

water for life and livelihoods

A consultation on the
Draft River Basin Management Plan
Northumbria River Basin District



December 2008 Corrected – February 2009

The Environment Agency works with other regulators and co-deliverers to protect the water environment in Northumbria River Basin District and improve it for the benefit of people and wildlife. Together with a liaison panel of representatives from these various sectors, the Environment Agency has produced this draft plan. Achieving the outcomes of this plan will involve an even wider range of organisations and individuals - everyone has a part to play.

In preparation of the draft plan the liaison panel developed its shared vision.

The liaison panel's shared vision

The water environment plays a key roll in the North East and over recent years huge improvements in the health of rivers have been achieved. These improvements have helped the economy prosper; aided the regeneration of historic towns and cities and made Northumbria River Basin District a better place to live and work. Despite these improvements there is still a lot to do and everyone must strive to further improve the environment for all.

The Water Framework Directive (WFD) is an opportunity to achieve more for the Northumbria River Basin District. It is an ambitious wide-ranging piece of legislation that challenges us all to manage the whole water environment and all of its subtle and interrelated issues. Standards must be raised and quality improved for every aspect of the water environment.

How the water environment is managed has far reaching impacts. For example, land management practices have implications on rural business; improvements to waste water treatment plants could have an impact on customers' water bills; spatial planning will affect how urban developments are managed; and there will also be impacts on the visual landscape and leisure activities.

In order to meet these challenges and achieve more for Northumbria River Basin District it is crucial that partners work closely together to integrate the work of a range of organisations. The Northumbria liaison panel have been central in the development of this plan. They represent the key sectors that have an impact and influence on how the environment is managed.

This plan outlines a commitment to take action to deliver the following benefits:

- Clean water for drinking, bathing, communities and economic uses
- Wiser sustainable use of water
- Better habitats for wildlife that live in and around water
- Protect and enhance native wildlife
- Protect the natural landscape, promoting the value of recreation

We will do this by achieving the following environmental outcomes:

- Lowering the impact of transport and built environments
- Sustainable amounts of water to support social and environmental needs
- Improved and protected wildlife habitats by reducing the impact of physical modification and invasive non-native species.
- Improved water environment through better rural land management
- Reduced impact of localised sources of pollution

This plan will not specifically address flooding as this will be done through Catchment Flood Management Plans and future work implementing the Floods Directive.

Published by:
Environment Agency, Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD
Tel: 0870 506506
Email: enquiries@environment-agency.gov.uk
website: www.environment-agency.gov.uk

Some of the information used on the maps was created using information supplied by the Geological Survey and/or the Centre for Ecology and Hydrology and/or the UK Hydrographic Office

All rights reserved. This document may be reproduced with prior permission of the Environment Agency.
December 2008

Your views count – how to respond

The proposals in this draft plan may affect you, your business or your environmental interests. We want to know what you think. **This consultation runs from 22 December 2008 until 22 June 2009.**

Q Questions throughout this document are marked by this sign. Turn to the inside back cover to see how to respond.

This document describes the main issues for the Northumbria River Basin District and sets out in brief the actions proposed for dealing with these. The annexes to the document give much more detail on the conditions in the river basin district, the actions proposed and the mechanisms that can be used to take forward these actions.

You can help in creating an effective and achievable River Basin Management Plan by responding to this consultation, and giving any other suggestions or comments you have.

We will use your comments to help revise the proposals, and will publish a response document on our website by 22 September 2009 to show how we will take your comments into account. The main questions concern the following:

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

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

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

Q Any other comments you may have on this plan

You will be able to get a good understanding of what is proposed for the river basin district simply by reading this main document. You may also want to look at the more detailed information in the annexes before you send your comments.

This sign indicates where you can find further information.

» The annexes to the plan can be downloaded from our website at www.environment-agency.gov.uk/wfd

It would be extremely helpful if you could provide comments as soon as possible within the consultation period.

Contents

1. Introduction.....	7
2. About the Northumbria River Basin District.....	10
3. The environmental outcomes for Northumbria River Basin District.....	12
4. The water environment now	18
5. The objectives for the waters in the Northumbria River Basin District	22
6. The Northumbria River Basin District catchments in 2015.....	28
7. Summary sector action plan.....	38
8. Summary of key contributions from different sectors	42
9. Planning for changing conditions	50
10. Further information	52
11. Give us your views	53
12. Consultation questions	54

Figures

Figure 1 Map of the Northumbria River Basin District	11
Figure 2 The components of overall status	19
Figure 3 Current ecological status and ecological potential of rivers, by length assessed, in the Northumbria River Basin District	20
Figure 4 Current biological status and ecological potential of rivers, by length assessed, in the Northumbria River Basin District	20
Figure 5 Current quantitative status of groundwater bodies in the Northumbria River Basin District	20
Figure 6 Current chemical status of groundwater bodies in the Northumbria River Basin District	20
Figure 7 Targets for subsequent cycles of the Northumbria river basin management plan	23
Figure 8 Predicted ecological status and ecological potential of rivers in 2015, by length assessed, in the Northumbria River Basin District	24
Figure 9 Predicted biological status of rivers in 2015, by length assessed, in the Northumbria River Basin District	24
Figure 10 Predicted status and potential for surface water bodies in 2015.....	25
Figure 11 Predicted quantitative status for groundwater in 2015	26
Figure 12 Predicted chemical status for groundwater bodies in 2015.....	27
Figure 13 Progress towards achieving good status and potential in surface water bodies in the Northumberland Rivers catchment (as a proportion of river length).....	29
Figure 14 Planned progress towards achieving good status and potential in surface water bodies in the Tyne catchment (as a proportion of river length).....	31
Figure 15 Progress towards achieving good status and potential in surface water bodies in the Wear catchment (as a proportion of river length)	33
Figure 16 Planned progress towards achieving good status and potential in surface water bodies in the Tees catchment (as a proportion of river length).....	34
Figure 17 Progress towards achieving good status and potential in estuarine and coastal water bodies in the Northumbria River Basin District.....	36
Figure 18 Progress towards achieving good status (quantity) in groundwater bodies in the Northumbria River Basin District.	37

Annexes

Annex A	Current state of the waters in the Northumbria River Basin District
Annex B	Objectives for the waters in the Northumbria River Basin District
Annex C	Actions to deliver objectives
Annex D	Protected area objectives and Natura 2000 actions
Annex E	Actions appraisal
Annex F	Mechanisms for action
Annex G	Pressures and risks
Annex H	Adapting to climate change

Annex I	Designating candidate artificial and heavily modified water bodies
Annex J	Refining the water bodies
Annex K	Economic analysis of water use
Annex L	Record of consultation and engagement
Annex M	Competent authorities
Annex N	Glossary

Corrections

16/02/09	Correction to Figure 12 Predicted chemical status for groundwater bodies in 2015
----------	--

1. Introduction

1.1. Background

- 1.1.1. This plan is large and contains the most information ever collated together for the Northumbria River Basin District.
- 1.1.2. This report gives an overview of what the current state of the environment is, how much and by what means it will be improved, and who will be involved in this process.
- 1.1.3. The annexes to this report provide much more detail. In some cases this is given for each water body - the smallest geographical units that are required to be reported on. The Northumbria River Basin District is made up of 452 water bodies. Hence some of the annexes are large.
- 1.1.4. To get information about your local area, the Environment Agency website 'What's In My Back Yard' www.environment-agency.gov.uk/maps gives most of the details included in the annexes and is searchable by postcode or place name. The maps in Annex B also show where the detailed water body information is.
- 1.1.5. The key annexes in this report are:-
 - A Current state of waters
 - B Objectives for waters
 - C Actions to deliver objectives
- 1.1.6. The Environment Agency works with other regulators and co-deliverers to protect the water environment in the Northumbria River Basin District, and improve it for the benefit of people and wildlife. Together we are using an approach called river basin management planning to involve others in this work.
- 1.1.7. The Northumbria River Basin District Liaison Panel has been central to helping manage this process. The panel includes representatives of businesses, water companies, planning authorities, environmental organisations, consumers, farmers and landowners, ports, the Coal Authority and regional government. All have key roles to play in implementing the plan.
- 1.1.8. We want to know what you think, so the proposals can be improved, and an effective River Basin Management Plan compiled for the river basin district. This plan will be published in December 2009. It will review the current condition of the water environment, set out what improvements are necessary, and the actions that need to be taken.
- 1.1.9. We have previously produced a report on the risks of human activities on the water environment and have consulted on how we should work together with others. We have also consulted on what are the most significant issues that need to be dealt with in the river basin district.

» [A description of the Northumbria River Basin District Liaison Panel and a record of consultation and participation that has helped to develop this plan and the river basin management planning process, is given in Annex L.](#)

- 1.1.10. In this consultation we are now seeking your views on the actions proposed.

1.2. River basin management

- 1.2.1. The water environment is a precious and vital resource that must be protected. The Draft River Basin Management Plan focuses on achieving the protection, improvement and sustainable use of the water environment - surface freshwaters (including lakes, streams and rivers), groundwater, ecosystems - thriving plants and animals - such as some wetlands that depend on groundwater, estuaries and coastal waters out to one nautical mile. This draft River Basin Management Plan has been prepared under the Water Framework Directive, which requires all countries throughout the European Union to manage the water environment to consistently high standards.
- 1.2.2. All countries in the European Union have to:
- Prevent deterioration in the classification status of aquatic ecosystems, protect them and improve the ecological condition of waters;
 - Aim to achieve at least good status or potential for all waters. Where this is not possible, good status should be achieved by 2021 or 2027¹;
 - Promote sustainable use of water as a natural resource;
 - Conserve habitats and species that depend directly on water;
 - Progressively reduce or phase out releases of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
 - Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants;
 - Contribute to mitigating the effects of floods and droughts.
- 1.2.3. It is very important to recognise that a wide range of organisations will need to be involved in achieving these objectives. As well as regulation, voluntary initiatives, organisations and people need to work together to deliver protection and improvement of the water environment. Everyone has a part to play.
- 1.2.4. The final River Basin Management Plan will be reviewed and revised every six years.
- » Further information on the Water Framework Directive can be found on the European Union website http://ec.europa.eu/environment/water/water-framework/index_en.html
- » Further information on river basin management planning can be found on our website www.environment-agency.gov.uk/wfd
- » Government Ministerial guidance on river basin planning and management can be found at www.defra.gov.uk/environment/water/wfd/management
- 1.2.5. To prepare this plan the water environment has been divided into units called 'water bodies' and designated as rivers, lakes, estuaries, the coast or groundwater. Some water bodies have been designated as artificial or heavily modified if they are substantially modified or created for water supply, urban purposes, flood protection and navigation. This designation is important because it recognises their uses, whilst making sure that ecology is protected as far as possible.
- 1.2.6. There are a confusing number of mechanisms associated with protecting drinking and surface waters. Summarised below are the main ones. The programme of measures, i.e. the actions in this plan, will focus action in Safeguard Zones in order to protect Drinking Water Protection Areas. However, if required improvements are not achieved then Water

¹ Annex B explains the objective setting process. Annex E contains the appraisal of measures including justifications for extended deadlines

Protection Zones are likely to be designated in the future. Currently no Water Protection Zones are proposed in the Northumbria River Basin District.

- 1.2.7. **Drinking Water Protection Areas (DrWPAs)** - This term refers to a body of water from which drinking water is abstracted. The Water Framework Directive aims to prevent deterioration in quality and reduce the level of treatment required
- 1.2.8. **Safeguard Zones (SGZs)** - A Safeguard Zone is an area where diffuse pollution is a risk to water abstractions. Safeguard Zones will be identified for all abstractions which are significantly at risk of failing to meet Water Framework Directive objectives. These are required under Article 7 of the WFD.
- 1.2.9. **Water Protection Zones (WPZs)** - A Water Protection Zone is a defined area where additional statutory measures are used to deal with, or to prevent, water pollution. They can be designed to prohibit or restrict activities giving rise to entry of poisonous, noxious or polluting matter into controlled waters. WPZs are currently introduced through a legal order, via the Water Resources Act 1991.
- 1.2.10. **Water Safety Plans** - Similar to Article 7 of the WFD, these plans are required to identify and manage risks to drinking water within a catchment, to make sure it is safe for human consumption and that it meets the health based drinking water standards. These are however, driven by the Drinking Water Inspectorate. Water companies are responsible for writing these plans.
- 1.2.11. The Water Framework Directive sets a target of aiming to achieve at least 'good status' in all waters by 2015. For surface waters, good status has an ecological and a chemical component. Good ecological status is measured on the scale high, good, moderate, poor and bad; and good chemical status as pass or fail. For groundwater, good status has a quantitative and a chemical component, which together provide a single final classification: good or poor status.
- 1.2.12. Good ecological status is defined as a slight variation from undisturbed natural conditions, but artificial and heavily modified waters are not able to achieve natural conditions. Instead the target for these waters is good ecological potential. This is also measured on the scale high, good, moderate, poor and bad. The chemical status of these water bodies is measured in the same way as natural water bodies.
- 1.2.13. Protected areas have been established under European legislation. For many years action has been taken progressively to make sure the objectives set for them are achieved. Achieving the protected area objectives is also a key part of the Water Framework Directive and one of the priorities for the first cycle of river basin management. Many of the actions in this plan are directed towards these objectives and most also help in aiming to achieve the good or good potential status objective.

