could be premature and represent a high risk of being disproportionately expensive.

To this end we will:

- review both the derivation and application of the environmental flow indicators for all water bodies in England & Wales, with the aim of improving them to inform the revisions to the River Basin Management Plan in 2015.
- undertake site specific investigations to determine both the size and biological benefits of increased flows and to justify the need for measures to reduce the impacts of abstraction.

All these investigations will be included within the Restoring Sustainable Abstraction programme with the WFD as a driver.

On **water quality** issues, we will be working to reduce the uncertainty that remains regarding:

- status assessments using new classification tools;
- whether water bodies are adversely impacted, including adequate biological evidence for sites failing nutrient standards;
- the predicted outcome of actions to address protected area requirements;
- the relative importance of different sources of pollution;
- how much technology can be developed to enable greater water quality improvements;
- the cost-effectiveness and benefit of measures to tackle diffuse water pollution;
- the long-term impacts of climate change.

And we are:

- developing the use of national water quality predictive models;

- working with United Kingdom Water Industry Research (UKWIR) on a source apportionment project to develop methodology for targeting measures;
- working with a range of industries, including the water industry to better quantify releases of chemicals arising from their activities;
- undertaking further investigations into phosphate in groundwater, including the development of robust Source-Pathway-Receptor conceptual models;
- developing and refining the conceptual models for groundwater bodies.

On **land quality** issues, we are:

- Developing a sediment management framework to put in place appropriate sediment management plan for particular catchments/sub-catchments. A key part of this will be to develop a 'weight of evidence' that sediment is having an impact on the environment. This will draw a variety of evidence together, not just water quality sample data, to justify action to tackle sediment problems, e.g. biological indices and risk assessment data.
- Managing trial catchments for improving the evidence base and testing the effectiveness of mitigation measures for hydromorphology have been identified. These trial catchments are identified under the programme of measures in the River Basin Management Plan.
- Undertaking improvements in the knowledge and evidence base. For example, improving our understanding of the ecological response to nutrients including the relative importance of soluble and sediment associated phosphorus; the implications of this for source control and improving the effectiveness and targeting of measures.

4.5 Monitoring

- **Consultation Response:** Some respondents felt there was a lack of monitoring on a large number of water bodies and queried why so many were 'unassessed' or 'not requiring assessment'.

In the draft plan the majority of water bodies were given a status classification. Some of the mitigation measures assessments for heavily modified water bodies were not completed on time, so the overall ecological potential was reported as 'not yet assessed' despite having had ecological assessment. In the first River Basin Management Plan all water bodies will have an assessment of status.

The label of 'not requiring assessment' is linked to chemical status rather than ecological status. An ecological assessment is required for all water bodies, but a chemical status assessment is only provided if a known priority substance is being discharged in significant quantities. For example, a water body receiving treated effluent from a town's sewage treatment works will have a chemical status assessment but water bodies in the upper catchment with no significant input of priority substances do not need to have a chemical status assessment.

- **Consultation Response:** Comments were made on the lack of information on estuaries, coastal waters and canals.

The Environment Agency has developed new monitoring programmes for all types of waters, but there is a wide variation in the historic data we hold from previous programmes. As would be expected, there is a comprehensive archive of chemical monitoring data for inland surface waters, particularly below major point source

discharges. At the other extreme, regular monitoring for some biological elements in estuaries and coastal waters only commenced in 2007. Practical considerations mean that there will not be data for all these water bodies until 2010. We have reviewed and realigned our monitoring programmes and with the information others may be able to offer, we will improve status assessments during the first cycle.

- **Consultation Response:** Clarification was needed regarding what data ranges were used for monitoring.

For many classifications, the data we use to make the assessment is very recent. For example, the monitoring programme for physico-chemistry involves taking samples from every monitoring point twelve times a year, every year. We then use the monthly samples for three continuous years to make assessments – so the physico-chemistry dataset is based on 36 samples from 2006-2008 data. Our survey frequencies for biological monitoring programmes vary from one-in-three to one-in-six years, depending on the quality element we are interested in. We use a cut-off date beyond which the data is regarded as no longer being representative of the current environment. In the plan we are using any suitable data from 2003 to 2008 (inclusive).

- **Consultation Response:** A few respondents asked the question about whether the Environment Agency will accept other organisations' data to complement the monitoring programme.

The Environment Agency welcomes any evidence about the health of the water environment. In most cases this extra information will be most useful when investigating local problems and possibly in designing new monitoring programmes.

So that status assessments are on a level playing field across the UK and the EU, most of the classification techniques that the Environment Agency uses are very prescriptive. They require measurements to be conducted in a certain way and data to be held in a specific format. Unless other organisations use the same assessment techniques and apply the same quality assurance measures the data will not be able to be used in status classifications.

- **Consultation Response:** Information was requested on what the Environment Agency is doing to increase certainty.

The Environment Agency is carrying out further investigations to determine the causes and sources of the failure to achieve good status. This work is referred to in the plan as Investigations. There are a wide variety of possible investigations. Some may simply involve one of our local environment officers walking the river bank to identify the source of a visible contaminant. Others require more sampling. We can use sophisticated modelling and assessment techniques to establish the reason for water quality problems. Data provided by other organisations can also contribute to our understanding of problems in water bodies. In the plan Annex E states where we need to carry out investigations explains, in general terms, the nature of the investigation.

We are currently in the process of designing our next environmental monitoring programme, which will be implemented in 2010 and run until 2012. We are focussing on collecting biological data where we have reason to believe that good ecological status might be compromised, to give us a better assessment of the extent to which the wildlife living in our water bodies is damaged.

4.6 Classification

4.6.1 Methodology

- **Consultation Response:** The classification methodology was felt to be very complex and difficult to evaluate, and it was not clear how it accounts for seasonal variations. There were requests for detailed data underpinning the classification and for consultation on any changes to the classification.
- **Consultation Response:** Concerns were also raised about some of the groupings used, especially where the monitored water body is perceived to be of a different status to its grouped water bodies

New method statements explaining the approach to classification system have been published on the UKTAG website. The website sets out the method behind each classification tool at various levels of detail. Summaries of the methods can be found here, and more detailed reports for the biological tools are available.

The Environment Agency's monitoring and classification systems are designed to remove the effects of seasonal variations from results. For example:

- water quality sampling is carried out on a monthly basis and the data from three consecutive years is used to classify the water body;
- for some types of biological assessments data from spring and autumn surveys is used and an average taken.

Our [classification method statement](#) has more information about the use of data in classifications.

