The Environment Agency works with other regulators and co-deliverers to protect the water environment in the Anglian 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 a shared vision.

**The Liaison Panel’s vision**

The water environment has been transformed beyond all recognition over the last few decades. Rivers once devoid of life now teem with fish. Bathing waters are the cleanest on record. This has been a catalyst for the development of many towns and cities. The benefits to people have been immense.

But huge challenges still need to be overcome to secure high standards throughout the water environment. Some sections of rivers are still in poor condition and the way the environment is managed has given rise to a host of pervasive and complex pollution and flow issues. Wildlife of many kinds continue to suffer. Rivers, lakes and coastal waters are also coming under increasing pressure from a changing climate and a growing population.

River Basin Management is an opportunity for this generation – for people and organisations to work together to improve the quality of every aspect of the water environment, under the ambitious and wide-ranging Water Framework Directive.

**We want to have healthy water environments as soon before 2027 as possible**

Urban and rural waters will be more natural and will provide a full range of services for people, the environment and the economy. We will know we have done this when these waters meet good status.

This will be achieved by

- Improving rural land management
- Reducing the impact of transport and built environments
- Addressing point and diffuse sources of pollution
- Securing sustainable amounts of water
- Improving wildlife habitats

This plan will ensure no deterioration in status across the water environment, bring protected areas up to the right standards, and make sure that action in urban water environments helps make cities, towns and villages better places.

We all stand to gain a clean, healthy environment, fit for the twenty first century. An environment we all can take pride in and enjoy to the full. An environment for life and livelihoods.
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.

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December 2008
Your views count – how to respond

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

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 Anglian River Basin District and briefly sets out the actions that should be taken to deal with them. 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 these actions forward.

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. We will publish a response document on our website by 22 September 2009 to show how we will take your comments into account. Our 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 sets out 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 (actions 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 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

Introduction 3

About the Anglian River Basin District 5

Environmental outcomes for the Anglian river basin district 7

The water environment now 13

The objectives for waters in the Anglian river basin district 18

The Anglian river basin district catchments in 2015 23

Summary sector action plan 42

Planning for changing conditions 62

Further information 64

Give us your views 65

Guide to annexes

Annex A  Current state of waters in the Anglian river basin district
Annex B  Objectives for waters in the Anglian 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

Introduction

The Environment Agency works with other regulators and deliverers to protect the water environment in the Anglian River Basin District, and improve it for the benefit of people and wildlife. Together we are using an approach called river basin management to involve others in this work.

The Anglian liaison panel has been central to helping us manage this process. The panel includes representatives of businesses, planning authorities, environmental organisations, consumers, angling and recreation bodies, regional and local government, all with key roles to play in implementing the plan.

This draft River Basin Management Plan sets out detailed proposals for the next six years and beyond. It has been prepared with the panel’s advice and its members support its publication for consultation.

We, together with the liaison panel, want to know what you think, so that we can improve the proposals, and publish an effective first river basin management plan for this river basin district. This plan will be published in December 2009. It will review the condition of the water environment and set out the actions that we all need to take.

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 the most significant issues that need to be dealt with in our river basin district.

A record of consultation and participation that has helped to develop this plan and the river basin planning management process, and a description of the Anglian District Liaison Panel is given in annex L

In this latest consultation we are now seeking your views on the actions that are proposed.

River basin management

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 such as some wetlands that depend on groundwater, estuaries and coastal waters out to one nautical mile. We have prepared the draft River Basin Management Plan under the Water Framework Directive, which requires all countries throughout the European Union to manage the water environment to consistently high standards.

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 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.

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

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 and organisations and people working together to deliver protection and improvement of the water environment will be needed. Everyone has a part to play.

The River Basin Management Plan will be reviewed and revised every six years.

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 management planning can be found at http://www.defra.gov.uk/environment/water/wfd/pdf/riverbasinguidance.pdf

To prepare this plan we have divided the water environment into units called ‘water bodies’ and designated them 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.

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.

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.

Protected areas have been established under European legislation and within the Anglian River Basin District include: the Ouse washes; the Wash and North Norfolk Coast and the Broads. 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 good status or good potential objective.
About the Anglian River Basin District

The River Basin District covers 27,890 km² from Lincolnshire in the north to Essex in the south, and Northamptonshire in the west to the East Anglian coast. The landscape ranges from gentle chalk and limestone ridges to the extensive lowlands of the Fens and East Anglian coastal estuaries and marshes. In total over 5.2 million people live and work in small or medium sized towns and cities within the district which has no extensive metropolitan areas.

Many of the towns are within Growth Areas or are Growth Points identified by the Government’s Sustainable Communities Plan. Before 2021 spatial plans propose an additional 500,000 homes along with the jobs and services for the people in them. We have to work with the planners, developers and communities affected by growth to maintain and improve the environment.

The River Basin District is a predominantly rural catchment, with more than half of its land mass (approximately 1.5 million hectares) used for agriculture and horticulture. From the fertile Fens – which cover 388,500 hectares of Lincolnshire, Cambridgeshire and Norfolk – to the extensively grazed grasslands in the Waveney Valley, Anglian River Basin District has one of the most productive agricultural landscapes in the world. Best known for its cereal crops, more than a quarter of England’s wheat and barley are produced here. But East Anglia is also a major horticultural region cultivating everything from peas and beans to potatoes and carrots, apples, strawberries, salad crops, flowers and shrubs. Farmers in East Anglia also harvest over half of the nation’s sugar beet – mainly in Cambridgeshire, Lincolnshire, Norfolk and Suffolk. Britain’s pig and poultry farms are mostly located here, with the second largest pig herd in England. Our sheep flocks, beef and dairy herds may be small compared with other regions but they are important to the farming ‘balance’ of the region and grazing livestock makes a major contribution to our prized landscape.