2. About the Northumbria River Basin District

- 2.1.1. The Northumbria River Basin District covers an area of 9,029 km² from the Scottish Border to just south of Guisborough, and from the Pennines east to the North Sea. It includes Northumberland and County Durham, with small areas of North Yorkshire and Cumbria. The Rivers Tweed and Till are not included in the Northumbria River Basin District as they are part of the Solway Tweed River Basin District. Northumbria's landscape is one of extreme variation, from highly industrial urban areas to the moors, hills and valleys of Northumberland National Park and the Pennine Area of Outstanding Natural Beauty.
- 2.1.2. Approximately 2.5 million people live in the region, primarily in the two locations: Tyne and Wear, and the Tees Valley. Many local authorities within the district are proposing New Growth Points, where growth will be accelerated up to 2016. Before 2021 the Regional Spatial Strategy proposes an additional 98,540 homes (average annual net additions to the stock of 7,580 2009-2021) along with jobs and services for the people occupying them. The Environment Agency will continue to work with the planners, developers and communities affected by growth to maintain and improve the environment.
- 2.1.3. The river basin district's principal urban centres are former industrial towns, associated with the coal, steel and shipbuilding industries. The most significant cities and towns include Sunderland, Newcastle, Durham, Stockton and Middlesbrough. Approximately 30% of the river basin district population live within these cities. Several of these former industrial centres have high levels of urban deprivation.
- 2.1.4. To the west of the urban centres, a diverse rural landscape supports a range of agricultural activities from hill farming to arable production. Forestry is also a significant industry. Around 67% of the total land area is farmed, managed for moorland grouse or used for forestry. Coal and lead mining and quarrying were once more wide-spread. Past activities have helped shape the rural landscapes that we all enjoy today. The blanket peat bogs in the North Pennines and Cheviots form the headwaters of the rivers which flow east to the coast.
- 2.1.5. The largest contributing economic sectors in the region include tourism, business services, wholesale and distribution, and health. Manufacturing industries are important to the region, with the largest contribution to output from the chemicals, petrochemicals, food, drink, transport equipment and the metals sectors. Although agriculture only makes up a small part of the regional economy, it is a critical element of the rural economy. Tourism is also an important element of the rural economy, based on some of the most valuable natural resources and cultural assets in England.

Figure 1 Map of the Northumbria River Basin District.



3. The environmental outcomes for Northumbria River Basin District

3.1. Background

- 3.1.1. The environmental outcomes expected to be achieved as a result of the planned actions are grouped under the headings below, and discussed in more detail in the following sections.
- Lowering the impact of transport and built environments
 - Sustainable amounts of water to support social and environmental needs
 - Improved and protected wildlife habitats by reducing the impact of physical modification and invasive non-native species
 - Improved water environment through better rural land management
 - Reduced impact of localised sources of pollution
- 3.1.2. Overall, it is expected that the implementation of the measures planned will allow achievement of significant environmental improvements and ensure no deterioration in the environment.
- 3.1.3. It is expected that by 2015 implementation of the measures planned will allow achievement of good status in over 48% of all surface water bodies. This represents over 1100 km of river, almost 210km² of coastal waters and one-third of a km² of lakes. Just under 25% of surface water bodies have yet to be assessed. Improvements of 8 groundwater bodies to good quantitative status by 2015 represents nearly 7800 km² of aquifer outcrop together with an associated 100 km² of associated wetlands.
- 3.1.4. The way water bodies are classified under the Water Framework Directive will mean not all of these improvements will result in a change in overall status of the waterbodies immediately.

3.2. Lowering the impact of transport and built environments

- 3.2.1. Growth and regeneration in the Northumbria River Basin District is mainly concentrated in existing towns and much of this development is expected to be on previously developed land, for example in the regeneration of former industrial sites, which is often close to water bodies. River Basin Planning must have a role to play in deciding new uses for previously developed land so that new development is in the most sustainable locations and takes into account measures needed to improve the environment. Where new development is on greenfield sites (e.g. proposed urban extensions) it must be ensured there is 'no deterioration' of water bodies because of this.
- 3.2.2. We want to see reduced runoff from urban development and roads. The way in which urban land is used should protect and restore habitats, species and natural processes. It should also protect drinking water supplies and bathing areas. Toxic runoff should be reduced and, where possible, prevented, as this reduces diversity in aquatic plants and animals.
- 3.2.3. The main causes of the problem have been linked to:
- Flood defences – for example with artificial river embankments;
 - Housing growth, leading to pressures on water quality and water resources;
 - Discharges from sewerage systems and private sewage treatment works;
 - Discharge of industrial waste containing organic matter;
 - Using fertilisers and pesticides in parks and gardens;
 - Run-off from roads, driveways, car parks, car washing, contaminated land.
- 3.2.4. The responsibility for implementing actions that will contribute to lowering the impact of transport and the built environment will fall on a number of different sectors including urban and transport related activities, the water industry and the construction industry. A significant lead will have to be provided by Local Government, particularly planning authorities. The regional planning body will have a significant role to play in ensuring that the Regional Spatial Strategy and proposed Integrated Regional Strategy actively seek to endorse the requirements of the WFD and promote sustainable development across the River Basin District.
- 3.2.5. What this means for the Northumbria River Basin District**
- 3.2.6. Examples of the actions that are being proposed in this plan include changes in planning permissions and more pro-active implementation of sustainable drainage systems. In most cases these are generic actions that will benefit across the country or at river basin district level, for example working towards a ban on phosphorus in detergents or the promotion of sustainable drainage, but in some cases they are specific to catchments or sub-catchments.

3.3. Sustainable amounts of water to support social and environmental needs

3.3.1. Water should be affordable, yet supplies need to be provided in a sustainable way. There should also be sufficient flow levels for wildlife to flourish.

3.3.2. The main contributions to flow problems have been identified as:

- providing public water supply
- industrial abstractions
- modified channels and structures such as weirs
- climate change

3.3.3. Public water supply is the dominant water use within the Northumbria basin. The total daily volume of abstractions from the river basin district amounts to approximately 1012.6 million litres a day. Northumbrian Water is the water and wastewater company for the whole river basin district with the exception of Hartlepool where water is supplied by Hartlepool Water.

3.3.4. The main responsibility for implementing actions that secure sustainable use and availability of water falls on a number of different sectors, including the water industry, agriculture and consumers. As the provision of public water supply is the main source of demand for water, it is clear that the main player will be the water industry specifically Northumbrian Water, Hartlepool Water, and the Environment Agency as regulator. Planning authorities also have a key role to play in managing water resources including promoting water efficiency in new developments.

3.3.5. What this means for the Northumbria River Basin District

- On publication of the water resources strategy for England and Wales 'Water for People and the Environment', the Environment Agency will develop an Action Plan for the Yorkshire and the North East Region. The plan will translate actions from the main strategy into local initiatives based on local needs and priorities.
- The Environment Agency is working with Northumbrian Water and Durham University to devise and implement ecologically sensitive and sustainable release regimes for regulated rivers in the basin.
- Water efficiency will be promoted to ensure that water is used sustainably. For example, the Environment Agency will continue to promote water efficiency in new development through regional strategies and local development frameworks by encouraging water efficiency to be included in planning applications.
- Metering will be increased in the district subject to funding through the 2009 water company periodic review. By 2010 Northumbrian Water plans to meter about 24% of domestic households.

3.4. Improved and protected wildlife habitats by reducing the impact of physical modification and invasive non-native species

3.4.1. The whole landscape has been modified to accommodate human needs; this has meant the straightening and culverting of rivers, re-claiming estuarine habitats, building reservoirs for drinking water, etc. Given the need for improving ecological quality, it is necessary to ensure that benefits are maximised for the environment and wildlife whilst considering human requirements. Wildlife also has to compete with invasive non-native species which affect native species, sometimes to the point of extinction. River basin management planning provides the opportunity to take measures to reduce the impact of modifications and invasive non-native species on wildlife. This work is closely linked to the need to review abstraction licences to ensure they do not adversely affect the conservation objectives of Natura sites (by 2015) and Sites of Special Scientific Interest (by 2021).

3.4.2. What this means for the Northumbria River Basin District

3.4.3. The improvements envisaged as a result of the measures planned include;

- habitat creation and river restoration to minimise flood risk;
- greater involvement of community groups with managing wildlife habitats;
- developing a strategic approach to minimising the impact and introduction of invasive non-native species;

3.4.4. The improvements envisaged as a result of the actions planned include a strategic and planned approach to flood risk management and coastal erosion which incorporates opportunities for habitat creation, river restoration and general ecological enhancements. Habitat opportunity mapping studies, such as the North East Wetland Feasibility Study and the developing Wildlife Trust habitat mapping, will form an integral part of flood risk management plans. This will result in a programme of habitat creation and restoration in key areas, building on existing partnership initiatives e.g. in the Lindisfarne coastal area, and expanding into other key catchments. Greater involvement of community groups in managing wildlife habitats is key to delivering improvements and will raise the profile of the ecological status of the Northumbria River Basin District's rivers.

3.4.5. Developing a strategic approach will minimise the impact and introduction of invasive non-native species, allowing the native wildlife to flourish. Building on and expanding the work of the Tyne River Trust across the River Basin District will ensure a co-ordinated and prioritised approach to the management of invasive non-native species. Working in partnership will improve the identification, control and disposal of these species, and ensure that future trends are monitored to enable a rapid response to new incidents.

3.5. Improved water environment through better rural land management

- 3.5.1. The way land is managed has a direct impact on rivers, burns, ponds, lakes and coast, the wildlife they support and drinking water. Land and water are inextricably linked. The region's rivers are a key natural asset within the high value rural landscapes. The Tyne is one of the best salmon rivers in England. The coast and hills attract many visitors.
- 3.5.2. Getting soil management right, and adopting best farming practice, is key to reducing the amount of sediment, excess nutrients and pesticides entering rivers and streams, both in the upland and lowland parts of the region.
- 3.5.3. Achieving the benefits that this river basin management plan will deliver, via improved rural land management, will need to be based on effective partnerships. Key partners are those who farm and manage the region's rural landscapes. Achieving the aims of this plan will support sustainable rural development and deliver wider benefits for the region.
- 3.5.4. The improvements required will be achieved by a combination of adoption of best practice, advice, education, incentives and regulation. The Environment Agency will continue to improve the way it regulates by finding the right balance between regulation advice and incentives. The Environment Agency will work with partners to develop the evidence base and target activities, and will focus on areas of highest risk.

3.5.5. What this means for the Northumbria River Basin District

- 3.5.6. The improvements envisaged as a result of the measures planned include:
- Working with ONE NorthEast, Natural England, the Forestry Commission and others to target advice and incentives;
 - Continuing the existing work with farmers and landowners to deliver advice on best practice within the Catchment Sensitive Farming initiative and agri-environment;
 - Restoring regional peatland, e.g. in the North Pennines to deliver multiple benefits within Peatscapes;
 - Delivering a number of projects with partners including Newcastle University to investigate ways of reducing runoff and diffuse pollution as well as providing flood risk benefits;
 - Working with the appropriate agencies, such as the Farming and Wildlife Advisory Group (FWAG) and the National Trust, to deliver advice to farmers on the protection of white clawed-crayfish;
 - Continuing work with farmers and Northumberland National Park to improve sheep dipping practices and facilities;
 - Working with The Tyne River Trust to develop their evidence base.

3.6. Reduced impact of point source pollution

3.6.1. Point source pollution arises from an identifiable and localised area, structure or facility, such as a discharge pipe or landfill. Through on-going regulatory work and investigative initiatives the impact of pollution from specific sources will be minimised. On-going work with water companies, the Coal Authority and industry will lead to necessary improvements to discharges from sewage collection and treatment systems, abandoned coal and non-coal mines and other discharges. This draft plan includes the actions proposed in Northumbrian Water's draft business plan for the 2009 water service price review.

3.6.2. What this means for the Northumbria River Basin District

3.6.3. Investment in various treatment schemes in recent decades has led to substantial improvements to continuous discharges and few remain to be addressed in the Northumbrian River Basin District.

3.6.4. We will work with Northumbrian Water to address treated sewage discharges at a number of locations. Between 2009 and 2014 the following is expected:

- improvements to 3 treated sewage discharges that will reduce organic pollution affecting 13 km of river;
- reduction of phosphorus inputs from 2 sewage works which contribute to excessive plant growth in 8 km of river.

3.6.5. Further benefits to accrue from improvements to intermittent sewage discharges, including improvements to discharges leading to better quality at three bathing waters and studies to identify the factors which compromise quality at two others.

3.6.6. Our current priority with the Coal Authority is prevention of pollution of the magnesian limestone aquifer under eastern County Durham. Other schemes to protect surface waters are addressed according to a prioritised list.

4. The water environment now

4.1. Pressures on the water environment

- 4.1.1. A great deal is already being done to protect and improve the water environment. However, it will take more time, effort and resources to deal with pressures of society and industry that have significantly altered and damaged the environment over the last few hundred years.
- 4.1.2. In the Summary of Significant Water Management Issues consultation document we set out the view of the Environment Agency and the liaison panel of what, together, we thought were the most important issues facing the river basin district. This work will help to prioritise and target resources through the programme of actions proposed in this draft River Basin Management Plan.
- 4.1.3. We have revised the significant issues following your comments, and grouped them under the following headings:
- invasive non-native species;
 - diffuse pollution from rural areas;
 - diffuse pollution from urban areas and transport;
 - flow problems;
 - minewaters;
 - physical modification.
- 4.1.4. Growth and regeneration in the Northumbria River Basin District is concentrated in existing towns and 70 -75% (2008-2016) of housing development in the North East is expected to be on previously developed land which is often close to water bodies. Decisions on new uses for previously developed land must ensure that new development takes into account measures needed to improve the environment.
- 4.1.5. A great deal is already being done to protect and improve the water environment, but it will take more time and effort to get it back to a 'good' status. The Environment Agency has been working with the liaison panel and partner organisations in the river basin district to identify ways of addressing these issues. The result of this work is the programme of actions proposed in this draft River Basin Management Plan.

Q1 Do you agree with the assessment of problems in the water bodies? What would you change?