(http://www.environment-agency.gov.uk/static/documents/Research/Classification_Method_Statement_FINAL.pdf)

All the classifications have been reviewed and remodelled leading to a higher confidence level for the plan. This has also included an initial review of groupings; further work will be carried out during the second cycle on groupings.

Data used to underpin classification results can be requested from your local Environment Agency office, or through our National Customer Contact Centre on 08708 506 506, or email enquiries@environment-agency.gov.uk

- **Consultation Response:** Several respondents raised questions over how the water bodies were delineated.

The WFD water bodies were originally identified, delineated and reported to Europe in 2005. The Environment Agency followed specific rules set out by the Common Implementation Strategy and UKTAG Guidance produced for all water categories. In March 2008 we received a Direction from the Secretary of State for England to add in a number of smaller water bodies of biodiversity significance and we made additions to our river network, lakes, transitional waters and coasts. We are aware that there may be some anomalies that still exist in our water bodies and we will be reviewing the water body network for the second round of river basin planning.

- **Consultation Response:** Some respondents disagreed with the classifications that were presented and asked whether they could be changed.

The way in which water bodies are classified brings in a new way of thinking about the water environment. In some cases there may be a very localised problem within a water body that will not result in the whole water body being downgraded, and in other cases a water body previously judged as healthy may have been downgraded due to the results of new biological assessments. The Environment Agency welcomes information to identify gaps in our knowledge and to help us design future monitoring programmes. We have updated the classifications recognising the comments made during the consultation and the new assessments will be reported in the River Basin Management Plan. These assessments make use of results from surveys conducted in 2008 and are based on modification to some classification assessment techniques.

We aim to control as many sources of error as is possible in the classifications. Precision and accuracy of laboratory instrumentation, variations in survey techniques, location and time of survey, frequency of sampling and calibration of our models are all potential sources of error. Because some degree of error always remains we have decided to report the level of certainty we have in the classifications. Annex B of both the draft and first plans shows how certain we are that a water body is failing to achieve good status. Future monitoring will be targeted at those water bodies where we are currently uncertain about the true status.

- **Consultation Response:** Some respondents had issues with the standards used – whether the phosphate standard was too high, or too low; and whether the nitrate standard for drinking water was correct, for example.

We have produced classifications and used environmental standards in line with the proposed Ministerial Directions on environmental standards and classification of water bodies. These were subject to a separate consultation (consultation on Directions to the Environment Agency on Classification of Water Bodies October to December 2008). These in turn were based on UKTAG guidance documents, themselves subject to consultation. There were consultations on two phases of environmental standards and one on classification.

- **Consultation response** Many respondents raised concern that the one out, all out principle will lead to the quality of water bodies being understated.

The one out, all out principle is the main driver for improvements to water bodies and should highlight water bodies that are failing for a specific reason. This will allow measures to be targeted in appropriate locations and applied in a timely manner.

4.6.2 Fish classifications

- **Consultation Response:** There have been a number of comments about the accuracy of the fisheries classification in the draft plan, even to the extent of suggesting that the system needed to be completely redesigned.

The Fisheries Classification Scheme (FCS2) is explained in the method statements. It assesses the biological status of rivers on the basis of the abundance of 23 fish species, as determined by our survey data.

FCS2 uses fish to classify based on the Ecological Quality Ratio (EQR), a measure of the observed fish community in relation to the expected fish community in a similar river type under reference conditions (without pressures). This EQR is then converted into one of the five status classes required by the Water Framework Directive (WFD).

The expectation for the number of fish at a site cannot be expressed as a single number, but is expressed as a probability distribution of possible values. This distribution is described in terms of the prevalence (the probability that the species will be present) and average abundance (at sites where the species is present).

The FCS2 model is then used to predict what fish community would be expected for a given river type (defined by the environmental variables and geographic location) under reference conditions.

For each species, the observed number of fish is compared to the model. The difference between observed and expected status is expressed as the probability (0 – 1) of getting an equal or lower numbers of fish at a comparable reference site. Some species are naturally scarce or patchily distributed even under reference conditions, and will provide a less sensitive indication of ecological quality.

The probabilities for each individual species are converted to a combined probability for all species at the survey site. The outcome is called an Ecological Quality Ratio (EQR), which is assigned to one of 5 ecological quality classes.

The results of the rivers fish classification for the first River Basin Management Plan are often markedly different to those presented in the draft River Basin Management Plan. The reason for these differences is due to changes in the FCS2 model and in the data used to produce the classification listed below.

- Additional environmental and pressure variables have been added to the model;
- Sites upstream of natural barriers to fish migration have been identified and predicted fish communities adjusted accordingly;
- Class boundaries for determining the status of water bodies have been modified to bring them in line with the normative definitions of status;
- Survey data from 2003 to 2008 have been used to generate the classification;
- Inappropriate survey sites and data have been removed from the classification results.

4.6.3 Artificial and Heavily Modified Water Body Designation and Classifications

- **Consultation Response:** There were several comments on the lack of transparency around identification of Artificial and Heavily Modified Water Bodies and their subsequent classification.
- **Consultation Response:** Respondents asked for greater clarity between Good Ecological Status and Good Ecological Potential.

Artificial and Heavily Modified waters (AWB/HMWB) have been identified and designated using nationally available datasets. These datasets provide information on both direct modifications to water bodies (e.g. presence of modifications for flood protection purposes using the national flood and coastal defence database, NFCDD) and on wider catchment scale pressures (e.g. areas of intense urbanisation derived from wider land use datasets).

The designation process detailed in Annex I looked at modifications that affect the whole water body. Considering the size and number of water bodies and available

data it is not currently possible to provide detail of individual modifications in every water body.

Assessing the status of a water body was difficult particularly from the hydromorphological perspective. Relevant data is owned and collated by a number of external organisations. These external organisations differ in their ability to make relevant hydromorphological pressure data available for consultation. The Environment Agency has started a project to develop a centralised and fully supported database for all morphological data.

For the plan, all designations and classifications have been reviewed by local Environment Agency staff familiar with each water body and where possible, they have been discussed with other local bodies such as Internal Drainage Boards.

Good Ecological Status is an evaluation of the status of waters as indicated by the condition of a number of 'quality elements' (none of which can be more than slightly altered from their reference, or natural, conditions). In contrast to assessment of the quality of the water, Good Ecological Potential is assessed by considering whether a series of mitigation measures that minimise the impact of the use of the water body are in place.

We are working with stakeholders to improve the understanding of the appropriateness of mitigations measures, and will undertake trials to assess their effectiveness. This will enable us to focus on implementing those measures where we have high confidence that they will deliver improvements to biological quality elements to bring our assessment of Good Ecological Status and Good Ecological Potential closer together.