One of the most striking parts of the River Basin District are the Lincolnshire and Cambridgeshire Fens; this artificial, man-made landscape has been forged from coastal and estuarine wetlands over many centuries. These marshes, which are at or below sea level, have been artificially drained and continue to be protected from floods by drainage banks and pumps; with the support of this drainage system, the Fens have become a major arable agricultural region in Britain for grains and vegetables. These drainage systems also provide flood protection to a large number of settlements and properties and to the infrastructure (gas, water, electricity, telephones, etc.) which serves those communities.

The River Basin District is the richest region in the UK for wetland wildlife. The Broads, in particular, is Britain’s largest nationally protected wetland and provides a habitat for a myriad of rare plants and animals. Freshwater habitats within the River Basin District are very important for wintering wildfowl and our reservoirs and watercourses support some important fisheries. Many invertebrate populations and populations of rare birds depend upon these freshwater wetlands. Approximately 80 per cent of England’s resource of lowland fen occurs here, including the largest expanse of lime-rich fens. Other internationally important fens occur in the heads of valleys, fed by groundwater springs. A rich mix of other habitats are found in the region, including swamp, reedbeds and carr woodland.

Much of the extensive and varied coast of the region is internationally designated. This includes 33 per cent of the UK’s extensive areas of saltmarsh, which reflects the presence of large estuaries and wide intertidal areas along the coast.

One of the biggest challenges facing the River Basin District is water management. Parts are extremely dry, receiving only two-thirds of the UK’s average rainfall. Many of our most important wildlife sites are dependent on a good supply of water and it is obviously of vital importance to public water supplies, agriculture and industry. At the other extreme, flooding is also a key feature of the River Basin District. About one-fifth of the region is susceptible and therefore, coastal and inland flooding is a major concern for many communities.
Figure 1: Map of the Anglian River Basin District

Environmental outcomes for the Anglian river basin district

The environmental outcomes we expect to achieve as a result of the planned actions are grouped under the headings below, and discussed in more detail in the following sections:

- Improving rural land management
- Reducing the impact of transport and built environments
- Addressing point sources of pollution
- Securing sustainable amounts of water
- Improving wildlife habitats

Overall, it is expected that the implementation of the actions planned will allow us to achieve positive outcomes for the environment. The priorities for action are: Protected Areas; the worst waters and making improvements where people live.

The actions outlined in this plan are expected to deliver a wide range of improvements across the River Basin District. As a result of these and work to ensure no deterioration in status, it is expected that by 2015 the implementation of the actions planned will allow us to achieve good status in fifty five surface water bodies, representing 410 km of river length.

Major investments are planned which will improve elements within overall good status. This includes improving the quality of bathing and shellfish waters by addressing microbiological pressure; ensuring improvements at major waste water treatment works to help reduce the phosphorus load entering the water environment and reducing the organic pollution of rivers.

Specifically, for the 6,968 km of monitored rivers in the Anglian River Basin District, we are predicting achieving the following outcomes by 2015:

- over 98% of rivers will be at good status for ammonia by the improvement of a further 250 km of rivers
- over 77% of rivers will be at good status for dissolved oxygen by the improvement of a further 240 km of rivers
- over 39% of rivers will be at good status for phosphate by the improvement of a further 870 km of rivers
- improving a further 190 km of rivers to at least good status for fish
- improving a further 130 km of rivers to at least good status for invertebrates.

However, the amount of improvement to overall good status that can be achieved in the first planning cycle is limited because:

- all aspects of a water body's ecology and chemistry have to be at good status before it reaches good status overall (up to 37 different elements can be measured)
- more research is needed in many areas (for example, hydromorphology and its links with ecology) before we know how, or how best, to reach good status
- there are aspects where it is not known at present what is causing the failure, how technically to improve things, or where the water environment takes a long time to benefit from improvements
- the most cost-effective way to make improvements is to spread them over a longer timescale.

Groundwater pollution will be prevented or limited, so that 22 groundwater bodies (68 per cent) are in good status by 2015.

- Improvements of groundwater bodies to good status represents 9,296 km² of aquifer outcrop together with associated 100 km² of wetlands.

Because it can take 50 years or more for pollutants to work through from the surface to the aquifer, we are investing now to meet the long-term challenge of achieving good status for all groundwaters by 2027.

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2 Protected Areas are those that have been designated as requiring special protection under European Community legislation.
The Summary sector action plan includes a number of additional actions that could happen if we were more certain about them. We would welcome your comments on these, as delivering them may allow achievement of better outcomes.

Improving rural land management

It is important to balance the way rural land is used. Whilst encouraging the restoration of natural habitats, species and natural sediment transport processes, the need to produce food for a growing population must also be considered. We want to ensure that areas of drinking water and sources of groundwater are protected; to prevent and reduce nutrient enrichment, where the excessive growth of algae and other plants reduces overall biodiversity. We also want to prevent and reduce pollutants and faecal indicator organisms\(^3\) in run-off, which can reduce diversity in plants and animals and pose a risk to the quality of bathing and shellfish waters. Reducing sediment loss will protect and restore fish spawning grounds, encouraging healthy sustainable fish stocks.