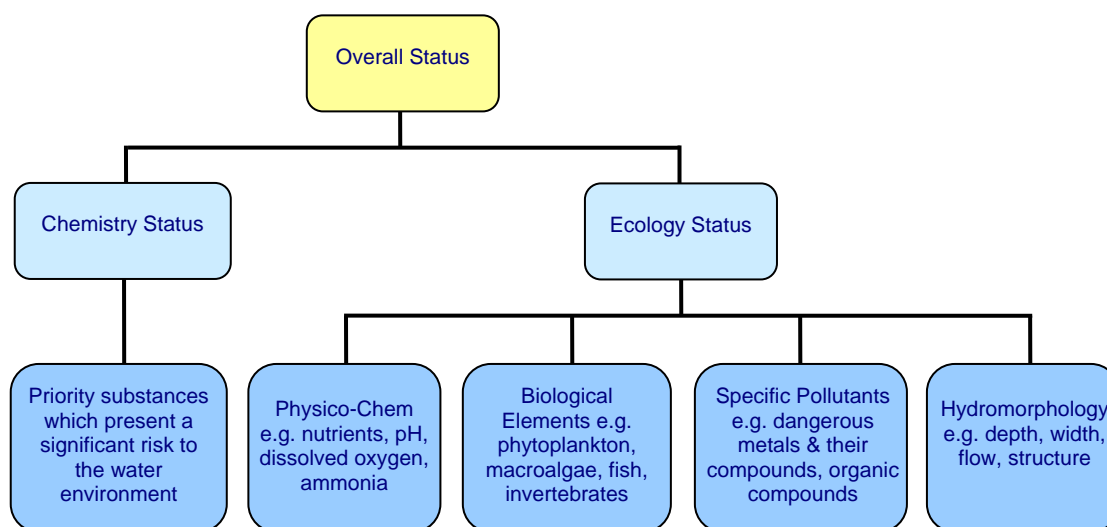
» River basin characterisation reports can be found at www.defra.gov.uk/environment/water/wfd/characterisation

» More information about pressures on the environment in the river basin district is given in Annexes G and H.

4.2. The state of the water environment

- 4.2.1. The Environment Agency's monitoring programme for river basin management concentrates on where there is likely to be a problem. The Water Framework Directive introduces a classification system that is based on a far wider range of assessments than before, which uses a principle of 'one out, all out' - the poorest individual result sets the overall classification.
- 4.2.2. This new monitoring and classification system raises the bar. It provides a more sophisticated assessment of the whole water environment to help us all understand it better, and take action where it is most needed.

Figure 2 The components of overall status



- 4.2.3. Each of the components of classification (ecological and chemical for surface waters, and quantitative and chemical for groundwater) in turn comprise of several different elements, as shown in Figure 2. For example the ecological elements include fish, invertebrates and a series of non-biological elements; the chemical component includes a range of substances that are harmful to human health and the environment. The elements are measured against a series of specific standards and targets that have been developed by the Department of Environment, Food and Rural Affairs (Defra), supported by the Water Framework Directive UK Technical Advisory Group. The spread of non-native invasive species, and how well established they have become, are also taken into account.

» The UK Technical Advisory Group website gives these standards and targets - http://www.wfduk.org/UK_Environmental_Standards

» Defra and Welsh Assembly Government completed their consultation on these standards on 19th December 2008. This consultation can be found at www.defra.gov.uk/environment/water/wfd/classification

- 4.2.4. Of the water bodies assessed to date, 42% of surface water bodies and 89% of groundwater bodies are achieving good or good potential status. This includes 29% of the total river length and 50% of the coastal and estuary water bodies.

- 4.2.5. Nationally, 17% of river length is at good status or potential now, as are 49% of coastal waters, 14% of estuaries, 30% of lakes and 42% of groundwaters.
- 4.2.6. Figure 3 to Figure 6 summarise the state of the water environment, based on those waters assessed. In the Northumbria River Basin District 49 surface waters (out of 452) have not yet been assessed, as there is not yet sufficient information about them.
- 4.2.7. At its heart, the Water Framework Directive is concerned with protecting and improving the natural health of the water environment. The “one out, all out” principle of the classification system can sometimes mask the picture of the underlying biological health of the water environment. Figure 3 and Figure 4 focus on the current classification of the ecological status and the status if based solely on the biological elements of ecological status. The natural life of watercourses can sometimes be healthy even when the supporting physico-chemical elements suggest a problem. This emphasises the importance of having confidence that there is a real problem before taking action to solve it.

Figure 3 Current ecological status and ecological potential of rivers, by length assessed, in the Northumbria River Basin District

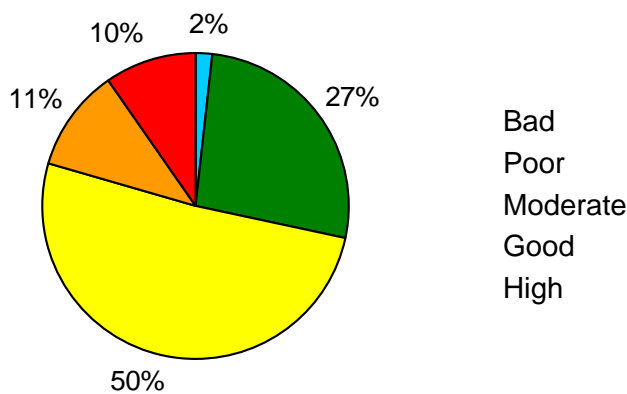


Figure 4 Current biological status of rivers, by length assessed, in the Northumbria River Basin District

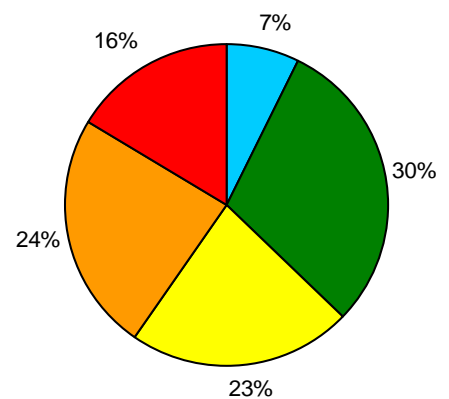


Figure 5 Current quantitative status of groundwater bodies in the Northumbria River Basin District

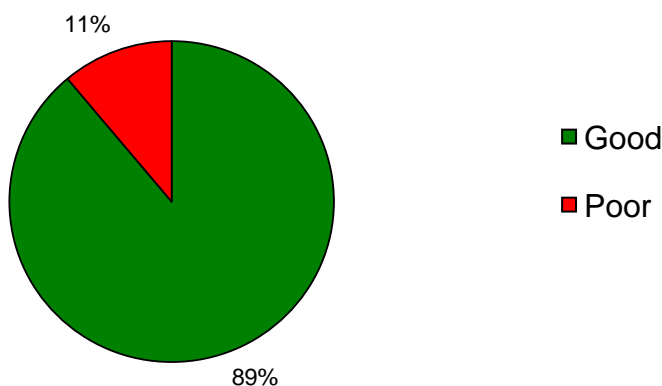
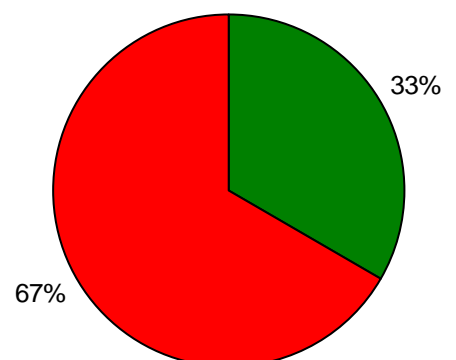


Figure 6 Current chemical status of groundwater bodies in the Northumbria River Basin District



- 4.2.8. Poor groundwater quantitative status occurs if there could be adverse impacts on wetlands or where more groundwater is taken than is recharged, for example for drinking water supply, and it is not certain that this will be replaced each year by rainfall.

- 4.2.9. Few surface waters are in a poor or bad status; the majority are at moderate status. In most cases, single pressures cause this. The most commonly failing elements are invertebrates, then phosphorus and morphology.
- 4.2.10. The current status is the classification from which the 'no deterioration in status' objective of the Water Framework Directive is measured.

» [Monitoring and classification maps, which describe the current status, are in Annex A. More detailed classification results are in Annex B.](#)

- 4.2.11. We are proposing that 5 of 443 surface water bodies in the river basin district (1% of all surface waters) are designated as artificial, and 120 (27% of all surface waters) are designated as heavily modified. We reached this view using a detailed screening process, which involved consulting interested groups and carrying out a technical review.
- 4.2.12. All the artificial and heavily modified water body designations in this report are draft and work is on-going to improve certainty in them.
- 4.2.13. We have decided that all reservoirs will be designated as Heavily Modified Water Bodies because they are in effect dammed rivers. This applies whether they are a water body in their own right due to size or associated with another water body/river.

» [The reasons for designation of artificial and heavily modified water bodies are given in Annex I.](#)

Table 1 **Water body numbers in Northumbria River Basin District**

	River	Lake and reservoir	Estuary (transitional)	Coastal	Groundwater	Total
Natural water bodies	260	3	1	5	9	278
Candidate artificial water bodies	0	5	0	0	n/a	5
Candidate heavily modified water bodies	96	17	6	1	n/a	120
Water bodies not assessed	0	48	0	1	n/a	49
Total	356	73	7	7	9	452

- 4.2.14. In addition there is 1 canal and 15 surface water transfers.
- 4.2.15. It is proposed to extend the water body network to include areas of biodiversity significance. It is also proposed to split some of the larger water bodies.

» [Details of water bodies are included in Annex J.](#)

5. The objectives for the waters in the Northumbria River Basin District

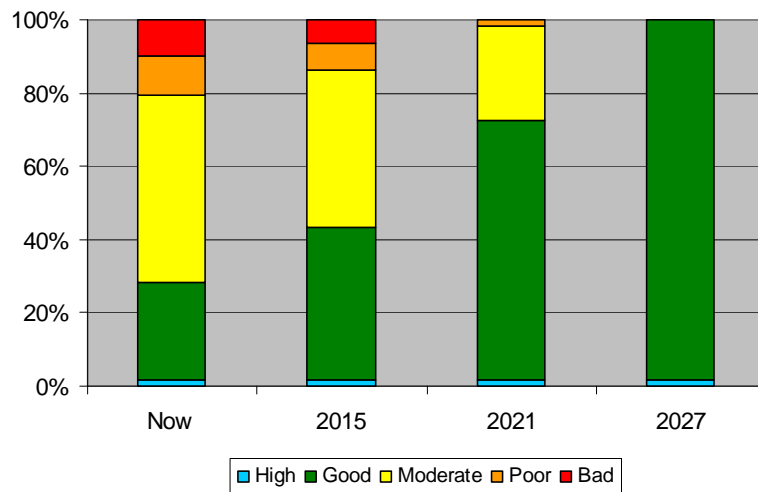
5.1. How we set objectives

- 5.1.1. The draft plan sets out where the aim is to meet good status and good potential by 2015, and where these targets cannot be met by 2015, reasons are given.
- 5.1.2. In some cases for example, actions may not be technically feasible in the short-term but can be successfully implemented over a longer period of time. Using the available resources in this way now mean that it is no longer disproportionately costly. Investigations may be needed to understand the source of problems and how to solve these. In these cases, an objective has been proposed for 2021 or 2027. The proposals in relation to these alternative objectives will be reviewed before the next plan in 2015. This will be informed by investigations and the intention to set an overall challenge target for 2021.

5.2. Targets for subsequent cycles

- 5.2.1. This draft plan sets out proposals for improving the water environment in the first river basin management cycle up to 2015. The objective of the Water Framework Directive is, wherever practical, to bring all water bodies up to good ecological status or good ecological potential (GES/GEP). Investigations to be carried out during the first cycle will help in understanding what can be achieved in later cycles.
- 5.2.2. Even with all the improvements described in this draft plan, there will still be a big gap to bridge between 2015 and 2027. To make sure that good progress is made in each cycle, targets are proposed for what should be achieved by 2021 and 2027. At this stage it is believed that the target for 2021 should halve the gap between the predicted status in 2015 and the target for 2027. The targets should also make clear that those water bodies most in need of improvement are priorities for action with no bad status water bodies left by 2027.
- 5.2.3. These proposed targets are illustrated below. Because these targets are, in effect, the nation's targets for water and wetlands, we would like to see them feature in the Government's future Public Service Agreements.
- 5.2.4. One of the benefits of setting interim targets is that it will encourage all those with a role in achieving the objectives of the Water Framework Directive to work together to identify effective future measures. The targets will be a challenge shared by all with this role.

Figure 7 Targets for subsequent cycles of the Northumbria river basin management plan



5.2.5. The aspirational target of achieving good environmental status or potential in all water bodies reflects the fact that no justification for less stringent objectives in any water body has been identified. Investigations planned during the first plan cycle may identify water bodies where less stringent objectives are the realistic approach, and the 2027 target will be firmed up accordingly.

- » Objectives for each water body are set out in Annex B. More details about alternative objectives are included in Annexes C and E.
- » Information about current status and objectives for protected areas, and actions proposed, is in Annexes B, C and D.

5.2.6. In assessing the actions that contribute to this plan, we have been through a consistent process to assess the costs and benefits, their effectiveness and their impact. Some of the actions considered for this plan are not suitable because it is not technically feasible to implement them, or it is not certain of the benefits they would bring and the cost would significantly exceed the benefits. In some cases it has not been possible to identify a partner to take the lead in funding and managing the action.

- » Information about the planning assumptions we used when assessing actions is given in Annex E.

Q2 Do you agree with the proposed objectives? What would you change?

Q3 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?

- » Detailed information on the proposed objectives, together with information on current compliance, is in Annex B.