In response to requests from some respondents, the Environment Agency is currently developing an easy guide for the HMWB designation and classification processes, similar to the classification method statement which will be available shortly.

- **Consultation Response** A few respondents raised concerns over ownership of water bodies and responsibility for consequent measures where they were no longer in use for the purpose they were historically modified for.

It is not always possible to identify who should take action to achieve the objectives in relation to morphology. This is especially difficult where the structures were constructed legally under a different statutory regime, perhaps even under requirements of Government; and/or where the ownership or use of the structure has changed over time. As many past damaging activities were delivered and funded through legally compliant schemes in place at the time, and as it is difficult to identify responsible parties, it is unlikely that reliance on the 'polluter pays' principle will deliver the extent of restoration works necessary. The Environment Agency is currently working with Defra to identify possible solutions to this issue.

- **Consultation Response:** Concerns were raised regarding specific thresholds used as part of the designation process being applied to future management of water bodies and potential impacts on fish stock cultivation.

A 15% cultivation spatial cover rule was used as part of the designation process. It is not intended to form a threshold for limiting fishery activity in non-designated water bodies. If fishery activity expands in a water body to an extent where deterioration in status might occur, then the increased activity would be subject to WFD Article 4(7) tests on deterioration in order to ensure directive compliance.

- **Consultation Response:** Respondents requested that actions regarding easement of fish passage need also to be included for Heavily Modified Water bodies.

Where water bodies have been designated as AWB/HMWB for one of the following uses: water storage and supply, inland navigation, flood risk management, land drainage, urbanisation or coastal flood protection and had an impassable structure in place then the following mitigation measure: 'Structures or other mechanisms in place and managed to enable fish to access waters upstream and downstream of the impounding works' would be required for the water body to reach Good Ecological Potential.

4.7 Actions

- **Consultation Response:** Many respondents welcomed the range of actions in the plan and the emphasis on local detail and projects.
- **Consultation Response:** There were many comments, particularly from those connected to the water industry on the predominance of actions to be funded by water companies and questions as to whether this complied with the Polluter Pays Principle.

The River Basin Management Plan draws together the total effort on water environment improvement over the next six years and incorporates the substantial improvements arising from the requirements of pre-existing Directives. Earlier Directives were very much aimed at dealing with point source discharges, which are predominantly the responsibility of water companies.

One of the main classification elements needing attention, to move towards more water bodies at Good Ecological Status, is phosphate and water company discharges are an important source along with losses from agriculture. This combination of work needed to fulfil commitments from older Directives, and phosphate releases from sewage systems explains the high contribution required from water companies in the first cycle.

Nutrient and chemical losses from agriculture are particularly important in England. Funded by Defra, the Environment Agency, working alongside Natural England, has a major programme of investment in advice to the farming community on sound, sustainable farming techniques. Given the necessary time for changes in techniques to have an impact on environment quality, this will help to reduce the impact of farming activities on water bodies. If, in certain locations insufficient progress towards Good Ecological Status is made, firmer regulatory mechanisms such as Water Protection Zones will be available to enforce the required progress.

The section below on Impact Assessment (4.11) covers economic issues and the Water Industry.

4.7.1 Scenarios

- **Consultation Response:** Some respondents found the scenarios confusing, and were not sure how Scenario C actions would be included in the first plan. Others suggested changes to the scenarios for some actions.

The first volume of Ministerial River Basin Planning Guidance required the Environment Agency to include in each draft plan a “do nothing” scenario setting out the baseline if

no action was taken for Water Framework Directive purposes and a small number of other scenarios describing alternative approaches. In developing the first scenario, it became apparent that a title of “do nothing” gave a very inaccurate impression of investment, particularly from the water industry, that was required to achieve compliance with existing Directives. We therefore decided to simply name this “Scenario A”. In line with the guidance, two further scenarios, “B” and “C”, were developed.

Scenario A included actions that were already planned to achieve improvements to the water environment. They were based on existing or secured measures, such as water company schemes included in their current investment programmes, and future planned water company measures as required by the Urban Waste Water Treatment Directive and the Habitats Directive plus national level actions such as Catchment Sensitive Farming and pollution prevention campaigns. This scenario included a range of actions to ensure no deterioration, a challenge in itself.

Scenario B included all the measures in Scenario A plus additional measures driven by the WFD alone. These additional measures included those at a national level, those with a national framework, but with regional targeting such as the extension to the Catchment Sensitive Farming work and those at river basin district level such as measures to work with local authorities to ensure no deterioration in status. These were justified in the draft River Basin Management Plan on cost/benefit grounds and largely included measures where we are confident there is a delivery mechanism or a potential funding source.

Scenario C included Scenario A and Scenario B and measures likely to be cost-effective and proportionate, but where we were not as certain as to their effectiveness or likely benefit or there was no certainty about funding.

The plan itself does not have scenarios. As required by Ministerial Guidance, the plan sets out “only one approach to the implementation of the WFD in the river basin district” – giving “everyone concerned with the river basin district a degree of certainty about the future of water management in the district” Not all scenario C measures have been incorporated into the plan, but we have done so where we have reasonable confidence that they can be delivered.

4.7.2 Confidence for Action

- **Consultation Response:** Concern was raised that where there was uncertainty about the deliverability of measures, particularly those in Scenario C they were not going to be included in the plan.

For the degree of certainty required by Ministerial Guidance it is clear that the plan must be based on measures that are clearly defined, practicable and with a clear delivery mechanism. In other words, the plan cannot contain “wish lists” of ideas for which there could be little certainty about actual delivery. We must be clear whether or not a water body is at good status. We must also be clear that measures are based on reasonable certainty that the problem causing a water body not to achieve good status has been identified and that the measure proposed will actually address the problem. This is the approach that has been adopted in developing the plan.

In Annex E of the plan we have indicated what future actions may take place later in the first cycle or in future cycles when we have more certainty that they are required and can be applied in an effective way. This annex also contains information on where alternative funding mechanisms have been considered.

- **Consultation Response:** There was support for the emphasis on investigations in the plan, in order to avoid unnecessary disproportionate expenditure. There were mixed opinions about the requirement for 95% certainty, some respondents felt it could prevent action taking place, others agreed with a cautious approach to setting of objectives and defining the programme of measures. Clarification was needed between confidence of classification and confidence for action.
- **Consultation Response:** There was a request for percentage confidence to be provided, rather than expressed as 'low, medium, high'.