The main causes of the problem have been associated with activities such as:
- fertiliser and pesticide use in excess of crop requirements.
- inefficient use of irrigation water.
- spillage of fertiliser, pesticide and liquid wastes with high organic content and poor storage practice.
- discharging water from industrial process waste that contains organic matter.
- inappropriate management such as poor track maintenance that leads to run-off problems.

The main responsibility for implementing actions that will improve rural land management falls on the agricultural sector, but forestry, conservation, fisheries and other sectors will also contribute. The types of actions included in the programme of measures involve, for example, creating Water Protection Zones, England Catchment Sensitive Farming Delivery Initiative and other partnerships offering land management advice. Nitrate Vulnerable Zone designations have been extended. A revised Code of Good Agricultural Practice is also imminent, which will use safeguard zones to focus voluntary and existing statutory pollution prevention.

What this means for the Anglian River Basin District

The planned actions and resulting improvements will mean:

- Improvements in reducing the level of sediment transfer will continue; fertiliser and pesticide use will be moderated as a result of the England Catchment Sensitive Farming Delivery Initiative in the current priority catchments, as well as the new Blyth, Stour and Colne catchments. In addition, rivers and groundwater bodies suffering from diffuse source pollution will benefit from strategic partnership work in the Ouse Washes and Bedford Ouse, the Rivers Nene, Welland and Blackwater/Chelmer and the Burn, Stiffkey and Glaven in North Norfolk.
- Horticultural land in areas at high risk of soil loss will see less erosion and less run-off.
- Less pollution will enter groundwater, and, in the long term, drinking water and the wider environment will benefit from lower concentrations of nitrate, pesticide and other pollutants.
- Land managers should benefit from agri-environment scheme funding, targeted at resource protection in those waters at risk from diffuse pollution.
- There will be a better understanding of the sources of pressure, through local investigation and development of local plans. For example, partnership working to ensure that 60 per cent of outdoor pig units have plans to limit diffuse pollution in Suffolk.

\(^3\) Faecal Indicator Organisms are the commonly-used bacterial indicator of sanitary quality.
Reducing the impact of transport and built environments

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. We all want to see reduced run-off from urban development and roads and less of pollutants in run-off which reduce biodiversity and can cause groundwater pollution. We all should value the water environment in cities, towns and villages.

The main causes of these problem have been linked to:
• poorly planned development, which can lead to the loss or fragmentation of habitat and pressures on water quality and water resources.
• leaks and storm water discharges from sewage systems and private sewage treatment works.
• discharge of industrial waste containing organic matter, chemicals and other pollutants.
• inappropriate use of fertilisers and pesticides in parks and gardens.
• run-off from industrial estates, roads, driveways, car parks and car washing.
• land affected by contamination.

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 organisations including: the Highways Agency, the water and transport sectors and the construction industry. A significant lead will have to be provided by local government, particularly planning authorities.

What this means for the Anglian River Basin District

The planned actions and resulting improvements mean that:
• New development does not contribute to deterioration in the quality of the water environment.
• Sustainable drainage systems become features in all development, particularly in the growth areas. This will help reduce the impact of floods and sediment and allow recharge of local aquifers.
• Water Cycle Strategies are used to ensure integrated water management are used in all key development areas throughout the River Basin District to minimise water use.
• The Green Blue and the Green Marinas Codes of Practice to promote pollution prevention and the conservation of the water environment. The Code will help improve coasts, estuaries and navigable rivers to be better places for recreation.
• There is less pollution from the construction industry. In one year we dealt with 800 pollution incidents from the construction sector. We have established a pilot project (Sitewise) to provide advice on minimising environmental impacts and to address this issue.
• Dredging is carried out in a way that is compatible with achievement of good ecological potential in rivers, estuaries and coasts.
• Less contaminants are released to groundwater from industrial estates as a result of local action and through a programme of pollution prevention advice.
• Less contamination of groundwater from oil storage as a result of advice and enforcement of source protection zones.
• There is better understanding of where urban and green space management threatens groundwater, rivers, coasts and estuaries.
• Fewer septic tanks have direct connections into watercourses as a result of project work.
• Water Protection Zones (WPZs) will be used to reduce diffuse pollution in high priority areas. Initially eight WPZs will be designated nationally by 2010, with further Zones if necessary from 2012.

Addressing point sources of pollution
Using the agreed environmental quality standards will reduce excess nutrients and pollution entering the environment. High levels of nutrients lead to excessive plant growth, which, in turn, may reduce other wildlife, including fish. High levels of faecal indicator organisms can pose a risk to bathing waters and the economic viability of shellfish harvesting areas.

The main causes of the problem have been identified as:
- effluent from sewage systems, private sewage treatment works and industrial works.
- industrial point sources, for example, vegetable and fruit processing.
- commercial fisheries.
- spillages from domestic and industrial oil tanks.

The main responsibility for implementing actions to address localised sources of pollution will fall on the water industry, agriculture and all industry, as well as householders. The Environment Agency, as the regulator, also has a key role in enforcing improvements. There will need to be provision for tighter control on discharges. This draft plan includes the actions proposed in the Water Companies Price Review 2009.