5.2.7. Figure 8 and Figure 9 show the expected status of waters in 2015 if the proposed actions are implemented.

Figure 8 Predicted ecological status and ecological potential of rivers in 2015, by length assessed, in the Northumbria River Basin District

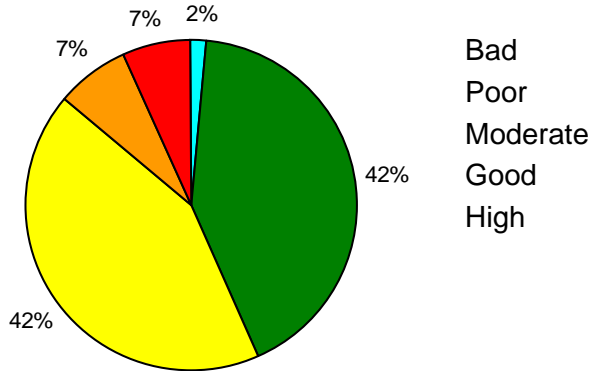
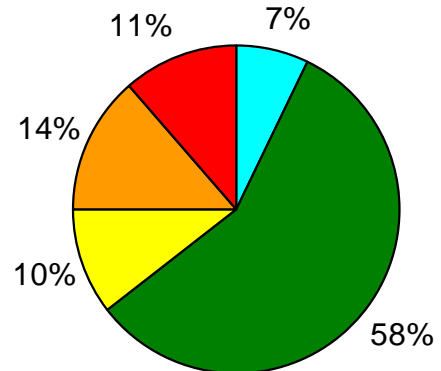


Figure 9 Predicted biological status of rivers in 2015, by length assessed, in the Northumbria River Basin District



5.2.8. Figure 10 shows the predicted status and potential for surface water bodies in 2015. In some of our salmon rivers there are uncertainties in some of the fisheries data. For this reason this data has not been included in the 'predicted outcomes for rivers in 2015' map (Figure 10). For further information please see page 9 in Annex A.

5.2.9. Figures 11 and Figure 12 show the expected quantitative and chemical status of groundwaters in 2015 if the proposed actions are implemented.

Figure 10 Predicted status and potential for surface water bodies in 2015

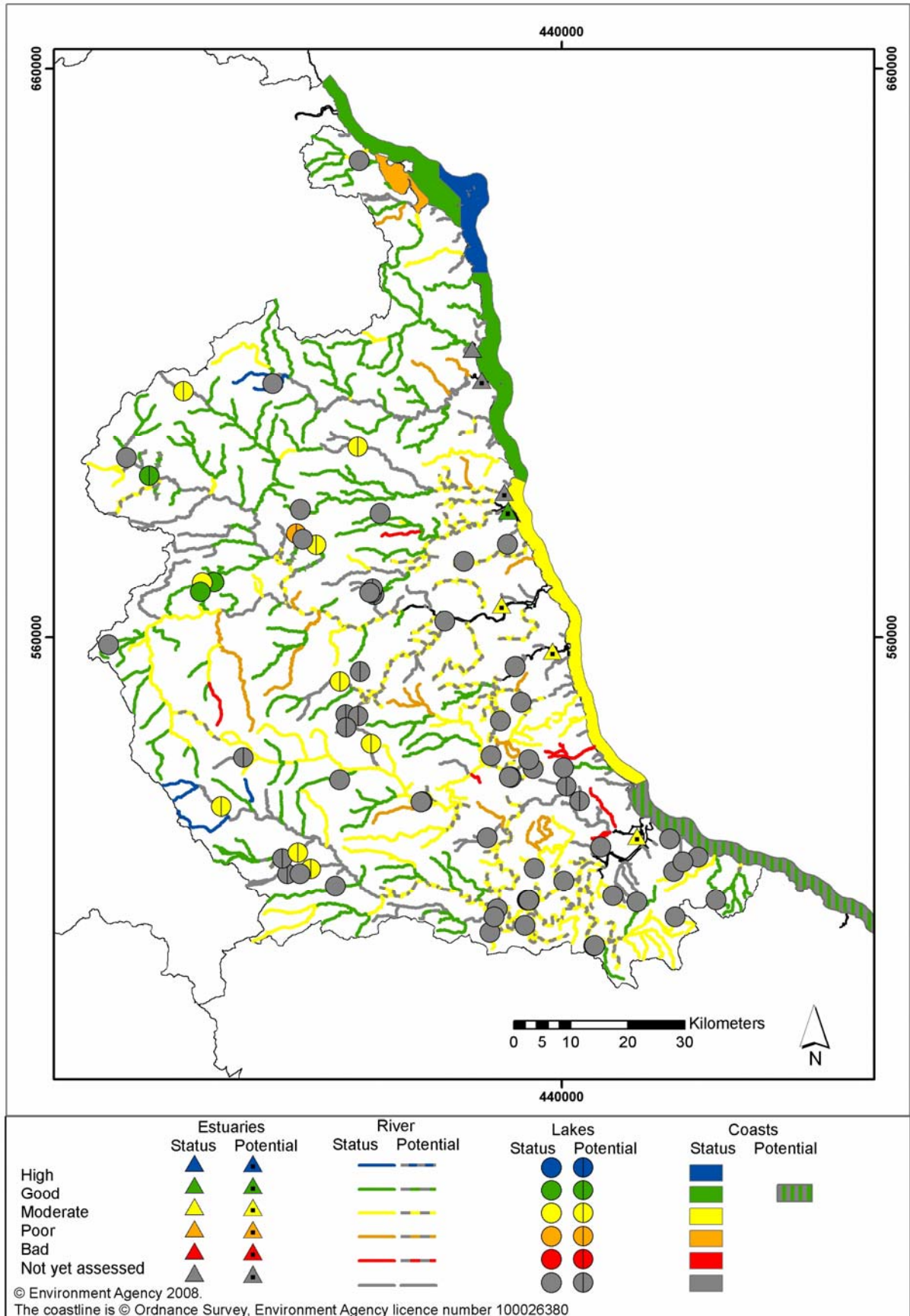


Figure 11 Predicted quantitative status for groundwater in 2015

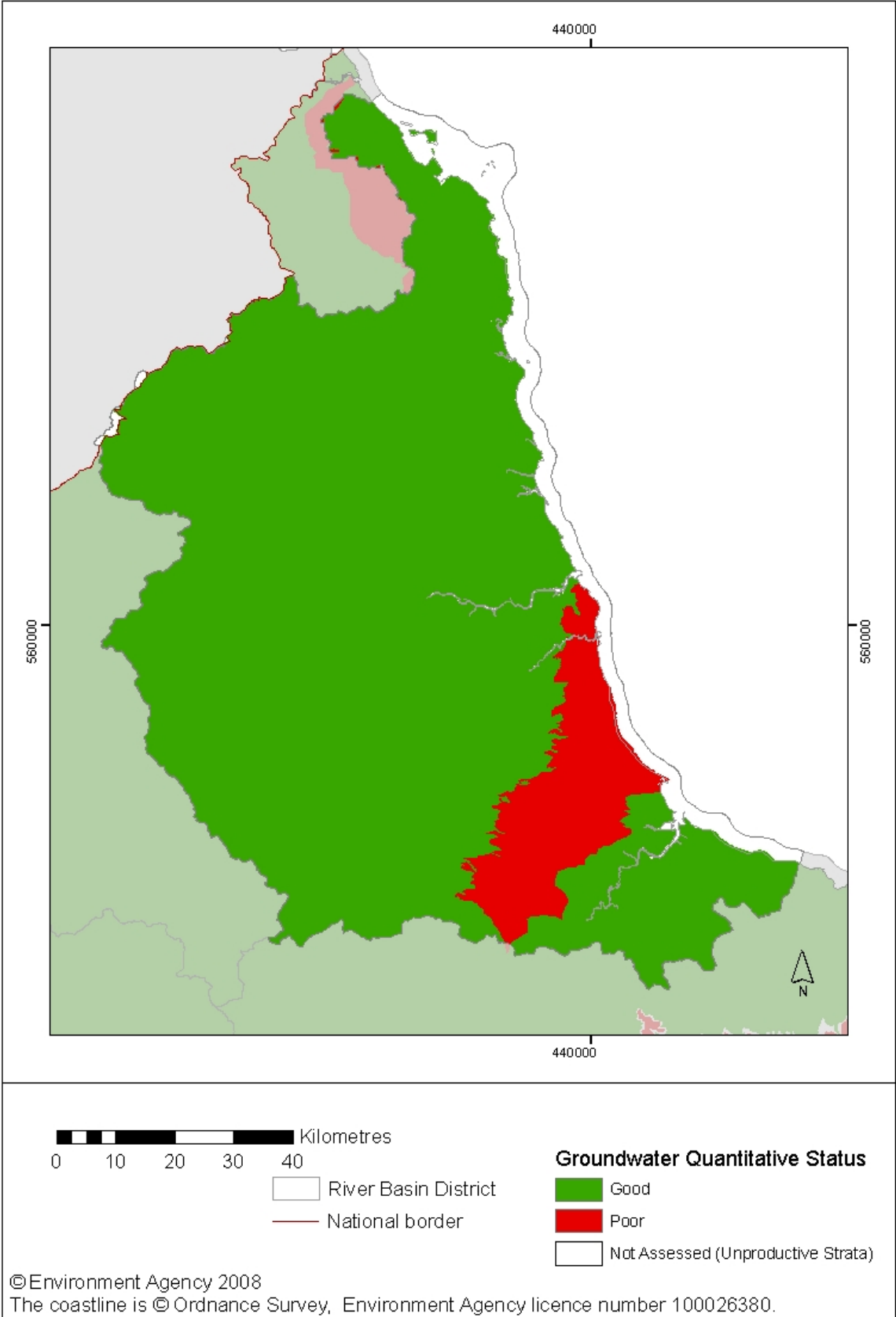
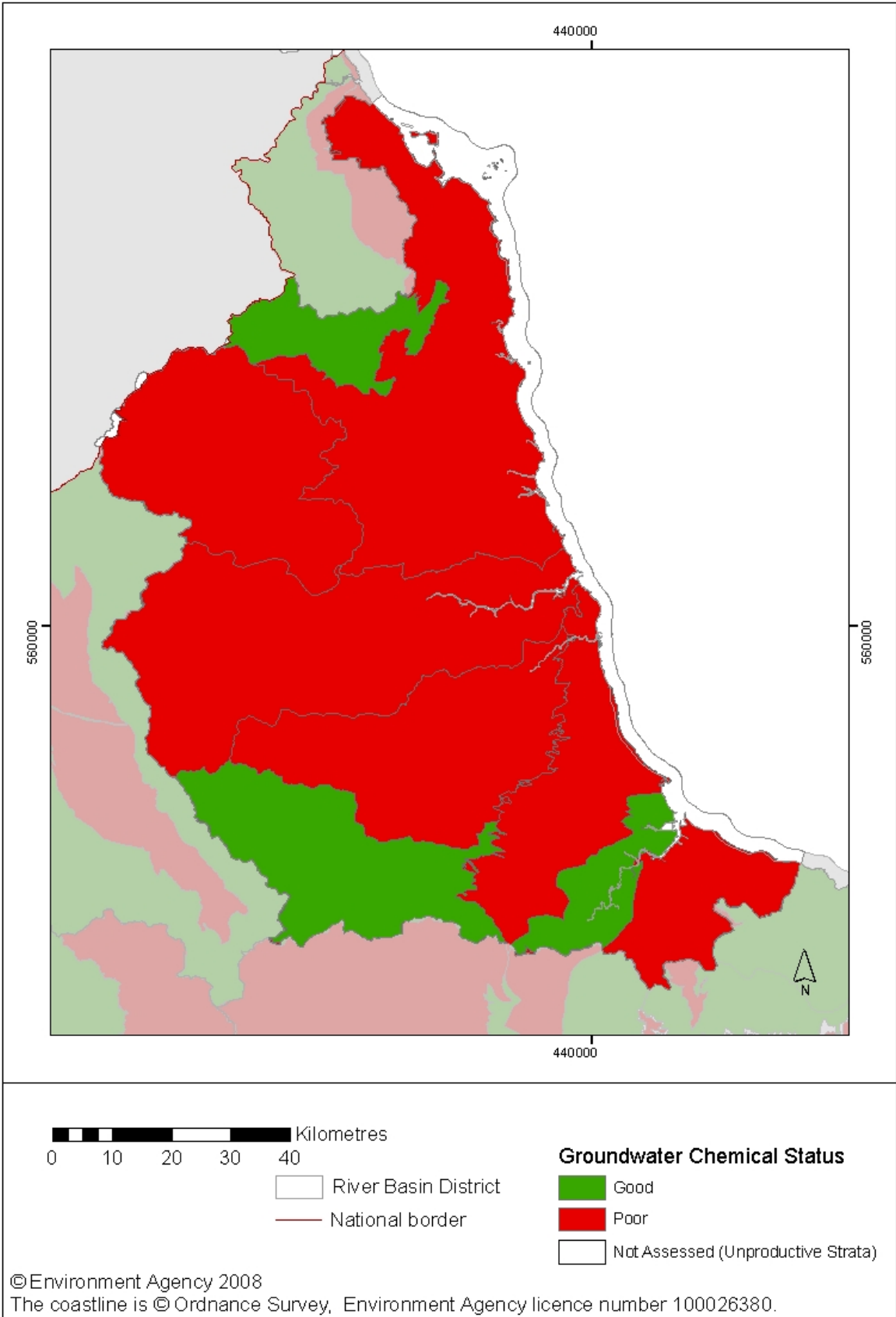


Figure 12 Predicted chemical status for groundwater bodies in 2015



6. The Northumbria River Basin District catchments in 2015

6.1. Background

6.1.1. This section summarises information about status of waters in the Northumbria River Basin District and the objectives proposed (see scenario B on page 39) on a catchment-by-catchment basis, running from north to south across the river basin district. The river basin district has been divided into four catchments.

- Northumberland Rivers
- Tyne
- Wear
- Tees

Separate sections follow for estuaries and coastal waters, and groundwater.

6.2. Northumberland Rivers

The catchments extend from south of Berwick upon Tweed in the north to the northern boundary of the River Tyne catchment in the south. The area is flanked by the Cheviots to the west and by the North Sea to the east. The Cheviot and East Northumberland area is one of the most sparsely populated in England and Wales. Several river catchments are included within this particular area including the Rivers Aln, Coquet, Wansbeck and Blyth. There are also many smaller coastal streams that drain directly in to the North Sea.