Many aspects of water quality are highly variable in space and/or time. It is not possible to monitor all parts of every water body all the time (even if practical, the money would be better spent on making improvements to the water environment) and this leads to statistical uncertainty in classification. The Environment Agency calculates this uncertainty and expresses it in terms of our confidence that the water is in a particular class, or better than a class.

Sometimes our expression of confidence will be based on corroborative evidence as well as statistical analysis. This is particularly important for instance when managing water bodies vulnerable to nutrient enrichment. The way in which different water bodies respond to nutrient enrichment can be complicated. Sometimes we find that the water body does not meet the required standard for a nutrient but the biological community shows no sign of damage. In such situations it would be misleading to say we are very certain that the water body is at less than good status. In other situations, the water body does not meet its standard for nutrients, and the nutrient sensitive biological elements – the diatoms and macrophytes – also show signs of damage. The result for each element on its own merit may have low precision and therefore low confidence. But the fact that all elements suggest the same thing – that there is an impact – means that we become more confident there is a problem, so we override the statistical confidence from each test and say that, overall, we are very confident there is a problem and can consider corrective action.

It would be wrong to impose high costs on those who would have to make improvements in cases where we have not been able to determine failure with confidence. In such cases we need to do more monitoring and/or investigations first..

There is no 'one size fits all' rule for determining the point at which we become confident enough to take action. If it is necessary to justify expensive or controversial actions we will generally need to be at least 95% confident (or have good supporting evidence as described above for nutrients) that the water is truly worse than the class it needs to be in, or faces deterioration. But in other cases the action we need others to take may be agreed more readily and there will be no need to require a 95% level of certainty.

We have improved the terminology of our classifications in the plan. We are saying how certain we are that a water body is less than good status.

- If there is 95% certainty that a water body is at moderate or worse status we say we are very certain that the water body is less than good status.
- If there is 75% certainty we say we are quite certain that the water body is less than good status. We expect this level of certainty to be appropriate in driving most types of action.
- Below 75% certainty we say we are 'uncertain'. Such water bodies will be subject to more monitoring so that we can increase our certainty.

To communicate a simple message to users of the plan we do not include an expression of certainty if a water body is at high or good status, although we will use our understanding of confidence in the data to drive decisions about future monitoring.

Having determined that there is a real problem to be addressed, we then turn to the need to be reasonably certain that a measure will actually deliver the required environmental improvement. This clearly needs to be based on an understanding of cause and effect.

For Heavily Modified Water Bodies in particular we lack the understanding of the most appropriate mitigation measures to take to maximise environmental improvement; and thereby meet true Good Ecological Potential. There is a clear danger that, without this knowledge, any mitigation measures put in place might prove to be of little value, or even worse have the potential to cause more harm than good. Improving our understanding in this area, through pilot trials etc. is therefore the key measure for the first cycle and our approach to this has been given in 4.6.3.

4.7.3 Assessment of Actions

- **Consultation Response:** Some respondents disagreed with the outcome of assessments that had been carried out to determine the actions in the plan. They wanted to understand the process of choosing actions, the cost of implementing particular actions and which actions had not been included and why.

We have revised Annex E (Actions appraisal) to incorporate more detail on the planning process and policy assumptions to ensure transparency of decision making. It includes consideration of technical feasibility and whether costs are disproportionate.

The annex makes clear how the process has been used to identify actions to achieve the objectives of good status or good potential for this plan cycle. Where these objectives are not possible for this plan cycle the process shows how alternative objectives have been identified for each water body and the reason for this, with reference to disproportionate costs and technical feasibility.

Where alternative objectives are necessary Annex E considers what types of actions may be needed to achieve good status or potential in the future, with commentary on whether these actions could become technically feasible and proportionate in cost in future plan cycles.

The costs for implementing actions are covered in the Impact Assessments which accompany the plan. The Impact Assessments use the results from the Preliminary Cost Effectiveness Appraisal (pCEA) undertaken as part of the Defra led Collaborative Research Programme. Cost estimates of actions have also been provided by

Environment Agency staff and this has been reviewed as part of the process of moving from draft to final Impact Assessment to improve the quality of the estimates. We have gathered more information on costs but it has been difficult to obtain or attribute all of the benefits information.

- **Consultation Response:** The relationship between the Water Framework Directive and Habitats and Birds Directives was highlighted. Respondents said the plan should reiterate that where more stringent objectives are required to achieve favourable conservation status in Natura 2000 sites, these should apply. Measures needed to be included to achieve these standards.

Where Natura 2000 Protected Areas are failing their conservation objectives, Natural England and the Countryside Council for Wales have identified the measures that need to be taken to achieve them. These measures are part of a programme of work to achieve the objectives of the Habitats Directive and Birds Directive.

The presentation of the relationship between the status objectives for water bodies (Annex B) with the protected area objectives (Annex D) has been improved in the plan. It is important to note that water body status and protected area objectives are not always directly comparable. Both water body status and protected area objectives may apply in the same location and it is important to read both the objectives set out in Annex B and D in parallel. For example, where Natura 2000 Protected Areas coincide with water bodies we are aiming to achieve both the required River Basin Management Plan status objectives for each water body as well as the objective for the Natura 2000 Protected Area of Favourable Conservation Status. The introductory text to Annex D sets out this inter-relationship in more detail. The water body tables in Annex B indicate when Protected Area objectives also apply, and the Natura 2000 tables in Annex D indicate if, and if so which, water body they overlap with to help the reader understand the parallel objectives that apply to that site.

- **Consultation Response:** Some actions were felt to be missing or inadequate, such as those to protect drinking water supplies. These actions would be necessary to reach the targets proposed.

To repeat text from the earlier section on Protected Area Objectives (4.3.2): During the consultation period, the Environment Agency has carried out a risk assessment of Drinking Water Protected Areas (DrWPAs). The risk assessment has been informed by water company data, including those provided in Drinking Water Inspectorate returns. Where there is sufficient confidence that deterioration may take place, measures have been proposed and are now given in Annexes C and D. Where a risk has been identified but confidence is low, the Environment Agency will carry out further monitoring and investigation, and propose measures if the risk of deterioration can be confirmed.

- **Consultation Response:** Some felt that the draft plan contained few novel or specific measures, and concentrated too much on existing or planned action.

There is much work to complete as a result of predecessor directives which has been reported in the River Basin Management Plan. There are extensions to Catchment Sensitive Farming and source controls such as banning phosphate in domestic detergent. It is expected that the specific actions in the delivery plans will exploit innovative techniques and actions. Defra are exploring regulations to introduce streamlined Water Protection Zones, to prevent misconnections and deal with sustainable urban drainage and diffuse pollution from urban areas.