**What this means for the Anglian River Basin District**

The planned actions and resulting improvements include:

- The Environment Agency will work with others to address sewage discharges at a number of key locations. We expect to:
  - maintain or improve the quality of rivers suffering from organic pollution.
  - maintain or improve the quality of rivers suffering from excess phosphorous, which contributes to algal blooms and reduces biodiversity.
  - reduce incidents causing fish mortalities or chronic debilitating effects on fish populations and other wildlife.
  - improve the quality of bathing waters suffering from bacteriological contamination, whilst completing investigations into failures in standards in others.
  - improve shellfish waters suffering from bacteriological contamination, whilst conducting investigations into failures in standards in others.
  - continue to investigate the effect of endocrine disrupter substances in our rivers and estuaries.

- We will investigate emissions from industry and ensure that the right management is in place to minimise harm to the water environment.

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4 Disruption of the normal functioning of the endocrine (hormonal) system by either artificial or naturally occurring chemicals, thereby affecting those physiological processes which are under hormonal control.

Securing sustainable amounts of water

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

The aim is to make sure that there is enough water for invertebrates (including fly life), fish, plants and birds. Adequate river flows can be particularly important to migratory fish.

The main cause of pressures on flows in rivers has been linked to abstraction and impoundments for:
- public water supply.
- irrigation for agriculture, horticulture and recreational use.
- industrial abstractions.
- water transfers.

The Anglian River Basin District is one of the driest in the UK and has the lowest available water resources. These require careful, sustainable management in order to balance the needs of society and the water environment. 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. Planning authorities have a key role in managing our water resources, such as permitting new reservoirs and promoting water efficiency. Examples of actions proposed in this plan include demand management and the review of abstraction consents under the Habitats Directive.

As the provision of the public water supply is the main source of demand for water, it is clear that the main player will be the water industry and the Environment Agency as the regulator.

What this means for the Anglian River Basin District

The planned actions and resulting improvements mean that:

- There is no deterioration of the water environment as a result of the significant growth that will take place in Haven Gateway, Norwich, Milton Keynes and the Stansted-Cambridge-Peterborough Growth Corridor and other growth areas.
- The problems identified through our Catchment Abstraction Management Strategies will be addressed.
- Sustainable water industry Water Demand and Resource Plans are produced.
- Abstraction licences influencing Natura 2000 sites will be reviewed and, where necessary, modified by 2015, as required by the Habitats Directive.
- Other wetlands, which depend on groundwater, will be investigated and protected by limiting the risk of abstraction impacts through the Restoring Sustainable Abstraction process.
- Abstraction licences will be modified to ensure there is no adverse effect on the conservation objectives of Sites of Special Scientific Interest by 2021.
- Promotion of water efficiency by all abstractors and water users – domestic and commercial.
- There will be partnership projects with water companies for environmental enhancements such as on the River Stour and the Pant/Blackwater as a result of the water transfer and Abberton Scheme.
- Management of flows to improve connectivity at barriers to fish migration and protection of sensitive habitats.
- Farmers and other water users will be encouraged to build storage reservoirs, to help reduce the burden on rivers and groundwater.

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5 Natura 2000 – important wildlife sites identified under the European Habitats and Birds Directives and protected under the Water Framework Directive.
Improving wildlife habitats

Habitats and wildlife corridors, which are areas that allow wildlife to move freely, should be of good quality, with few artificial barriers. We want to reduce the impact of invasive non-native species, where plants or animals take over a particular habitat, displacing existing species and damaging the area they invade. We will give special consideration to Protected Areas designated under the Birds and Habitats Directives. We want to limit the impact on rivers, lakes, estuaries and coastal waters from physical changes, but need to recognise that in some areas, such as the Fens, the very maintenance of their artificial nature has created worthwhile habitats.

The main causes of loss of wildlife habitats have been linked to pressures from:

- land drainage for agricultural improvement, reclamation for agriculture (mostly carried out in the 18th and 19th centuries), urban development and historical structures.
- navigation impacts such as weirs, bank protection, dredging, bank erosion, river traffic.
- river re-sectioning, straightening, realignment, canalisation.
- physical modifications for flood risk management.
- culverting of rivers and streams to allow development.
- the impact of non-native invasive species known to cause problems at specific sites.
- abstraction for public water supply, agriculture and industry.

We want to use the River Basin Management Plan to help us prioritise habitat protection and enhancement programmes across the district in discussion with other partners. Key organisations include the Environment Agency, Natural England, farming, conservation bodies and riparian owners – as well as the navigation sector and local authorities.

What this means for the Anglian River Basin District

The planned actions and resulting improvements mean that:

- We will work with planning authorities, conservation groups and others to identify and improve wildlife habitats.
- Access for migratory fish and eels within estuaries and rivers will be improved, so that they can swim freely. The focus will be on Priority Areas.
- Managed realignment of coasts and estuaries will lead to overall ecological improvement and greater flood resilience in these areas.
- Rivers will be enhanced by addressing physical pressures including culverts, closed watercourses, pinch points and in channel structures.
- Habitat restoration and enhancement projects are completed as result of our fisheries and ecological surveys and investigations such as those on the River Wensum.
- Investigations will be carried out into specific problems such as the decline in the roach population on the River Wensum and low dissolved oxygen levels in the Deben.
- Fisheries action plans will implement projects to improve habitat and access, such as on the Broads, Wensum, Witham and Stour.
- There will be improved flow and river habitat management to protect fish spawning habitat.
- Our work will contribute to better science about the relationship between ecology, physical shape and water flow in the environment, in order to target work more effectively in the second plan.
- A programme of work on non-native species will be established, including clearance work at priority sites and campaigns to prevent introductions.
- There will be the creation of new wetland habitat to compensate for summer flooding deterioration of the Ouse Washes.
- Investigations such as into the decline in the roach population on the River Wensum.
The water environment now

Pressures on our water environment

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 the pressures of society and industry that have significantly altered and damaged the environment (in the adjacent Thames River Basin District).