The high landscape quality of this area has been recognised by the designation of the Northumberland National Park and Northumberland Coast Areas of Outstanding Natural Beauty. Extensive areas, particularly the coast and upland mires, are also of recognised national and international importance for nature conservation. Moorland management for grouse is also an important activity.

The character of much of the landscape has resulted from agricultural practices. These activities have led to a mix of upland moor, forest, arable land used for cropping and pasture land used primarily for stock rearing. The future management of the rural landscape is largely dependent on the continuation of agriculture. Pressures from agricultural activities such as fertiliser application are a cause for concern.

Business in this particular area is focused mainly in the south east and around the main population centres of Alnwick, Morpeth and Rothbury. Urban and industrial influences, particularly past coal mining activities, are important in characterising the landscape and environmental quality of the south east of the area. Industry has, however, changed and declined in recent years from heavy coal mining-related industries to lighter industries. The principal heavy industries of the area include power generation and aluminium smelting. Opencast coal mining now dominates large tracts of land to the south and east of the area. A wind farm to provide electricity has been developed at North Blyth.

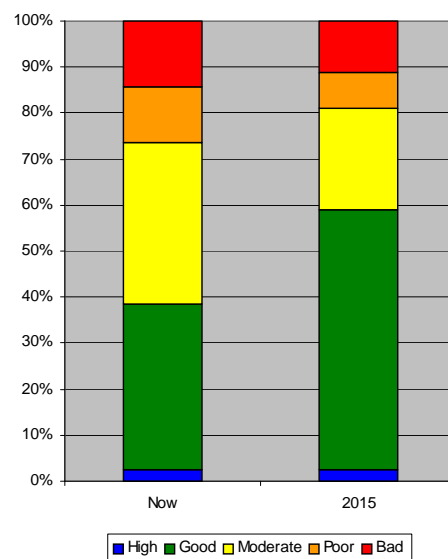
Within the last fifty years, the population of the area has steadily increased, a trend which is expected to continue. There is an uneven population distribution, with over half living in the urbanised south east which has also been identified as in need of regeneration. The main centres such as Cramlington and Blyth and Morpeth provide important services and employment for the surrounding areas and their population.

A large proportion of the proposed development should be located in Blyth Valley District (average annual net dwelling provision is 275 till 2021, total 3575).

This area has a fine heritage of historic buildings, archaeological sites and monuments and includes features of international importance. This heritage makes a significant contribution to the quality of the environment and provides an important educational and tourism resource.

The Northumberland coastline consists largely of sandy bays separated by rocky headlands, which are backed by dunes or cliffs. Holy Island is connected to the mainland just south of Berwick upon Tweed by a causeway which runs over a large expanse of sand/mud flat. The Farne Islands, south of Holy Island, are 5-10km off the coast. Both groups of islands are internationally important for their wildlife value and have a number of designations affording them protection.

Figure 13 Progress towards achieving good status and potential in surface water bodies in the Northumberland Rivers catchment (as a proportion of river length)



The area contains a wide diversity of habitats from coastal beaches to high quality river environments. Due to the rural nature of the catchment the water quality tends to be very good supporting ecology and a high conservation value. Salmon, sea trout and wild brown trout are present throughout many of the river systems. There are a number of designated sites and recordings of UK BAP species such as otter, river jelly lichen and nationally important populations of native crayfish.

There are a number of ports and marinas along the coast, at Seahouses, Craster, Amble, and Blyth, which generate considerable marine traffic including fishing vessels, cargo ships and recreational private craft. The trade via these ports is important to the area's economy.

The pristine condition of most of the Cheviot and East Northumberland area makes it an attractive area in which to live as well as providing great appeal to visitors.

Currently 39% of surface water bodies in this catchment are achieving either good or potentially good status. We are proposing that by 2015, 59% compliance will be achieved, and this will have improved to 84% by 2027. To date 20% of water bodies have not been assessed.

6.3. Tyne

The Rivers North Tyne and South Tyne rise in the Cheviot and North Pennine hills respectively. They are joined by the Rivers Rede, East Allen and West Allen, before converging at Warden. From Warden the Tyne flows eastward through Hexham and Corbridge towards the large Tyneside conurbation which includes Newcastle, Gateshead, North Tyneside and South Tyneside.

The vast majority of the area's population live in the lower Tyne valley. Within the last fifty years there has been a steady increase in the population to an estimated 910,000, a trend which is expected to continue. The population is unevenly distributed with the majority living in the urbanised east and coastal strip. Sizable housing and industrial developments on the outskirts of the main urban areas will continue to put pressure on the water environment, urban run off and siltation among them.

Major development is planned to the east of the catchment, particularly in Newcastle–upon-Tyne (880 annual average net additions to dwelling stock up to 2021, total 11,410). Central parts of the Tyne River Corridor are identified as a priority for regeneration within the Regional Spatial Strategy. There are pressures from cumulative impacts of this planned growth in the catchment and development measures will be required so that there is good ecological status and no deterioration of its water bodies.

Development will be at a much smaller scale throughout the rest of the catchment and will be designed to strengthen the role of rural service centres (e.g. Hexham) and to sustain settlements and a vibrant rural economy.

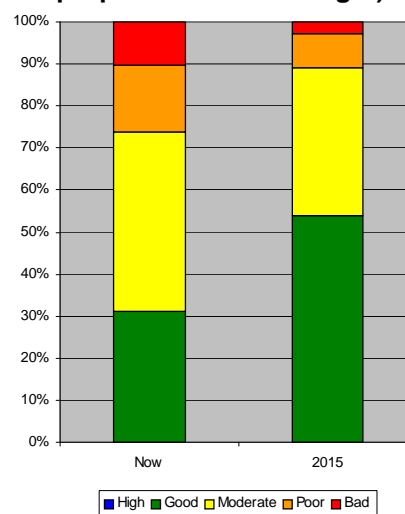
Kielder Forest is highlighted as having significant potential for renewable wind energy development on a regionally strategic scale.

Some two thirds of the land area is agricultural and this has shaped the character of the landscape. Agricultural activities have led to a mix of upland moor, forest, arable land and pasture. The high landscape quality of the area has been recognised by the designation of the Northumberland National Park which makes up the majority of the northern Tyne area. Other areas are of recognised national importance for nature conservation with a wide variety of habitats ranging from upland bog and heath land to river shingle sites. The Tyne area also has a fine heritage of historic buildings, archaeological sites and monuments, including Hadrian's Wall which is a World Heritage Site. This heritage provides an important educational and tourism resource.

Business is focused mainly to the east of the Tyne area and around the population centres of Tyneside. The traditional industries were heavy engineering, ship building and coal mining which had their effect on the landscape and environmental quality of the east of the area. These industries declined dramatically during the 1970s and 1980s. Recently there has been an increase in the activity on the River Tyne with an upsurge in ship repair and offshore platform construction and decommissioning. The Port of Tyne is still a major handling facility, one of the largest in the UK. Chemical production continues and there has been a recent major investment in the microelectronics sector. Within the small business sector there has been a general increase in service industries.

One of the main features in the north west of the catchment is Kielder Water one of Northern Europe's largest man-made lakes which is on the River North Tyne. Releases from Kielder Water

Figure 14 Planned progress towards achieving good status and potential in surface water bodies in the Tyne catchment (as a proportion of river length)



maintain the flows and support major water supply abstractions from the River Tyne and when required can also facilitate the transfer of water to support abstraction from the Rivers Wear and Tees which are separate catchments.

Many of the rivers have a high conservation and ecological value with water quality supporting salmon, sea and brown trout, as well as coarse fish. The Tyne is one of the best salmon rivers in England. Populations of otters and pearl mussels are also recorded in the catchment.

There has been a marked improvement in the water quality of the Tyne Estuary, mostly due to the Tyneside Sewage Interceptor Scheme. Some of the more urban rivers however (e.g. River Team) have poor water quality and impoverished ecology and fish stocks. This is mainly due to discharges from industry, sewage treatment works, old industrial sites, minewaters and contaminated land.

Currently 24% of surface water bodies in this catchment are achieving either good status or good potential. We are proposing that by 2015, 50% compliance will be achieved, and this will have improved to 73% by 2027. To date 23% of water bodies have not been assessed.

6.4. Wear

The Wear catchment includes the whole of the River Wear, from Burnhope Moor in the Pennines to the estuary which flows through Sunderland and the coastal stream catchments as far south as Castle Eden Dene.

The population is concentrated in the eastern half of the area which includes Durham City, Sunderland City, Washington, Chester le Street and Bishop Auckland. In the upper catchment, a number of small rural towns are situated along the river corridor such as Stanhope and Wolsingham. Major development is planned within Sunderland. Durham City will have more limited development that reflects its unique character and its role as a major service and employment centre. According to the Regional Spatial Strategy, other towns within the catchment- such as Peterlee, Chester-le-Street, Seaham and Crook are expected to have some development for sustainable growth. However an area in South and East Durham (Easington, Sedgefield and Wear Valley Districts) has been given Growth Point status by national government. More than 1200 new dwellings are planned each year up to 2016 in this area.

The character of the east part of the area is dominated by the presence of the coal seam in the underlying geology. Communities grew up and prospered by mining coal across the area resulting in the scattered pattern of small settlements. Recently there has been a change from deep mining activities to opencast mining which extracts coal from near the surface. Since the cessation of deep mining activities, a change in the industrial output from the area to electronic and other light industry has occurred.

The upper Wear is largely rural and dominated by agriculture. The moors are used mainly for sheep farming and for rearing grouse and other game birds. They also have a diverse range of features of high conservation value. Weardale has many small villages, farms and woodlands forming part of the North Pennines Area of Outstanding Natural Beauty (AONB). Numerous designations such as Sites of Special Scientific Importance (SSSI) are found within the Catchment.

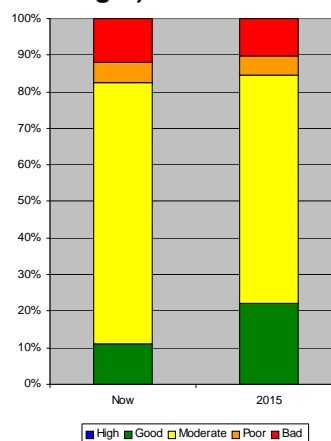
Along the coast there are two ports, Sunderland and Seaham, which deal with commercial traffic including fishing vessels and cargo ships as well as recreational users. The coast was dominated by the coal mining industry, with several deep mines extending out under the sea bed over significant distances. All these mines have closed, and the area is being developed as a recreational and tourist resource. There has been a major initiative to clean up the beaches (from coal spoil) in the last few years, and a coastal footpath is being created along its length.

Within the area are a number of features of historical interest including buildings, archaeological sites, and monuments. Durham City is of particular note, as the cathedral and castle surrounded by the River Wear is designated as a World Heritage site.

The fish populations of the River Wear and its tributaries are generally of a high quality. Salmon and trout are distributed throughout the catchment and dominate in the upper reaches, whilst coarse fish are found in the lower and middle reaches. The catchment supports a wide variety of water based activities including angling, canoeing and wind surfing. There are also many good walking and cycling trails and waterside venues for camping and picnicking.

Currently 11% of surface water bodies in this catchment are achieving either good status or good potential. We are proposing that by 2015, 22% compliance will be achieved, and this will have improved to 78% by 2027. To date 10% of water bodies have not been assessed.

Figure 15 Progress towards achieving good status and potential in surface water bodies in the Wear catchment (as a proportion of river length)



6.5. Tees

The River Tees rises on the eastern slopes of Cross Fell in the Pennines and flows eastwards on to the North Sea. Major tributaries of the River Tees are the Rivers Lune, Balder, Greta, Skerne and Leven.

From its source in the high grouse moors of the Pennines the river flows over open and sparsely populated moor land to Cow Green Reservoir. From the reservoir it flows east-south-east through Teesdale with its farms and pastures towards Barnard Castle and then turns to flow generally eastwards towards Darlington. From this point the river widens and flows over an extensive plain towards the heavily industrialised River Tees Estuary, with its large areas of land reclaimed from salt marshes and mudflats. Flows are accommodated by numerous reservoirs in the upper Tees that tend to moderate the influence of flood waters. The reservoirs through compensation releases maintain higher than otherwise flow in the middle and lower Tees during dry periods. Surface water quality is generally good although certain stretches of poor and bad quality still exist.

Conservation value of the catchment is high with 42 Sites of Special Scientific Interest covering 16% of the land area. These complement other officially recognised areas of conservation and landscape value, such as the North Pennine Moors SPA and SAC and the Teesmouth and Cleveland Coast SPA, SAC and RAMSAR site, and areas falling outside particular designations but of value to the catchment as a whole. There are two major waterfalls on the River Tees, at High Force and Cauldron Snout. No migratory fish can pass High Force.

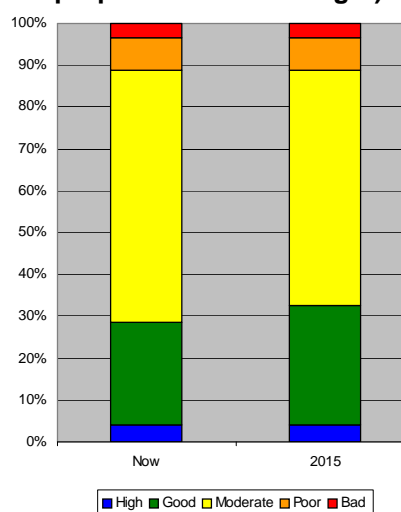
Several centres of population lie within the catchment including Middleton-in-Teesdale, Barnard Castle, Hartlepool, Darlington, Newton Aycliffe, Yarm and the conglomeration of Middlesbrough, Thornaby and Stockton. The catchment is crossed by several important East Coast and trans-Pennine road and rail links and the port of Teesside is a major industrial marine transport link.