- **Consultation Response:** Questions were raised about how the success of the actions will be measured.

The objectives for each water body will be set out in some detail in Annex B. Measures have been designed, overall, to contribute to the achievement of these objectives (and the objectives for protected areas in Annex D) and this will be the main measure of their success.

- **Consultation Response:** A small number of respondents were concerned that there was a failure to address source apportionment in the plan.

This is about identifying and allocating a scale to a particular pressure and ensuring the 'polluter pays' principle is adhered to. Having a reasonable understanding of the source apportionment of pressures leading to failure to achieve objectives was an important part of appraising the measures. This is particularly the case where regulatory measures are to be used. Before additional site specific measures are required to achieve objectives, source apportionment is considered. Without this it would not be possible to assess the effectiveness and therefore the benefits the potential measures would deliver. We agree there is more work needed in this area during the first plan cycle and as our understanding improves this will allow us to justify the use of additional measures.

- **Consultation Response:** Comments were provided on the actions in the plan in terms of their relevance, the partners required, and on inconsistencies between the main document and the annexes, (Consultation Question 5).
- **Consultation Response:** Some respondents suggested that the links between certain land owners and existing wildlife habitat partnerships have not been fully represented. In particular the agricultural sector in the Northumbria area felt it had not been given the opportunity to fully participate in the development of the plans.

All the actions included in the plan will have benefits for the water environment and for people. The plan includes a range of actions, from those on a small-scale, which are often voluntary initiatives that will have benefits locally, through to large-scale and costly actions that will benefit whole catchments.

The main document of the plan aims to summarise the extent of action that will take place and to highlight some of the key actions. Annex C (Actions to deliver objectives) specifies the numerous actions that will be implemented in the river basin district during the first plan cycle.

Actions have been included in the plan where assurances have been given that the owners of those actions will carry them out during this first plan cycle. Annex C notes the lead organisations and partners for each action. In some cases actions would benefit from the participation of further partners, and we encourage them to come forward as delivery plans are developed.

The plan has been amended to reflect the importance of existing local partnerships. In addition, locally specific supplementary information will help identify locally important projects and partnerships. We, the Environment Agency, will ensure that there is ongoing engagement with the agricultural sector throughout implementation of the

Water Framework Directive; we would welcome suggestions as to how we can improve this relationship.

- **Consultation Response:** It was felt that more existing activities should be recognised. Although a few respondents made specific suggestions for new actions or re-prioritisation of actions in the draft, little detail was forthcoming.

It is agreed that existing activities need to be better reflected in the plan. Specific actions have now been listed in Annex C (Actions to deliver objectives). In other cases they are mechanisms that can be used as a way of implementing a range of specific actions at different locations. These include actions that can be put in place now and those that can be confirmed and implemented during the first plan cycle. These additional mechanisms have been included in Annex F (Mechanisms for action).

We have included further information on how the plan and programmes of other organisations, particularly public bodies, can be used to help in achieving the objectives of the River Basin Management Plan by incorporating these as policies and objectives for their own plans. This information is summarised in the main document and presented in more detail in an additional annex (Annex J).

- **Consultation Response:** Some respondents suggested that the appraisal of cost effectiveness of measures to be inadequate and queried why some measures were not assessed.

Work to understand the cost effectiveness of measures started at a national level through Government work to ensure that a full suit of effective measures were in place to meet the Directive's requirements. As part of this work they developed and consulted on a range of new or amended measures to address issues of diffuse pollution and morphology. This work considered the cost effectiveness of different possible measures.

Working with a range of stakeholders, Defra and the Welsh Assembly Government also led the Preliminary Cost Effectiveness Analysis (pCEA). This assessment considered:

- what should be done in the first planning cycle using consistent national measures, and what happens if we take longer to meet objectives;
- the types and costs of measures to be decided at national or river basin district level, reducing the need for further detailed analysis;
- the overall costs and what is affordable;
- the role of industry and other organisations in implementing measures;
- what measures could be ruled in or out of the first cycle from a national assessment.

- **Consultation Response:** Respondents suggested that measures should be prioritised on the basis of which of them are the most cost effective

There are many effectiveness attributes. The Collaborative Research Programme on WFD economics identified some 23 such attributes. While some may be more important than others, they all to some extent have an influence on the relative effectiveness of different measures. One of the most important and often overlooked attributes is the availability of cost effective delivery mechanisms. The only instances where the most cost effective set of measures have not been used are where doing so it would have been disproportionately expensive.

- **Consultation Response:** Some respondents asked for detail about the measures to be taken at the water body level to be included in the first cycle plan, or in supplementary cycles.

It is not possible to include this amount of detail in the main document to the plan. However, where we can unambiguously tie the action to a particular water body we have provided this information, either in Annex C (Actions to deliver objectives) or will be provided in alternative formats in December 09.

It should be kept in mind that by identifying where the action takes place does not necessarily define where the action will provide its benefits. Actions may have a localised effect within a water body, or could affect a much larger area. For example, all the water bodies downstream of a sewage effluent discharge will benefit from improvement to the sewage treatment works concerned.

- **Consultation Response:** Measures are not linked to water bodies making it hard to identify where actions are needed and how they should be prioritised.

Where possible, measures are recorded against specific water bodies although currently for most actions it is only possible to specify a catchment. Where it is possible to record a measure against a specific water body this has been done. In some cases, although the type of action has been confirmed, the precise location (where it will provide most benefit) has yet to be finalised and it is only possible to note in which catchment it will take place. For example, the area where a measure takes place does not correspond with water body boundaries; or a final decision still needs to be made on which water body to apply the measure to yield the most benefit.

- **Consultation Response:** The request was made for a Catchment / River Restoration Fund similar to that in Scotland which would be accessible to the Environment Agency, local government bodies and the voluntary sector.

Defra have already undertaken a scoping project to identify options for the development of a catchment restoration fund. These options will be considered with stakeholders with a view to the establishment of a possible fund from within the first cycle

As described earlier, Defra have made available £10M to the Environment Agency, the Association of Rivers Trusts, Natural England and others to deliver Water Framework Directive objectives in England this year. A significant proportion of this will go towards addressing priority measures for hydromorphology i.e. removal of priority barriers to fish and sediment controls.

4.8 Implementation

- **Consultation Response:** Respondents largely supported the Scenario C actions (Consultation Questions 6 and 7). There was willingness to work with the Environment Agency to implement these actions, and statements about what the respondents could contribute. However, there was little detail provided about how the measures could actually be implemented.
- **Consultation Response:** There were offers of help and requests to be consulted on supplementary plans, possibly at the catchment scale. Stakeholders asked how more stakeholder engagement would happen

at the catchment level and more local knowledge be used in implementation.