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.

We have revised the significant issues following your comments and grouped them under the following headings:

- **diffuse pollution from rural areas** (nitrates, phosphorous, faecal indicator organisms and sediment)
- **diffuse pollution from urban areas and transport** (nitrates, phosphorous, faecal indicator organisms and sediment)
- **point source pollution** (abstraction and other artificial flow pressures, nitrates, phosphorous, faecal indicator organisms and sediment)
- **flow problems** (abstraction and other artificial flow pressures, alien species, physical modifications (rivers and lakes) and sediment)
- **alien species** (alien species)
- **physical modifications** (abstraction and other artificial flow pressures, physical modifications (rivers, lakes, estuaries and coasts) and sediment).

Q1 Do you agree with the assessment of problems in 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.

The state of the water environment

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 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.

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

Each of the components of classification (ecological and chemical for surface waters, and quantitative and chemical for groundwater) in turn comprise several different elements as shown in figure 2 above. For example the ecological elements include fish and invertebrates; a series of non-biological elements; and 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, 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

At the moment thirty nine (5 per cent) of surface water bodies (rivers, lakes, estuaries and coast) and 65 per cent of groundwater bodies are achieving good status. The reason these figures are not higher can be due to a combination of several factors, but is often due to a single pressure.

In the Anglian River Basin District, approximately 180 water bodies (23 per cent) currently failing to meet good status do so because of their failure to meet the required standards of a single pressure. Of these:

- 81 water bodies fail to achieve good status only because of high phosphate levels
- 33 water bodies fail to achieve good status only because of low dissolved oxygen levels
- 30 water bodies fail to achieve good status only because of low invertebrate counts
- 24 water bodies fail to achieve good status only because of low fish counts.

The current status is the baseline from which the ‘no deterioration’ objective of the Water Framework Directive is measured. Figures 3 to 6 summarise the state of the water environment, based on those waters assessed.

» Monitoring and classification maps, which describe the current state of waters are in annex A.

More detailed classification results are in annex B.

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 focuses on the current classification of the ecological status, whilst figure 4 shows the status if based solely on biological elements.

The natural life of watercourses can sometimes be healthy even when the supporting physico-chemical elements (such as phosphate) suggest a problem. This emphasises the importance of having confidence that there is a real problem before taking possibly unnecessary action to solve it.

Figure 3: **Current ecological status and ecological potential of rivers, by length**

Figure 4: **Current biological status and biological potential of rivers, by length**

Figure 5: **Current quantitative status of groundwater bodies, by number**

Figure 6: **Current chemical status of groundwater bodies, by number**

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

Table 1: **Current ecological status and potential of canals, lakes, estuaries and coasts**

Whilst good ecological status is defined as a slight variation from undisturbed natural conditions in natural water bodies, artificial and heavily modified water bodies are unable to achieve natural conditions. Instead, the target for these water bodies is to achieve good ecological potential, which recognises their important ongoing use, whilst making sure that ecology is protected as far as possible. These uses include flood risk management, land drainage, navigation, urbanisation, etc.

Ecological potential 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.

We are proposing that 125 of our 808 surface water bodies in the River Basin District (15 per cent of all surface waters) are designated as artificial and that 450 (56 per cent of all surface waters) are designated as heavily modified, i.e. 71 per cent of our surface water bodies have been modified or made by man. We reached this view using a detailed screening process, which involved consulting interested groups and carrying out a technical review.

Table 2: Water body numbers in Anglian River Basin District

<table>
<thead>
<tr>
<th>Water bodies</th>
<th>Canals</th>
<th>Lakes</th>
<th>Estuaries</th>
<th>Coasts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number</td>
<td>13</td>
<td>46</td>
<td>18</td>
<td>14</td>
</tr>
<tr>
<td>Less than good</td>
<td>63%</td>
<td>43%</td>
<td>72%</td>
<td>38%</td>
</tr>
</tbody>
</table>

The presence of so many artificial and heavily modified water bodies has a profound impact on the landscape of the River Basin District: straightened rivers, drainage channels and pumping stations protect agricultural land, urban areas and important infrastructure from inundation by flood waters; provide land drainage; navigation and recreation facilities. It is, therefore, important that appropriate management of these watercourses continues, whilst aiming to achieve good ecological potential in every water body.

The reasons for designation of artificial and heavily modified water bodies are given in annex I.

We are proposing to extend the network of water bodies in England to include areas of biodiversity significance. We are also proposing to split some of the larger water bodies.

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6 There are nine coastal water bodies in the Anglian RBD, however we have also included Thames Coastal North in this draft Plan.

Details of changes to water bodies are included in annex J.
The objectives for waters in the Anglian River Basin District

How we set objectives

The draft plan sets out where we aim to meet good status and good potential by 2015, and where we cannot meet these targets by 2015 we give the reasons for this.