The lower section of the River Tees, and its estuary are predominantly urban and industrial in character. Although traditional industry has declined in recent years, locally it is still dominated by chemical and steel making where comparatively large quantities of industrial waste are produced. Teesside's industry is notably one of the biggest sources of special waste in the country and the area has the greatest concentration of authorised processes under Integrated Pollution Control in England.

The focus of the development in the Tees catchment will be the Tees Valley conurbation comprising of Stockton, Middlesbrough, Hartlepool, Darlington and Redcar & Cleveland. The average annual net addition to the dwelling stock up to 2021 is identified in the RSS as 2100 (total of 27,300 between 2009 - 2021). Around 25% of the conurbation's planned development is expected to fall within Stockton-on-Tees. Development elsewhere, at Barnard Castle or Newton Aycliffe, will be more limited and for regeneration and to ensure sustainable rural service centres.

There are high pressures from cumulative impacts of planned growth and development measures will be required so that there is good ecological status and no deterioration of its water bodies.

Figure 16 Planned progress towards achieving good status and potential in surface water bodies in the Tees catchment (as a proportion of river length)



The River Tees is a high quality and nationally renowned coarse fishery with a wide diversity of fish species present, including Pike, Bream, Roach and Chub in its lower reaches. Its middle and upper reaches support stocks of Grayling and wild brown trout. Salmon and sea trout are now returning to the River Tees and although their numbers are currently low both species are increasing.

Uses and activities within the catchment include surface water abstraction, ground water supply and protection, effluent disposal, solid waste disposal, agriculture and forestry, conservation, archaeology and heritage, amenity and recreation, navigation, fisheries, angling and commercial fishing, mineral extraction and mining, flood defence and development.

Currently 27% of surface water bodies in this catchment are achieving either good status or good potential. We are proposing that by 2015, 31% compliance will be achieved, and this will have improved to 68% by 2027. To date 24% of water bodies have not been assessed.

6.6. Progress towards achieving good ecological status and good ecological potential in estuaries and coastal waters

The Northumbria Basin has 170 kilometres of coastline, much of which is designated as Special Protected Area under the Birds Directive, 25 square kilometres of estuaries and 34 designated bathing waters as well as many important marine species and habitats.

The Northumbria Basin has three main estuaries, the Tyne, Wear and Tees which are vital to the region's economy, particularly their contribution to the tourism and leisure industry and the ports, harbours, shipping and associated industries they support. The main pressures on Northumbria Basin estuaries are pollution from industrial discharges, nutrient and microbiological contamination from run-off and sewage.

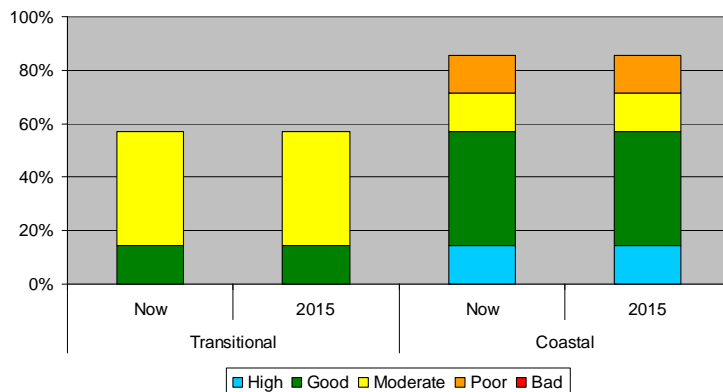
Draft classifications show that the main Northumbria Basin estuaries are falling short of good potential mainly because of the morphological conditions which will need further investigation. In contrast the majority of the minor estuaries and coastal waterbodies meet good status, with the Farne Islands achieving high status. The exceptions are the Tyne and Wear and the Holy Island and Budle Bay coastal waterbodies which are moderate and poor respectively.

Tourism is a vital industry along the Northumbria Basin coast. Bathing water quality dropped slightly in 2008 after a very wet summer. The high summer rainfall caused an increase in storm overflows from sewers, a rise in diffuse pollution and run-off from farmland, which impacted on bathing waters. Delivering compliance with the revised bathing waters directive is a high priority for this plan.

By 2015, significant progress in resolving these issues will be made as a result of the measures laid out in this plan. The Environment Agency is also working with partners to develop and deliver a habitat creation programme to safeguard the diverse estuarine and coastal habitats.

Currently 50% of estuarine (transitional) and coastal water bodies in the Northumbria River Basin District are achieving either good status or good potential. We are proposing that by 2015, 50% compliance will be achieved, and this will have improved to 100% by 2027.

Figure 17 Progress towards achieving good status and potential in estuarine and coastal water bodies in the Northumbria River Basin District.



6.7. Progress towards achieving good status in groundwaters

The Northumbria River Basin district is subdivided into four catchments and nine groundwater bodies. The pressures and significant risks identified within the district are abstraction, mining and mine waters, and chemicals for example nitrates, sulphates, chloride, chloroform, lead, copper and zinc.

Mine water is the groundwater, which has naturally entered the mine workings. During operation the mine water was drained or pumped to keep it away from working areas. After closure pumping ceases, the mine workings flood and water levels recover until they reach a point where they can drain freely to the surface. This can also result in contamination of ground waters. Waters leaching from these long abandoned mines can be quite acidic and be contaminated with iron, zinc, lead, cadmium, manganese, sulphate and copper. Such mine water related pollution can have significant ecological impacts, although in some places with a very long history of contamination, wildlife has adapted to the pollution to an extent.

The classification has identified a number of issues that need addressing. Consequently a programme of measures has been developed to aim to manage these issues and thus in doing this will be working towards achieving good status.

The Northumberland Devonian and Lower Carboniferous, the Tees Sherwood Sandstone and the Tees Millstone Grit and Carboniferous Limestone groundwater bodies have been classified as good status and at low risk for quality and good status and probably not at risk for quantity.

The Northumberland Carboniferous Limestone and Coal Measures, the Tees and Mercia Mudstone and the Tyne Carboniferous Limestone groundwater bodies both fail to meet good status for mining impact on surface water only. Whilst the Northumberland Carboniferous Limestone and Coal Measures groundwater body is potentially at risk from abstraction the classification identifies that all the bodies are at good status for all other pressures.

There is one pressure for which the Tyne Carboniferous Limestone groundwater body is 'probably at risk'. This pressure is from diffuse pollution, for example, phosphates and the site of concern is the Kielderhead and Emblehope Moors (SSSI), which is a groundwater dependent terrestrial ecosystem (GWDTE). There is very limited groundwater quality data for phosphates.

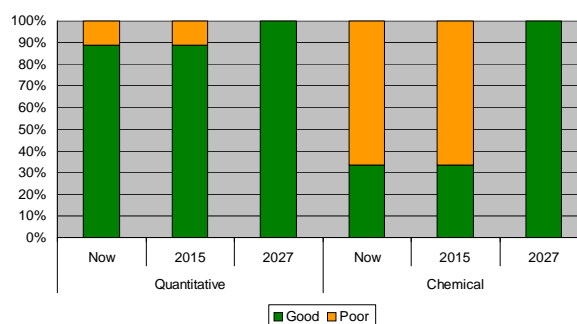
The Tyne Carboniferous Limestone and Coal Measures and the Wear Coal Measures groundwater bodies fail to meet good status for general chemical assessment and impact on surface water. The mining in these areas is more widespread and diverse comprising both metal mines (mainly lead and zinc), in the upper reaches of the Tyne, and coal mines throughout the catchment.

The Magnesian Limestone groundwater body to the east of the district has issues with respect to both quality and quantity. The particular issues are nitrates, mine water pollution in the Chilton and Mainsforth area, and potential abstraction pressures throughout the area. A rising trend in nitrate concentration in the groundwater body has been identified and will be addressed and mitigated by the Nitrate Pollution Prevention Regulations 2008.

The Magnesian Limestone is a principal aquifer and provides potable water which is abstracted by Northumbrian Water Ltd and Hartlepool Water. This aquifer is the sole supply of potable water for Hartlepool and it is critical that the resource is managed maintaining the balance between abstractors and the environment. Currently this groundwater body is at poor status and at risk for quantitative purposes.

Currently 89% (quantitative) of groundwaters are achieving either good status or good potential, whilst 33% (chemical) are achieving either good status or good potential. We are proposing that by 2015, 89% compliance will be achieved, and 100% achieved by 2027 for both parameters.

Figure 18 Progress towards achieving good status (quantity) in groundwater bodies in the Northumbria River Basin District.



7. Summary sector action plan

7.1. Background

- 7.1.1. This section summarises the impact assessment for this plan and, with the following tables highlights the key contributions from those who we will work with to deliver the actions in this plan.

7.2. Impact assessment

- 7.2.1. A separate draft impact assessment shows the costs and benefits of implementing this plan. It sets out the impacts of different actions, as well as an analysis of the impacts on different sectors. It examines scenario A and the preferred scenario B as laid out in this draft plan, along with scenario C, which is more ambitious and more costly. The results of the impact assessment are briefly noted in this section.
- 7.2.2. The impact assessment is limited by both the assumptions on improvements in class, and the availability of data, both environmental and economic. However, they are a good basis for discussion during the consultation period.
- 7.2.3. We will produce a final impact assessment and this will accompany the river basin management plan when we submit this to Ministers for their approval. Ministers will use the impact assessment to help them decide whether or not to approve the river basin management plan, or whether to request us to modify it.

» We have published a draft impact assessment for consultation at the same time as the consultation on this Draft River Basin Management Plan. Copies are available through our website at www.environment-agency.gov.uk/wfd or from the contact given at the end of this document.

7.3. Scenarios and what they mean in the Draft River Basin Management Plan

7.3.1. What is already happening and what will happen - Scenario A

- 7.3.2. Some of the actions in the plan are already happening or will happen. Scenario A reflects the actions required by other EU water directives, for example the Nitrates Directive, which the Water Framework Directive describes as basic measures. It also includes some additional measures already put in place to implement the Water Framework Directive, for example the Catchment Sensitive Farming Delivery Initiative, which is currently operating in 40 catchments across England. These actions form a significant programme of work which provides the foundation to the Draft River Basin Management Plan. We have already consulted on these measures when they were introduced and so are listing them here for information only.
- 7.3.3. The Scenario A costs presented below are an estimate. Whilst costs were not easily available for all Scenario A measures, we do have data for the most costly measures. In the Northumbria River Basin District almost all of the Scenario A costs are met by the water industry, with approximately 70% of these costs arising from PR04 and 30% from PR09. A small percentage of costs are also met by the agricultural and rural land management sectors, as a result of complying with the NVZ action plan.
- 7.3.4. This expenditure is also delivering significant benefits. Our best estimate puts this at £7.9 million per year. These monetised benefits only value the public's willingness to pay for surface water improvements. There are many other benefits which have not been monetised, some of which are listed below.

7.3.5. Costs

Average Annual Undiscounted Costs (£m)	Total PV (£m)	% of PV
5.6	477.2	Water Industry (96.0%) Agricultural and Rural Land Management (3.0%) Environment Agency (1.0%)

7.3.6. Benefits

Average Annual Undiscounted Benefits (£m)	Total PV (£m)	Other benefits not expressed in monetary terms include:
7.9	153.9	<ol style="list-style-type: none"> 1. Reduced operation costs to water companies due to improved water quality, in particular reduced concentrations of nitrate and pesticides; 2. Protection and enhancement of material assets due to reduced alien species pressures, for example zebra mussels which attach to infrastructure in large numbers; 3. Human health benefits due to improvements in water quality of recreational water bodies; 4. Reduced quantities of waste sent to landfill due to revised dredging techniques; and 5. Reduced long-term costs of coastal defence due to measures which encourage natural coastal erosion.

7.3.7. The main reason why the Scenario A costs are greater than the benefits is because these other non-monetised benefits have not been included.

7.3.8. Additional actions that will happen if this plan is approved - Scenario B

7.3.9. In addition to the actions in scenario A, we are proposing actions that we believe should happen and which we believe will bring about important environmental improvements. They fall into two categories: new actions that rely on national decisions and legislation, but can be implemented according to priorities identified at the river basin district level; and new actions that are local and rely on initiatives that have been proposed in the Northumbria River Basin District. Scenario B sets out the actions we are proposing in this plan.

7.3.10. The scope of the new actions that rely on national decisions and legislation was determined through a series of public consultations on new measures and mechanisms, and the preliminary cost effective analysis exercise undertaken by the Department for Environment Food and Rural Affairs (Defra) and the Welsh Assembly Government. These new actions were identified in statutory guidance to the Environment Agency, and included in Defra's overall impact assessment for the Water Framework Directive. The way in which these new actions have been applied is described in Annex E.

7.3.11. Delivering Scenario B implies additional costs, over Scenario A, for a variety of sectors. The three main sectors bearing these additional costs are the water industry, the Environment Agency and Industry, Manufacturing and other Business. This expenditure is also delivering significant benefits. Our best estimate puts this at £2.0 million per year, of which 34% relates to cost savings from investigations and 66% relates to the public's willingness to pay for surface water improvements.

7.3.12. Costs

Average Annual Undiscounted Costs (£m)	Total PV (£m)	% of PV
3.0	65.6	Water Industry (85.7%) Environment Agency (9.8%) Industry, Manufacturing and other Business (1.7%)

7.3.13. Benefits

Average Annual Undiscounted Benefits (£m)	Total PV (£m)	Other benefits not expressed in monetary terms include:
2.0	31.9	The other benefits will include all of the benefits expressed under Scenario A. These benefits will be greater in magnitude and will occur in more places.

7.3.14. The monetised benefits for Scenario B are also less than the costs. Again, this is because we have not been able to monetise all of the benefits that Scenario B provides.