- **Consultation Response:** It was felt that the Liaison Panel role should change to focus on implementation. There were some requests to be involved with the Liaison Panel.

The River Basin Management Plan has been developed following guidance from Defra and the Welsh Assembly Government, and with the advice of Liaison Panels in each river basin district. The Environment Agency has found the liaison panel approach extremely valuable, and will continue to work with them throughout the plan delivery period.

For the next two to three years, the role of the panels will change to monitoring overall progress of delivery, preparing for the second cycle and encouraging river basin district wide initiatives through their sector representative approach. By 2012, work will be starting to develop the second cycle plans.

Whilst the concept of sector representation at river basin district level has generally worked very well, it has become evident that it is not well suited to locally based organisations, notably Local Authorities. Given that delivery of the plan outcomes are focused on “on the ground” activities, it is clear that additional ways of working are needed to ensure maximum involvement and delivery from locally based organisations and people. We will explore ways of expanding the co-delivery concept that has proved so useful at river basin district level at a catchment level. There is an expectation that new, innovative ways of working together will help deliver more for the environment than we have been able to capture in the plan.

We will be working to translate ‘in principle’ support given to measures that were included in the draft plan Scenario C into positive action on the ground, by working closely with partners as we develop the detail of implementation

At this stage the Environment Agency does not wish to be prescriptive about the arrangements to be adopted in each catchment. The only pre-requisites that the Environment Agency would wish to promote would be that an integrated, catchment wide approach is adopted, and that delivery should be carried out in the most cost effective and efficient way. This is very likely to mean a sharing of roles and responsibilities depending on issues and locations. There are clearly administrative support constraints, but it is hoped that, if the delivery arrangements are truly shared, best use should be made of the resources available to co-deliverers as well as the Environment Agency.

4.9 Legislation and Water Framework Directive interpretation

- **Consultation Response:** Many respondents felt that new legislation is required to assist with meeting River Basin Management Plan requirements. There was also a call for the Environment Agency to improve enforcement of existing legislation and be given all necessary legal powers. For instance the Environment Agency should be more willing to use existing powers to tackle diffuse pollution.
- **Consultation Response:** There was concern over a perceived reliance on soft, voluntary measures, and a request for a regulatory approach and greater use of new mechanisms such as Water Protection Zones.
- **Consultation Response:** It wasn’t clear how actions required by other legislation, such as the Water Resources Act will contribute to good status.

The Water Framework Directive requires member states to have in place “basic measures” for regulation of the water environment. In England and Wales most of these basic measures are already in place through existing legislation – notably the Water Resources Act 1991 and the Water Act 2003.

We have duties and powers to prevent and control pollution. We will continue to use these to set and enforce permits for discharges, to address the risk of pollution incidents, and to tackle diffuse pollution. New conditions in environmental permits will be determined where needed to meet the new River Basin Management Plan objectives and requirements. Our incident and enforcement policy will continue to target action in the context of the new objectives and requirements, whilst conforming to the principles of risk based regulation and the Regulators’ Compliance Code.

Parts of the Water Resources Act are being transferred into the Environmental Permitting Regulations regime. These will provide a common platform for the enforcement of offences, and for determining all environmental permits. This will simplify and streamline the overall regulatory process and make it more efficient and effective.

Where we believe our existing powers, or softer or voluntary initiatives, will not do the job we will promote regulatory mechanisms such as Water Protection Zones. We are carrying out a pilot to better understand how Water Protection Zones can be used, and to ensure a streamlined approach to their use in the future.

We are also working with Government on a range of other approaches and the best tools for addressing diffuse pollution. Some of these may be for the targeted use of regulatory powers, such as General Binding Rules. Others will work through market incentives, the specifications of products, community partnerships, and catchment sensitive farming.

The abstraction licensing system set up by the Water Resources Act 1963, and amended in the Water Resources Act 1991 and the Water Act 2003 has generally stood the test of time as a means of authorising abstraction, but has limitations in the ability to review licences. Some currently exempt abstractions such as trickle irrigation, dewatering and navigation, and also areas that are currently exempt from abstraction licensing will be brought into control by regulations under the Water Act 2003. Additional mechanisms such as Catchment Abstraction Management Strategies (CAMS) and Water Company Water Resource Plans are providing the means to assess abstraction impacts and to find solutions where the impacts on the environment are not sustainable.

Many existing abstraction licences were granted in perpetuity, and some have the potential to adversely impact the environment. The Environment Agency has been working on this issue for some time under its Restoring Sustainable Abstraction Programme (RSA), but the legal mechanisms for changing these licences may be protracted, and may require the Environment Agency to pay compensation. Water company abstractions that may have the potential to adversely impact Habitats Directive sites are being submitted to the Office of Water Services (Ofwat) through the water company investment periodic review process (PR09) to fund changes. The cost of changing an abstraction/finding a new source of water are very high and will be borne by the water user. The time to plan and implement these changes may also be long to avoid jeopardising public water supplies.

Defra are consulting on proposals for all abstraction licences to be time limited, which would allow periodic review and changes to be made to abstraction licences.

We will also work with Government to promote legislative change to meet the challenges of climate change, growth, and innovation.

- **Consultation Response:** There were requests for more information on the link between the WFD and the Marine Bill.

The Marine and Coastal Access Bill (currently passing through Parliament) aims to introduce a new strategic planning framework for the marine environment across England and Wales, underpinned by a UK-wide marine policy statement. The bill includes proposals for a new marine licensing system, marine conservation zones for protection of nationally important species and habitats and in England two new delivery bodies - the Marine Management Organisation (MMO) and Inshore Fisheries and Conservation Authorities (IFCAs). In Wales the devolved functions will be delivered by the Welsh Assembly Government. This new legislation should provide the framework necessary to implement the requirements of the Marine Strategy Framework Directive (for Good Environmental Status) which is complementary with and overlaps with the River Basin Management Plan in coastal waters.

At the coast and in estuaries marine plans will overlap with the River Basin Management Plan. We are working closely with Defra, the Welsh Assembly Government and others to ensure that development of the marine policy statement and marine planning guidance is consistent with, and supports delivery of River Basin Management Plan measures to achieve good status. Likewise we are working with Defra and the Welsh Assembly Government to ensure that marine licensing decisions and inshore fisheries management in estuaries and coastal waters will be compliant with objectives of the River Basin Management Plan. The designation of marine conservation zones in these waters provides a further opportunity to contribute to achievement of Good Ecological Status.