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. Or using the available resources in this way means 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, we have proposed an objective for 2021 or 2027. We will review the proposals in relation to these alternative objectives before the next plan in 2015. This will be informed by investigations and our intention to set an overall challenge target for 2021.

Targets for Subsequent Cycles

This draft plan sets out proposals for improving the water environment in the river basin management first plan 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.

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, we are proposing targets for what should be achieved by 2021 and 2027. At this stage we believe 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.

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.

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 based on assessed river length

[Diagram showing target progress from Now to 2015, 2021, and 2027 for different water statuses: Bad, Poor, Moderate, Good, High]

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.

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. We believe that some of the actions we considered for this plan are not suitable because it is not technically feasible to implement them, or we cannot be certain of the benefits they would bring and the cost would significantly exceed the benefits. In some cases we have not been able to identify a partner to take the lead in investigating and managing the action.

Information about the planning assumptions we used when assessing actions is 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.

Figures 8 to 10 show what the status of our waters is expected to be in 2015 if we implement the proposed actions.
Figure 8: **Predicted status and potential for surface water bodies in 2015**

Figure 9: Predicted quantitative status for groundwater in 2015
Figure 10: Predicted chemical status for groundwater in 2015

The Anglian River Basin District catchments in 2015

This section summarises information about the status of waters in the Anglian river basin district and the objectives proposed (see scenario B on page 39) on a catchment-by-catchment basis.

In summary, across the River Basin District, we all will:

- aim to achieve ‘good’ status in all waters by 2027 and will set no less stringent objectives in this plan. This is our aspiration: at this stage we do not precisely know how this aim will be achieved in all water bodies
- increase the length of rivers achieving good status from 273 km (39 water bodies) currently to 410 km (55 water bodies) in 2015. In addition, there will be great improvements to water quality and ecology across the River Basin District that will not be picked up in a change to overall status
- secure an earlier improvement to good ecological status or potential for coasts and estuaries than currently planned. We hope to be able to do this as more actions become available, such as those from shoreline and catchment flood management plans to address physical pressures
- maintain 68 per cent of groundwater at good quantitative and 65 per cent at good chemical status to 2015. It can take a long time for improvements to be shown in groundwater quality. However, we propose to accept the major challenge of achieving ‘good’ status in all groundwaters by 2027
- modify, or revoke, all abstraction licences adversely affecting the conservation features of Natura 2000 sites, by 2015
- investigate the need for actions required to modify abstraction licences for those surface and groundwater bodies where there is a high risk that abstraction may be limiting good ecological or good quantitative status, to be completed by 2015. Modification of abstraction licences to ensure no adverse effect on conservation objectives of Sites of Special Scientific Interest will not be completed until 2021.

We will have more information available about the state of our waters in time for the final plan, to be published in 2009. This will improve our classifications. This, together with your consultation comments, will allow us to improve our judgement on which objectives should be set. We will also be able to add new actions, including those planned through the shoreline and catchment flood management plans. This may allow more of the Anglian water bodies to get to ‘good’ status by 2015.
Proposed objectives for river waterbodies

Broadland Rivers

Currently, 30 km of rivers and two (out of a total of 15) lakes are achieving either good or potentially good status. We are proposing that by 2015 this would increase to 33 km compliance, though with no additional lakes complying. Our target for 2027 is that all water bodies will achieve good status or good potential.

This catchment covers a relatively flat area of approximately 3,188 km². The area is mostly rural, with a few larger urban areas including the City of Norwich, Great Yarmouth, Lowestoft, Dereham, North Walsham, Wymondham, Beccles, Fakenham, Diss and Bungay. The area comprises seven main rivers: the Rivers Wensum, Yare, Tud, Ant and Bure to the North and the Rivers Tas and Waveney to the South. The area also includes the shallow lakes of the Broads. The water environment is used for a variety of activities including recreation, public water supply, fisheries and conservation.

The main land use in the catchment is arable agriculture, although there are pockets of water-dependent industries around Norwich. Tourism and water-based recreational pursuits such as boating and angling, are vitally important to the Broadland Rivers economy. The tidal rivers in the Broadland Rivers area form the third largest inland navigation in Britain.

The Broadland Rivers area also encompasses the Broads Executive Area (status equivalent to a National Park Area) and has a high density of local and nationally important protected sites, including the Broads and River Wensum Special Areas of Conservation (SACs) and the Broadland Special Protection Area (SPA), both of which are protected under European law.

Several key centres of growth are planned in this catchment. By 2021, additional homes are planned around the growth point of Norwich (33,000), and also at Great Yarmouth (5,000) and Lowestoft (4,000) where significant development is planned on waterfront sites. In addition, a potential 10,000-home Ecotown has also been proposed at Coltishall in the Broadland Rivers catchment which could discharge effluent into the River Bure upstream of the Broads. Actions will be taken to ensure that these developments do not adversely impact on the water environment (refer to annex C).

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 40 km of rivers to at least good status for dissolved oxygen
- 19 km of rivers to at least good status for invertebrates
- 200 km of rivers to at least good status for phosphate.

Cam and Ely Ouse including the South Level

Currently, 25 km of rivers in this catchment are achieving either good or potentially good status. We are proposing that by 2015 this would increase to 65 km compliance. Our target for 2027 is that all water bodies will achieve good status or good potential.