7.3.15. Actions that could happen if we had more certainty they would be proportionate and feasible - Scenario C

7.3.16. There are further actions which, if implemented, could lead to even greater environmental protection and improvement. However, it is necessary to have a better understanding of how to implement these actions, or how effective they will be, to be sure that they are feasible and not disproportionately costly. Implementing these actions may have wider impacts on the environment or society. We would like to know if there is any additional information you can supply that will help justify including scenario C actions in the River Basin Management Plan.

7.3.17. Delivering Scenario C implies additional costs over Scenarios A and B. These additional costs mainly fall on the Environment Agency. This expenditure is also delivering benefits. Our best estimate puts this at £0.1 million per year, all of which is through cost savings from investigations.

7.3.18. Costs

Average Annual Undiscounted Costs (£m)	Total PV (£m)	% of PV
0.2	4.6	Environment Agency (94.1%) Angling and Conservation (2.2%)

7.3.19. Benefits

Average Annual Undiscounted Benefits (£m)	Total PV (£m)	Other benefits not expressed in monetary terms include:
0.1	0.3	The other benefits will include all of the benefits expressed in Scenario A above. Compared to Scenario B, these benefits will be greater in magnitude and will occur in more places.

7.3.20. In addition to the specific scenario C measures mentioned in this plan further work will take place during the consultation period to identify additional actions that are worthwhile, including water protection zones, and actions to: improve morphological condition (specifically barriers to fish movements); control the spread of invasive non-native

species; investigate ways to deal with pollution from non-coal mines; address pollution from forestry activities; and manage diffuse pollution.

Q4 We have followed a process to assess (appraise) the actions. This process is described in detail in annex E. Do you agree with the how we have done this?

- » Information about the principles for each scenario can be found in annex E.

- » Information about the actions under each of the scenarios, grouped according to the sectors that will be responsible for delivering them is in annex C, and annex D for Natura 2000.

- » Information about the actions under scenario A and B, grouped by catchments, is included in annex B.

- » Information about the actions associated with hydromorphology can be found in Annex C.

8. Summary of key contributions from different sectors

8.1. Background

8.1.1. The tables below set out the key actions that the sectors will be expected to lead on, or where they will be the main partner.

8.2. Agriculture and rural land management

	What this does	Where	When
What is already happening and what will happen - Scenario A			
Implement Rural Development Programmes agri-environment schemes for England & Wales	Provide incentives for resource protection though environmentally sensitive farming practices. Helps to achieve WFD priorities by reducing pollution from agriculture	Basic entry schemes - nationally; higher tiers - targeted areas	Ongoing
Implement and enforce cross-compliance (inc. Sludge Directive, SSAFO, and Nitrates Directive requirements)	Helps to achieve WFD priorities by reducing pollution from agriculture, at farms receiving subsidies	Nationally	Ongoing
Enforcement of existing Nitrate Vulnerable Zone Action Plan (Nitrate Pollution Prevention Regulations 2008)	Helps to achieve WFD priorities by reducing pollution from agriculture and complies with protected area objectives	in Nitrate Vulnerable Zones	Ongoing
Promote efficient and responsible use of water	Awareness campaign		
Temporary suspension of use of sheep dip containing cypermethrin	Helps to prevent and limit inputs of pollutants to groundwater	Nationally	Ongoing
Compliance with best practice on fertiliser use	Limits pollution from nutrients and reduces incidence of eutrophication; limits entry into waters of cadmium	Nationally	Ongoing
Marketing and use restrictions for specific substances e.g. isoproturon	Restricts use of priority substances, priority hazardous substances or specific pollutants within agriculture	Across EU	Ongoing
Catchment Sensitive Farming, including advice to farmers on best practice and small grants for capital investment	Helps to achieve WFD priorities by reducing pollution from agriculture	Lindisfarne coastal area	Ongoing
Existing River Basin District (RBD) Partnership Projects such as Peatscapes, work with Tyne Rivers Trust, Northumberland National Park and FWAG and National Trust	Restoring and reducing erosion from peat bogs, building the evidence base, improving sheep dipping practice and increasing awareness of the need to protect key BAP species.	North Pennines AONB, River Tyne, River Wansbeck	
Additional actions that will happen if this plan is approved - Scenario B			
Improve compliance with code of practice on protection of groundwater from sheep dip	Helps to prevent and limit inputs of pollutants to groundwater	Nationally	2015
Enforcement of revised Nitrate Vulnerable Zone Action Plan	Helps to achieve WFD priorities by reducing pollution from agriculture and complies with protected area objectives	New Nitrate Vulnerable Zones	From 2008
New RBD Partnership Projects thought to happen e.g. Regional Resource Protection Group	Key partners look at agreeing priorities for action within the river basin district and link with Agri-environment schemes and advice delivery e.g. CSF	RBD	2015

Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Where appropriate, and subject to local consultation, designate a limited number of Water Protection Zones (WPZs) from 2009 and apply appropriate actions within them to control high risk activities. Further WPZs may be designated, subject to evidence and local consultation, from 2012	Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits	Initially around 8 WPZs in locations to be decided across England & possibly Wales	from 2009 with possibility of further WPZs from 2012
Promote best practice for use and disposal, including treatment, of spent sheep dip	Helps to prevent and limit inputs of pollutants to groundwater and surface water <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Nationally	2015
Investigate discharges from farm dumps and appraise options for action	Helps to prevent and limit inputs of pollutants to groundwater and surface water <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Surface and Groundwaters	2015
Enhanced Pesticide Voluntary Initiative (VI)	Enhanced number of VI catchments <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Relevant VI catchments	2015

8.3. Angling, fisheries and conservation

Action	What this does	Where	When
What is already happening and what will happen - Scenario A			
Salmon Action Plans	Sets out what needs to be done to support and restore salmon populations.	River Coquet, River Tyne, River Wear and River Tees	2015
Additional actions that will happen if this plan is approved - Scenario B			
Eel Management Plans	Reduce Excess Exploitation of Eels		
Investigations to identify key barriers to fish movement and propose creation of fish passes or removal of weirs as well as other techniques to encourage fish movement.	Allow fish movement	Across the Northumbria RBD.	2015
River Restoration Projects	Reconnect River Team with its floodplain	River Team	2015
Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Creation of tree and woodland buffers adjacent to water courses	Improves water quality and habitats <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Tyne Rivers	2015

8.4. Central Government

Action (Lead)	What this does	Where	When
What is already happening and what will happen – Scenario A			
Pesticides Safety Directorate Research into amenity use of pesticides	Provide information to protect groundwaters		2015
Additional actions that will happen if this plan is approved – Scenario B			
Agri-environment schemes targeting will include diffuse pollution as a targeting driver (Natural England)	Water bodies at most risk of diffuse pollution do not deteriorate, and improve in status	Priority waters for resource protection	2015
Disseminate and develop species identification guides and train key groups	Improve early detection of invasive non - native species	River basin district	2015

(Natural England)			
New or enhanced local education campaigns to prevent non-native species introduction (Natural England)	Help reduce future problems from invasive non-native species	River basin district	2015
Remove invasive non-native species from sites that are at risk of becoming a source, where feasible (Natural England)	Identify and control invasive species in key hot spots to reduce the risk of spread and limit local ecological damage	Waters specified in annex B	2015
A statutory code of practice to provide guidance on the use and management of septic tanks is under preparation. This is being done in conjunction with the forthcoming amended groundwater regulations and Environmental Permitting Regulations	Helps to prevent and limit inputs of pollutants to surface waters and groundwaters	Nationally	2015
Additional actions that could happen if there were more certainty that they would be effective – scenario C			
Produce code of conduct for commercial fisheries and sea anglers and help to establish marine protected areas	Protect bass nursery and priority reef habitat <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits 	Waters specified in annex B	2015
Defra is considering a range of options to reduce the impacts from sewer misconnections. These include voluntary (public awareness raising and training for plumbers) and regulatory (transfer of powers – power currently with local authorities but could be passed to sewerage undertakers) options.	Helps to prevent and limit inputs of pollutants to surface waters <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits 	Nationally	2015
Defra is considering regulation based on best practice, which will cover the abuse of the drainage system, commercial washing activities, surface water control plans on construction sites and site management for industrial, institutional and commercial sites.	Reduce emissions of priority substances, priority hazardous substances or specific pollutants as well as organic pollution from urban and industrial activity <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits 	Nationally	2015

8.5. Environment Agency

Action	What this does	Where	When
What is already happening and what will happen - Scenario A			
Environment Agency monitoring programme	Maintain understanding of the state of the water environment	Across Northumbria RBD	2015
Investigations at water dependant nature conservation sites perceived to be adversely affected by abstraction	Determines whether action is needed to improve ecology at these sites		2015
Additional actions that will happen if this plan is approved - Scenario B			
Programme of investigations to understand reasons for failure	Reduce uncertainty about causes of failure and develop solutions	In water bodies not achieving good status	2015
Promote good practice initiatives and implementation of codes of good practice for all types of rural land management.	Contribute to reduction in organic pollutants, nutrients and sediments	Across Northumbria RBD	
Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Local pollution prevention campaigns	Raise awareness of the need for responsible handling and disposal of chemicals and other pollutants <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits 	In water bodies identified as being at risk or not achieving good status	2012

8.5.1. The Environment Agency also has a major role in promoting and overseeing many of the actions listed for other sectors.

8.6. Industry, Manufacturing & Other Business

Action	What this does	Where	When
What is already happening and what will happen - Scenario A			
Remediation of contaminated land and groundwater	Helps to achieve WFD (and GWD) priorities by preventing and limiting inputs of pollutants to groundwater and surface water	Urban and industrial areas	Ongoing
Marketing and use restrictions for specific substances e.g. trichloroethylene, PAHs, some mercury uses	Restricts use of priority substances, priority hazardous substances or specific pollutants within industry, manufacturing and other business	Across EU	Ongoing
Additional actions that will happen if this plan is approved - Scenario B			
Investigate emissions from various installations e.g. formulators, distributors, manufacturers and waste disposal operators and appraise options for action	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from industry, manufacturing and other business		2015
Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Where appropriate, and subject to local consultation, designate a limited number of Water Protection Zones (WPZs) from 2009 and apply appropriate actions within them to control high risk activities. Further WPZs may be designated, subject to evidence and local consultation, from 2012	Regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or unlikely to work <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Initially around 8 WPZs in locations to be decided across England & possibly Wales	from 2009 with possibility of further WPZs from 2012

8.7. Local and Regional Agencies

Action	What this does	Where	When
What is already happening and what will happen - Scenario A			
Inclusion of water efficiency and groundwater protection policies in Regional Spatial Strategy and Local Development Plans and the forthcoming Integrated Regional Strategy	Helps to achieve WFD (and GWD) priorities by promoting sustainable water use and preventing and limiting inputs of pollutants to groundwater and surface water	Across the Northumbria RBD.	2008 onwards
Inclusion of policies that require waste water treatment infrastructure capacity	Reduce risk of deterioration caused by growth		2008 onwards
Promote the wide scale use of sustainable drainage schemes for flood risk	Reduce risks of flooding and of impact on surface water quality at times of high rainfall	Nationally	2008 onwards
Additional actions that will happen if this plan is approved - Scenario B			
Promote and enforce the wide scale use of sustainable drainage schemes	Reduce risks of flooding and urban pollution of surface waters during periods of high rainfall	Nationally	By 2010
Promote national guidance for spatial planners on integrating development planning and water planning	Reduce the risk of pollution in water bodies from new development	Nationally	By 2010
Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Promote inclusion of water environment quality targets in Local Area Agreements	Increase local authority accountability for the quality of the water environment <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Nationally	By 2015
Inclusion of policies for water neutrality in Regional Spatial Strategy and Local Development Frameworks	Makes the maintenance of flows in fresh water bodies more achievable and reduces risks from water	Across the Northumbria RBD.	By 2015

Action	What this does	Where	When
for new development including retro-fitting of existing development	transfer <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 		
Improved management of surface water drainage by use of sustainable urban drainage systems (SuDS) and development and implementation of Surface Water Management Plans where appropriate	Reduce risk of diffuse pollution <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits 	RBD	2015

8.8. Mining and Quarrying

Action	What this does	where	when
What is already happening and what will happen - Scenario A			
Maintenance of low groundwater levels in disused mines	Prevents flooding of mines and overflow of contaminated waters to rivers	Across the River Basin District	Ongoing
Implementation of best practice controls and remediation at abandoned metal mines included in the Welsh metal mine strategy and specific coal mines throughout England and Wales	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from mining and quarrying: <ul style="list-style-type: none"> pilot & full scale remediation of priority metal mine sites; extended programme for metal mine sites; high priority coal mine sites; other problems at coal mine sites; 	Northumberland Rivers Tyne Wear Tees	2015 2027 2015 2027
Coal Authority minewater management programme	Helps to achieve WFD (and GWD) priorities by preventing and limiting inputs of pollutants to groundwater and surface water	Areas with historical mining legacy	Ongoing
Additional actions that will happen if this plan is approved - Scenario B			
Plan for addressing discharges from metal mines	Will lead to actions that reduce the amount of polluting substances discharged into waters	England	2015
Investigate emissions from abandoned and working sites and appraise options for action	Identifies sources of priority substances, priority hazardous substances or specific pollutants to allow development of effective programmes of measures	Sites contributing to potential EQS failures e.g. South Tyne	2015
Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Extended programme to implement best practice and remediation at abandoned metal mines	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from mining and quarrying <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Tyne Catchment	2027

8.9. Navigation and ports

What is already happening and what will happen - Scenario A			
Removal of Tributyltin (TBT) from the hulls of marine vessels	Reduces emissions of priority substances, priority hazardous substances or specific pollutants	Across EU	2008
Marketing and use restrictions for specific substances e.g. TBT within biocides	Reduces emissions of priority substances, priority hazardous substances or specific pollutants	Across EU	Ongoing