- **Consultation Response:** Respondents enquired how the requirement of Article 4(7) of the Water Framework Directive would be met in plan and how will the new developments be dealt with.

The WFD requires an assessment of the impacts of all new physical modifications to ensure that they do not cause deterioration in the status of a groundwater body or ecological status or potential of a surface water body or prohibit a water body from meeting its ecological objectives. Article 4(7) sets out circumstances in which failure to achieve certain WFD objectives is permitted. Where a new modification does cause a water body to fail certain WFD objectives but meets a series of tests laid out in Article 4(7) then the modification can be permitted. Article 4(7) has been a requirement since December 2006. Article 4(7) assessments have been carried out for 'new developments' occurring between December 2006 to March 2009 and these are reported in the River Basin Management Plan (Annex B). Just 3 schemes were reported as causing deterioration in status and passed the Article 4(7) tests.

Future physical modifications in water bodies will need an assessment to determine whether they will impact on River Basin Management Plan objectives. The Environment Agency is writing a guide for organisations undertaking developments in water bodies. This will outline how to undertake Article 4(7) assessment to ensure compliance with WFD.

4.10 Climate Change

4.10.1 Consultation response; Respondents supported the outcome of the assessment in Annex H in terms of changes to risks of pressures as a result

of climate change and the effectiveness of the identified actions in a changing climate. However they wanted more information on how the Annex H assessment was performed.

- 4.10.2 Consultation response;** Respondents commented on use of UKCP09 (United Kingdom Climate Projections 2009) projections and it was mentioned that climate change would need to be considered more in ongoing river basin management and the Environment Agency should set an example in this respect.

Annex H looks at climate change impacts on the pressures, actions and achievement of Water Framework Directive objectives in the River Basin Management Plan. The assessment was qualitative. Measures were screened by considering whether they were likely to be in-flexible or vulnerable to conditions under a changing climate. These assessments were not intended to inform decision making on their own. More robust assessments have been done previously on existing measures and those coming through processes such as the water company investment periodic review process (PR09).

The information presented in Annex H of the draft plan includes UKCIP02 (United Kingdom Climate Impacts Programme 2002) projections and the assessments of pressures and measures were done with these projections in mind. This was the most up to date information available at the time the draft plan was written.

On 18th June 09 the new UKCP09 projections were released. We have replaced the UKCIP02 information with UKCP09 information in a revised Annex H. We have also re-screened the revised set of measures in the River Basin Management Plan with a consideration of this new information.

Respondents identified a number of Climate Change issues which were not listed in the Annex: such as pH changes in seawater. Additional text has been added in the revised Annex H to fill a number of these gaps.

- **Consultation Response:** It was disputed whether the carbon impacts of measures had been adequately addressed when considering options for action or that the overall carbon impact of the selected programmes of measures had been adequately assessed.

We have added text into Annex E of the plan to identify how the cost of carbon was included in option appraisal. For the first plan it has only been possible to quantify the carbon costs associated with Periodic Review 2009 water quality measures. This is where we expect the most significant carbon impacts will occur because the actions will include requirements for additional treatment, construction of new works or upgrades to existing work. The majority of other actions are likely to have low impact as they are investigations, partnerships or encouraging best practice management. We agree that for subsequent cycles, the carbon implications need to be adequately addressed to promote low energy measures for pressures.

For overall climate impact of the actions in the plan, the accompanying Strategic Environmental Assessment (SEA) report describes the potential carbon impacts of the programmes of measures. The SEA report identifies the positive and negative climatic effects associated with the actions in the plan.

- **Consultation Response:** Respondents identified the need to consider broad-scale policy issues in considering priorities between,

for instance, water environment objectives and food production or renewable energy

We agree climate change will need greater consideration as we develop subsequent planning cycles. A great deal of work is going on within government, the Environment Agency and other organisations.

River Basin Management Plan implementation will help target sites that are already at risk from existing pressures, prevent deterioration and improve the ecological condition of the water environment. As highlighted in “Climate Change, Adapting for Tomorrow” this should build resilience into our aquatic systems from the further risks of climate change. There is also the need to use the capacity of catchments to retain water and to release that water slowly to help avoid climate change impacts from floods and droughts.

Defra, (on behalf of the UK Biodiversity Partnership of which the Environment Agency is a partner) has published ‘Conserving biodiversity in a changing climate: guidance on building capacity to adapt’ (2007).

The Welsh Assembly Government has also published ‘Responding to our changing climate’ a consultation on a climate change adaptation action plan for Wales (2007), which outlines impacts expected in Wales and actions needed in response.

These both confirm that conserving existing biodiversity and reducing new and existing pressures should be the core principles upon which we build the climate change adaptation strategy for freshwater ecology.

It is also clear that we will have to find ways to manage our urban and rural environments to balance the delivery of a multitude of objectives such as food security, renewable energy production and environmental quality.

- **Consultation Response:** A large number of respondents from a broad spectrum of sectors thought that river basin management should be the focus to restore the natural characteristics of catchments to build resilience to climate change impacts.

The Environment Agency would generally agree that restoring the “naturalness” of catchments will help protect against the further risk from climate change. To this end we are engaged in the Wetland Vision for England and the Countryside Council for Wales’s similar strategic approach to managing wetlands. Experience gained by partners and ourselves will help to inform work over the first plan cycle.

Actions were already contained the draft plan for England and Wales. In this plan actions are:

- Peatscapes is a collaborative project that aims to conserve and enhance the internationally important peatland resource within the North Pennines Area of Outstanding Natural Beauty (AONB) and to promote peatland conservation at the local, national and international level.
- The Northumbria Basin contains most of the North Pennines Orefield, where lead, zinc and other metals were mined. This has left a mixed legacy. The industrial heritage is a tourist attraction and there are rare habitats for metal tolerant flora and fauna. There are, at the same time, some negative impacts on the local habitats and river life due higher than normal concentrations of metals.

The Environment Agency is working with other interested organisations and

local communities to see if we can agree what sustainable improvements to this unique environment will look like. This will ensure we get the right balance between protecting the unique environment for habitat, wildlife, resource protection and heritage whilst also recognising the economic and aesthetic needs of the local community.