The Cam and Ely Ouse catchment comprises an area of approximately 3,600 km², encompassing Cambridge, Royston, Saffron Walden, Newmarket, Bury St Edmunds, Ely and Swaffham. This area contains a stretch of the Ely Ouse, from Earith to Denver, as well as the Wissey, the Little Ouse, the Lark and the Cam. It, therefore, also includes an area of Fenland, part of the South Level, which derives its water from the Ely Ouse.

The catchment supports a number of nationally and internationally important water-related sites that are of exceptional value.

In times of water shortages, Great Ouse Groundwater Development Scheme boreholes are operated in the Thet and Little Ouse catchments in order to maintain river flows so water can be transferred to Essex for use in public water supply under the Ely Ouse to Essex Transfer Scheme.

Many of the rivers monitored within the area are naturally slow flowing, with the result that dissolved oxygen levels are significantly lower than those found in upland regions. High nutrient levels are a problem in many watercourses and can lead to prolific algae growth and associated dissolved oxygen problems. Duckweed cover can also be extensive.

Key centres of growth are planned in this catchment. By 2021, additional homes are planned at Cambridge (42,000), Thetford (6,000) and Bury St Edmunds (8,000). There will be considerable pressures from these developments to provide a water supply from an area where water resources are scarce and already allocated for abstraction or the environment. In addition, a potential Ecotown has been proposed at Hanley Grange. Development actions (refer to annex C) will therefore be required to achieve good ecological status and prevent the deterioration of water bodies.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 36 km of rivers to at least good status for ammonia
- 13 km of rivers to at least good status for dissolved oxygen
- 9 km of rivers to at least good status for fish
- 19 km of rivers to at least good status for invertebrates
- 190 km of rivers to at least good status for phosphate.

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**Combined Essex Rivers**

Currently, 11 km of rivers in this catchment are achieving either good or potentially good status. Although we are assuming little change by 2015, we hope to be able to improve on this target as more actions become available to address pressures. Our target for 2027 is that all water bodies will achieve good status or good potential.

The Essex Rivers area lies within the counties of Essex and Suffolk as well as a small part of Cambridgeshire. It encompasses the rivers and tributaries of the Stour, Colne, Pant/Blackwater, Chelmer, Crouch and Roach, along with the smaller catchments of Sixpenny, Tenpenny, Holland and Asheldham Brook.

The Ely Ouse to Essex Transfer Scheme augments flows in the River Stour and River Pant/Blackwater to enable the public water supply abstractions to take place when natural flows in the rivers are not sufficient.

The water environment is used for a variety of activities including recreation, public water supply, fisheries and conservation. The area is rich in landscape and wildlife heritage and most of the coast is of international importance for conservation.

Key centres of growth are planned through the catchment. By 2021, additional homes are planned at Colchester (12,000), Chelmsford (12,000), Basildon (9,000) and Southend (4,000). These will place cumulative pressures on water resources and on estuaries into which they discharge treated effluent, and development actions (refer to annex C) will be required to achieve good ecological status and prevent deterioration of water bodies. In addition, there are major port developments at Harwich and the redevelopment of Shellhaven (in the adjacent Thames River Basin District) that could have potential impacts, for example, on estuary fisheries. Again, mitigation actions will be required to ensure no deterioration. Flood alleviation schemes along the coast offer opportunities to create new coastal habitat, for example, salt marshes through the managed realignment of coastal flood defences.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 46 km of rivers to at least good status for ammonia
- 20 km of rivers to at least good status for dissolved oxygen
- 30 km of rivers to at least good status for fish
- 106 km of rivers to at least good status for phosphate.

**Figure 13: Progress towards achieving overall good status and potential in rivers in the Combined Essex Rivers catchment**

![Graph showing progress towards achieving overall good status and potential in rivers in the Combined Essex Rivers catchment](image-url)

East Suffolk Rivers

Currently, 43 km of rivers in this catchment are achieving either good or potentially good status. Although we are assuming little change by 2015, we hope to be able to improve on this target as more actions become available to address pressures. Our target for 2027 is that all water bodies will achieve good status or good potential.

The East Suffolk Rivers area encompasses the valleys, tributaries and estuaries of the Rivers Gipping, Deben, Alde, Thorpeness Hundred, Yox, Blyth and Lothingland Hundred. The area is mostly rural with a few towns: Ipswich, Felixstowe, Stowmarket, Woodbridge, Leiston, Halesworth and Needham Market.

Agriculture is the predominant land use within the area, though there are pockets of industry which include food processing, milling, malting and the manufacture of farm machinery and fertilizers.

The area has a rich landscape and includes the Suffolk Coasts and Heaths Area of Outstanding Natural Beauty (AONB) and the Suffolk Rivers Valleys Environmentally Sensitive Area. Areas of the coast are of international importance for conservation.

Many of the East Suffolk rivers are impacted by drought and periods of low flows, which is reflected in the dissolved oxygen levels measured in some of these rivers dropping to low levels. Despite this, some are still able to support a reasonable cyprinid population dominated by roach, bream, dace and chub.

The key centre of growth planned in this catchment is Ipswich, where 20,000 additional homes are planned for 2021. Development actions (refer to annex C) will be required to achieve good ecological status and prevent deterioration of water bodies.

Major infrastructure expansion is expected at the port at Felixstowe. In addition, there is the nuclear power generation site on the coast at Sizewell, which may undergo expansion. Again, actions will be necessary to mitigate any negative impacts and ensure good ecological status is achieved.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 20 km of rivers to at least good status for dissolved oxygen
- 23 km of rivers to at least good status for fish
- 6 km of rivers to at least good status for invertebrates
- 28 km of rivers to at least good status for phosphate.