Additional actions that will happen if this plan is approved - Scenario B			
Investigate the reason for failure: to assess the contribution from dredging or disposal activities on EQS compliance as appropriate	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from navigation	Sites failing EQS or where there is evidence of deterioration	2012
Review existing controls for dredging inside and outside harbour limits as appropriate	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from navigation	England	2012
Develop and apply national guidance frameworks on dredging and on disposal of dredgings to inform WFD actions	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from navigation	England Dredging guidance Disposal guidance	2009 2012

8.10. Urban & Transport

Action	What this does	where	when
What is already happening and what will happen - Scenario A			
Highways Agency programme to investigate impact of soakaways	Helps to achieve WFD (and GWD) priorities by preventing and limiting inputs of pollutants to groundwater and surface water	Road transport network	Ongoing
Additional actions that will happen if this plan is approved - Scenario B			
Encourage sustainable and efficient use of salt/grit used on motorways, and highways - partnership with Highways Agency and Local Authorities	Limits inputs of salt to surface water and groundwater	Road transport network	2015
Wider use of Sustainable Urban Drainage Systems (SUDs)	Reduce risks of flooding and of impact on surface water quality at times of high rainfall		
Encourage uptake of Amenity Forum best practice advice, including use of Amenity Assured contractors. Encourage consideration of non chemical weed control	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from urban and transport uses	Sites contributing to potential EQS failures	2015
Identify hot spots for sediment and other pollutants from highway run-off	Identifies sources of priority substances, priority hazardous substances or specific pollutants to allow development of effective programmes of actions	Sites contributing to potential EQS failures	2015
Implement guidelines in the Memorandum of Understanding on herbicide use between Network Rail, Water UK and the Environment Agency	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from urban and transport uses	Sites contributing to potential EQS failures	Ongoing
Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Encourage enhanced use of SUDs and improved design and codes of practice for runoff, e.g. from highways and other transport – in partnership with Highways Agency and Local Authorities	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from urban and transport uses <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Within the Northumbria River Basin District	2015

Improved street and green space cleaning	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from urban and transport uses <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Within the Northumbria River Basin District	2015
Promote best practice on use of household and garden chemicals, including non-chemical weed control	Reduces emissions of priority substances, priority hazardous substances or specific pollutants from urban and transport uses <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Sites contributing to potential EQS failures	2015
Where appropriate, and subject to local consultation, designate a limited number of Water Protection Zones (WPZs) from 2009 and apply appropriate actions within them to control high risk activities. Further WPZs may be designated, subject to evidence and local consultation, from 2012	Regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or unlikely to work	Initially around 8 WPZs in locations to be decided across England & possibly Wales	from 2009 with possibility of further WPZs from 2012

8.11. Water Industry

Action	What this does	where	when
What is already happening and what will happen - Scenario A			
Improvement of continuous discharges at sewage treatment works - coordinated under AMP4 by Defra/WAG/Ofwat/EA	Improve and protect the quality of rivers, lakes and coastal waters	Within the Northumbria River Basin District	by 2010
Improvement of unsatisfactory intermittent discharges at combined sewer overflows - coordinated under AMP4 by Defra/WAG/Ofwat/EA	Improvements to discharges	Within the Northumbria River Basin District	by 2010
Investigation of discharge impacts and appraisal of options for action - coordinated under AMP4 by Defra/WAG/Ofwat/EA	Confirms the nature of the problem and the action needed to deal with this to prevent and limit inputs of pollutants to groundwater and surface water	Within the Northumbria River Basin District	
Improvements to water company assets under the next round of company investment (PR09) to meet statutory (non-WFD) requirements (Water companies)	Deliver further water quality improvements and continue to reduce the impact of abstraction across the river basin district	Rivers, coasts and estuaries across the RBD	By 2015
Additional actions that will happen if this plan is approved - Scenario B			
Improve continuous discharges at sewage treatment works to meet WFD specific requirements - coordinated under PR09 by Defra/WAG/Ofwat/EA	Expected to protect many rivers, lakes, estuaries and wetlands from ammonia and phosphorus.	Within the Northumbria River Basin District	2015
Improve polluting intermittent discharges at combined sewer overflows to meet WFD specific requirements - coordinated under PR09 by Defra/WAG/Ofwat/EA	Improvements to discharges.	Within the Northumbria River Basin District	2015
Investigate discharge impacts and appraise options for action to meet WFD specific requirements - coordinated under PR09 by Defra/WAG/Ofwat/EA	Confirms the nature of the problem and the action needed to deal with this to prevent and limit inputs of pollutants to groundwater and surface water	Within the Northumbria River Basin District	2015?

Manage demand for and use of water of water through leakage reduction, provision of household meters, and education programmes	Ensures more efficient use of water; helps prevent unsustainable abstraction; protects river flows and groundwater levels; protects water dependent ecology and conservation sites	Within the Northumbria River Basin District	2015?
Investigate discharges to sewer from various sources e.g. formulators, distributors and manufacturers and appraise options for action to meet WFD specific requirements - coordinated under PR09 by Defra/WAG/Ofwat/EA	Identifies sources of priority substances, priority hazardous substances or specific pollutants to allow development of effective programmes of actions	Within the Northumbria River Basin District	2015
Investigate emissions from STWs and appraise options for action to meet WFD specific requirements - coordinated under PR09 by Defra/WAG/Ofwat/EA	Identifies sources of priority substances, priority hazardous substances or specific pollutants to allow development of effective programmes of actions	Within the Northumbria River Basin District	2015
Implement programmes of research and local investigations to improve the evidence base to enable effective targeting of actions.	Northumbrian Water and Peatscapes investigating water colour in the Tees catchment. Project is looking at land use management techniques versus cost of additional water treatment.	Tees catchment	
Actions that could happen if there were more certainty they would be proportionate and feasible - Scenario C			
Additional measures under PR09 for phosphate discharges when biological evidence is available and provides corroboration of need.	Could protect additional rivers from phosphorus <ul style="list-style-type: none"> Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits 	Within the Northumbria River Basin District	

Finalisation of the water industry periodic review process is running in parallel to this consultation. Measures to be delivered by the water industry and their predicted outcomes can change from those used to develop the draft plan. Any additions, deletions or alterations and any subsequent changes of predicted outcomes will be made available to inform the consultation as they become available.

- » This is a summary of the actions that will be taken. Full tables of actions are in Annex C and D (for Natura 2000 actions).
- » Local actions acting on a particular water body can be found through the Environment Agency's website at [What's in your backyard?](#)

Q5 What comments do you have on these actions? Are there any actions that have been missed, or any changes you would propose?

Q6 What comments on Scenario C actions do you have, including any additional information you can supply about specific actions?

Q7 What support can you offer, such as undertaking any actions or providing resources, to help deliver more for your environment?

9. Planning for changing conditions

9.1. Background

9.1.1. River basin management gives an opportunity to work on a long-term programme of environmental improvement. Through this, it will be possible to adapt to changing conditions caused by climate change and development, and extremes such as drought and floods.

9.2. Climate change

9.2.1. Climate change is likely to have a significant effect on underlying environmental conditions, the impact of human activity on the water environment and the effectiveness of the actions that are put in place to manage these impacts. Actions that are implemented need to be as effective in a future climate as they are now, and not add to the climate change burden.

9.2.2. UK Climate Projections (previously named UK Climate Impact Programme 2008) predicts hotter drier summers, warmer wetter winters and rising sea levels. These changes need to be taken into account in assessing the scale of the pressures on the water environment. This will help ensure that the actions proposed in this Draft River Basin Management Plan will continue to meet their objectives and that investment decisions are effective.

Table 2 **Qualitative description of how climate change may change the risk of pressures**

Pressure	Increased risk
Abstraction and other artificial flow pressures	Very high
Biological pressures (fisheries management and invasive non-native species)	Medium/low
Biological pressures (invasive non-native species)	Medium
Microbiological pressures (including faecal indicator organisms)	Medium
Organic pollution (sanitary determinands) pressure	Medium
Nutrients pressure (nitrogen and phosphorus)	High
Hazardous substances pressure	Low
Acidification pressure	Low
Salinity pressure	Low
Temperature pressure (from point source discharges)	Medium
Physical modification pressure	Medium
Sediment pressure	High

9.2.3. Our screening analysis of the proposed actions shows that the actions would be effective under a range of climatic conditions so they will help tackle pressures both now and under the future climate. Most actions can also be adapted so climate change should not rule out implementing them now.

9.2.4. No single organisation is responsible for ensuring climate change adaptation in the water environment. Delivery will best be achieved through partnerships and integration of

activities. Working together on river basin management is a great opportunity to achieve this.

Q8 Do you agree with our assessment of how climate change will affect pressures on the water environment? What would you change?

» Further information about the assessment of the impact of climate change is in annex H.

9.3. Development

- 9.3.1. Current and emerging spatial plans will set out future growth up to 2026. In addition Ecotowns may be developed in the Northumbria River Basin District. The catchment profiles acknowledge the key centres where growth will take place. Spatial plans provide an opportunity to improve the water environment by influencing the planning policy framework, planning decisions, and to direct resources that can assist in achieving appropriate environmental outcomes.
- 9.3.2. The environmental report under the Strategic Environmental Assessment reviews the effect of the actions proposed in this plan, including any impacts on climate change and from development.

9.4. Flooding and coastal erosion

- 9.4.1. Flooding and coastal erosion are very important issues, and have a separate planning process alongside the new Floods Directive. Because defences and control structures impact on ecology, the River Basin Management Plan and all actions proposed need to take account of the need for and the impact of flood and coastal erosion risk management. Catchment Flood Management Plans and Shoreline Management Plans will take into account the objectives of the Water Framework Directive.
- 9.4.2. The Environment Agency plans its flood and coastal risk management capital investment through the Medium Term Plan, which is a rolling 5 Year investment plan that lists proposed projects. Using this, the Environment Agency will identify flood and coastal risk management activities that are relevant to the water body specific objectives in the River Basin Management Plan. These activities will be implemented with the goal of enhancing the ecology of water bodies where possible and so as not to cause deterioration of Ecological Status, nor impede the delivery of water body objectives unless fully justified under Article 4.7 of the Directive.

10. Further information

10.1. Strategic environmental assessment

10.1.1. Strategic environmental assessment reviews the effects of the actions proposed in this consultation on the environment, including any impacts on climate change. Through this assessment, as well as the impact assessment, it will be certain that the final plan represents the most sustainable way of managing the water environment.

» We will publish an environmental report at the same time as this consultation. Copies are available through our website at www.environment-agency.gov.uk/wfd or from the contact given at the end of this document.

10.2. Habitats Directive assessments

10.2.1. River Basin Management Plans also fall within the scope of the Habitats Directive. This means that each River Basin Management Plan will require an assessment of its likely effects on any Natura 2000 sites within, or hydrologically linked to, the river basin district. Whilst it is unlikely that any parts of the plan will have a significant effect, an initial assessment will determine if the objectives and actions contained within the River Basin Management Plans pass a number of tests.

10.2.2. These tests will look at whether the River Basin Management Plans contain actions to support the achievement of objectives for Natura 2000 sites in the time required; that the objectives within the River Basin Management Plan are not less stringent than those already used to determine consents and licences as part of previous Habitats Directive assessments; and that the plans contain no exemptions, derogations or less stringent objectives for Natura 2000 sites other than those that are compatible with the Habitats and Birds Directives.

10.2.3. If the River Basin Management Plans do not pass these tests and do not appear to be meeting their obligations for Natura 2000 sites, then a fuller assessment may be required.

11. Give us your views

We encourage you to respond by using our online consultation on our website at www.environment-agency.gov.uk/wfd. From here, you will be able to see other people's responses, download the Draft River Basin Management Plan consultation document and Annexes and find out more information about river basin management planning and the Water Framework Directive.

Alternatively you can return a copy of the question form, request further information or contact us in any of these ways:

- email at northumbriaRBD@environment-agency.gov.uk
- phone on 08708 506 506
- post to WFD Team, Rivers House, 21 Park Square South Leeds, LS1 2QG

We will use your comments to help revise the proposals, and will publish a response document to show how we will do this on our website by 22 September 2009. We will then publish the first River Basin Management Plan for the Northumbria River Basin District in December 2009.

This consultation closes on 22 June 2009.

Data Protection Notice

The Environment Agency will use the information you provide to produce the first Northumbria River Basin Management Plan in 2009. We may need to use your personal information to contact you during this consultation period to clarify any comments. We may make your information available to members of the Northumbria River Basin District Liaison Panel, or our agents/representatives to do these things on our behalf. If you do not want us to contact you, please let us know.

Under the Freedom of Information Act 2000 and Environmental Information Regulations 2004 we have to disclose information that we hold if people ask for it. This is subject to the exemptions/ exceptions and the 'public interest test' set out in the legislation.

Compliance with the Government's Code of Practice on Consultation

This consultation is being run in accordance with the criteria set out in the [Government's Code of Practice on Consultation](#). If you have any queries or complaints about how the consultation has been carried out, please contact:

- post to Cath Beaver, Consultation Co-ordinator, Environment Agency, Rio House, Aztec West, Bristol BS32 4UD.
- email: cath.beaver@environment-agency.gov.uk

12. Consultation 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 the plan aims 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 we have proposed? 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 (ones that are proportionate and feasible)?

- 4** We have followed a process to assess (appraise) the 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 would propose?
-

There are some extra actions that could be put in place if there were more certainty that 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?
-

Any other comments you may have on this plan

- 8** Do you agree with our assessment of how climate change will affect pressures on the water environment? What would you change?
 - 9** Do you have any other comments on this draft plan that you haven't already given?
-

Would you like to find out more about us, or about your environment?

Then call us on
08708 506 506 (charged at local rates)

email
enquiries@environment-agency.gov.uk

or visit our website
www.environment-agency.gov.uk

incident hotline 0800 80 70 60
(Freephone 24 hour)

(Calls from mobile phones are not free and will be charged at normal network operator's call rates)

floodline 0845 988 1188 (24 hour)