Examples from other plans include:-

- South-West Restoring the Mires on the moors project will restore significant areas of degraded bog and peat habitat. The intended benefits include re-establishing natural stream hydrology and encouraging water retention in the upland wetlands to delay and weaken peak river flows while augmenting low base flows at times of low rainfall. It will also improve water quality benefiting all river life including salmon and trout which are common in Exmoor river headwaters.
- The Sustainable Catchment Management Planning programme (SCAMP) in the North-West which is being delivered by United Utilities and Royal Society for the Protection of Birds. SCAMP is looking to implement land management conducive to meeting SSSI condition and water quality standards. Part of this work is to improve water quality further down the catchment by restoring degraded habitat higher in the catchment.
- Demonstration Test Catchment Projects. This is initially a 5-year Defra/Environment Agency funded programme which will work within three catchments: The Hampshire Avon, Wensum and Eden to implement mitigation measures for reducing diffuse pollution at a catchment scale and monitor their effectiveness on water quality and ecology.

The Projects listed above within the river basin district and elsewhere will all increase our knowledge of effective techniques that can be deployed more widely in the later plan cycles.

The intent to improve catchment resilience has been reinforced and is now starting to be delivered through, for example, actions coming from the "Pitt Review" which followed flooding in 2007 and through the flood risk management "Making Space for Water" initiative. Surface water management plan, which have been proposed, from these initiatives are intended to prevent rapid water runoff by using more natural and sustainable approaches to water management.

- **Consultation Response:** Respondents identified the need to develop monitoring programmes to detect climate change, particularly water temperature monitoring and to consider climate change in objective setting.

Water temperature is a useful indicator of climate change and UK organisations collect a lot of data on it. Until now that data has not been stored in one place or analysed for a climate change signal.

We are developing a Water Temperature Archive to address this problem. This will start with river data and move on to lakes and estuary sites. Once this is complete we will be looking at the long term monitoring network requirements and assessing the importance for River Basin Management Plan objectives of any temperature signals detected.

4.11 Impact Assessment, costs and benefits

- **Consultation Response:** There was concern about the very large share of costs falling to the water industry.
- **Consultation Response:** There were concerns about the size of the increase in water bills necessary to fund the water industry investments, and the impacts on society. Coupled with this was the concern about the introduction of compulsory metering and the potential for 'water poverty'.
- **Consultation Response:** Some respondents wanted more information on disproportionate costs and technical feasibility.

The Impact Assessment has been amended in light of consultation responses. The final Impact Assessment will describe the reference case of existing actions (Scenario A in the draft plan) but the main focus is on the costs and benefits of implementing the main policy option. This relates to the new policy actions arising from the introduction of the River Basin Management Plan on both private and public sectors.

The largest share of the costs in the main policy option will continue to relate to the water sector. This is in accordance with the findings from the Defra led Collaborative Research Programme which undertook a preliminary cost effectiveness assessment (pCEA) of measures. This work highlighted that the greatest certainty of outcomes was via those relating to the water industry rather than other sectors (e.g. agriculture) where further investigations were needed. It is also consistent with the updated National Impact Assessment published in February 2008 which recommended applying a phased approach to implementing the River Basin Management Plan over the 3 cycles. The assumption in the National Impact Assessment was that by undertaking investigations in the first cycle a more targeted and cost effective set of measures could be applied in subsequent cycles, thereby reducing the overall cost to deliver the target WFD outcome.

Our approach since the draft version of the Impact Assessment has been to review the cost information and ensure that only new measures (rather than existing) are included and to ensure that the costs relating to these measures are robust. There were also a number of measures with missing cost information which we have now included in the assessment.

The Environment Agency has also worked closely with Ofwat and Defra to undertake a distributional cost assessment of water company measures in accordance with the Ministerial River Basin Planning Guidance (Volume 2). This work took account of cost benefit and affordability considerations. The Environment Agency has also undertaken a peer review of the benefits values used in the Final Impact Assessment to ensure that the values used are accurate. The approach is clearly explained in a supporting document that will be issued at the same time as each of the River Basin Management Plan Impact Assessments.

Through a Collaborative Research Programme, Defra and the Welsh Assembly Government developed guidance on the evidence required to justify disproportionate cost or expense decisions under the WFD. This is contained in River Basin Planning Guidance Volumes 1 and 2. There is also EU guidance on the use of Exemptions and Disproportionate costs, which the Environment Agency has taken into account in its assessments.

The Environment Agency has worked closely with both Defra and Ofwat in following the guidance for disproportionate cost analysis for the water industry. The results from

the analysis indicated that WFD PR09 actions had a low overall effect on water customer bills and a negligible effect on water poverty.

Disproportionate cost is not just about the overall balance between costs and benefits, but also about the distribution of those costs and benefits (who pays and who benefits). It should be noted that negative distributional consequences may only be transitory – for example losses of business and jobs may be compensated by increases in the activity of other firms within or outside the area being looked at.

4.12 Responses received from local workshops and meetings

Each of the local workshops provided a general introduction to river basin planning and then focussed on a specific sector or topic area. Delegates were given an opportunity to look in detail at a small number of measures from the plan and discuss the relevance of the measure and what would need to happen to fully deliver the measure.

Summary of comments received

- **Consultation response:** In general, delegates were supportive of the approach in the plan and recognised that it is the first plan and that not all issues can be addressed in the first cycle. The general feelings around the measures highlighted a number of key concerns regarding:
 - Allocation of measures in the correct scenario;
 - Lack of detail, which prevents a vigorous analysis of the of measures proposed;
 - A need for measures to be practicable and enforceable, aspirational targets are unlikely to be delivered;
 - The plan needs to help draw together a number of existing policies and plans and be clear and concise in its objectives;
 - The evidence base must be robust;
 - The role of the Environment Agency in “policing “the plan needs to be better defined.

The layout of the plan for the Northumbria River Basin District more closely links proposed actions and environmental outcomes in both the main document and in the annexes.

The final programme of measures has been closely informed by the consultation responses received. This should result in the measures being realistic and more accurately reflect the range of actions that are being proposed in the river basin district.

It is our intention to produce local level supplementary information to help develop implementation programmes based on geographic or sector interests.

5 Next steps

Individuals who wish to follow up their responses, or points made within this document, in more detail are welcome to contact us.

Responses from this consultation will be used to inform the development and/or delivery of the Northumbria River Basin Management Plan. The plan will set out the issues facing the water environment in the Northumbria River Basin District and the actions planned to improve it between 2009 and 2015.

All River Basin Management Plans will be presented to Government for approval on 22 September 2009 and will be published on 22 December 2009. Once the plan has been submitted to Government in September you will be able to view what was submitted on our website.

Further information about the Water Framework Directive, the Northumbria River Basin District and delivery of the River Basin Management Plans can be found on our website at www.environment-agency.gov.uk/wfd alternatively you can contact:

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