**Figure 14: Progress towards achieving overall good status and potential in rivers in the East Suffolk Rivers catchment**
Currently, 28 km of rivers in this catchment are achieving either good or potentially good status. Although we are assuming little change by 2015, we hope to be able to improve on this target as more actions become available to address pressures. Our target for 2027 is that all water bodies will achieve good status or good potential.

The River Nene rises in Northamptonshire and flows through Northampton, Peterborough, Wisbech and Sutton Bridge before discharging into The Wash. To the east of Peterborough the catchment is typical low lying fen. Internal Drainage Boards maintain a network of drains and control water levels in this area. West of Peterborough much of the landscape is undulating, dissected by the valley of the River Nene and its tributaries.

The River Nene is an important source of raw water to fill both Pitsford and Rutland Water reservoirs for public water supply. It is also important for navigation and recreational uses. The navigation connects with the Grand Union Canal in Northampton and with the Middle Level River System at Stanground. There is no significant groundwater abstraction in the catchment, due to the absence of major aquifers. The Nene Washes, which lie downstream of Peterborough, have been classified as a Special Protection Area (SPA) and Ramsar site. The area floods seasonally providing an important flooded grassland habitat for a wide range of bird species.

A number of large discharges are made to the Nene. These include treated effluent from sewage treatment works (STWs) and industrial sources and are one of the major influences on the quality of the surface water within the catchment.

The catchment contains a diverse and in many cases, prolific fish community. The main pressures affecting fisheries are low flows and associated problems such as poor dilution of treated effluent, barriers to fish movement and habitat degradation through flood defence and navigation works.

Key centres of growth are planned for 2021 at Peterborough (21,000), Daventry (500), Northampton (19,000), Wellingborough (8,000), Kettering (8,000) and Corby (11,000). There are, therefore, pressures from the cumulative impacts of planned development in the Nene catchment; and development actions (refer to annex C) will be required so that there is good ecological status and no deterioration of its water bodies.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 9 km of rivers to at least good status for ammonia
- 51 km of rivers to at least good status for invertebrates
- 3 km of rivers to at least good status for phosphate

![Figure 15: Progress towards achieving overall good status and potential in rivers in the River Nene catchment](image)
North Norfolk

Currently, 15 km of rivers in this catchment are achieving either good or potentially good status. We are proposing that by 2015 this would increase to 35 km compliance. Our target for 2027 is that all water bodies will achieve good status or good potential.

The North Norfolk area is geographically small and comprises of a relatively narrow strip of land along the North Norfolk coast. The catchment is predominantly rural, with the largest towns being Mundesley, Cromer, Sheringham, Holt and Wells-next-the-Sea.

The main watercourses are the Rivers Hun, Burn, Glaven, Stiffkey, Mun, all of these are relatively small in terms of both flow and length but are important in terms of the biodiversity they support.

The area supports a variety of land uses, although most is agricultural land used for the production of cereals and root crops, there is also some animal husbandry and horticulture.

The landscape value of North Norfolk is recognised in its designation as part of the Norfolk Coast Area of Outstanding Natural Beauty (AONB).

Fisheries in the Rivers Burn, Glaven and Stiffkey are diverse, though populations are limited in some parts of the watercourses by degraded habitats and barriers to migration. There are, however, thriving brown trout populations and the rivers may have potential for sea trout if access and spawning habitat is improved.

There is no key centre for growth in the North Norfolk catchment which is planned as part of the East of England region, though small scale development is expected throughout the area and development actions (refer to annex C) will be required to ensure achievement of good ecological status and prevent the deterioration of water bodies.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 42 km of rivers to at least good status for fish
- 12 km of rivers to at least good status for invertebrates.
North West Norfolk

Currently, 12 km of rivers in this catchment are achieving either good or potentially good status. Although we are assuming little change by 2015, we hope to be able to improve on this target as more actions become available to address pressures. Our target for 2027 is that all water bodies will achieve good status or good potential.

The North West Norfolk catchment comprises an area of approximately 1,000 km² which stretches from Denver to Hunstanton, with major urban areas including Kings Lynn, Downham Market and Hunstanton. This area contains the River Great Ouse (north of the Denver Sluice); the Rivers Heacham, Ingol, Babingley and Nar which originate as springs from the chalk uplands in the east of the area and flow into The Wash; and the lowlands to the west of the Ouse as far as the River Nene. The Fenland region to the west is crossed by numerous man-made drainage channels most of which drain into the Middle Level Main Drain. The catchment drains to the tidal River Great Ouse, which outfalls to The Wash.

The North West Norfolk catchment is predominantly rural with a population of 109,000. Most of the population depends, in different ways and degrees, upon the catchment for a living. The countryside is predominantly agricultural in character, gently undulating in form and containing many areas of diverse landscapes. The quality of the agricultural land is indicated by the fact that about a quarter of its land is classified as ‘high quality’ land and is an important national and local resource.

The catchment supports a balanced ecosystem and contains sites of exceptional environmental value which include the River Nar, Roydon Common and Dersingham Bog.

Rivers in the low-lying fenland areas are slow flowing, with the result that dissolved oxygen levels are low. Nutrient enrichment is a significant problem in parts of the catchment. Almost all of the catchment to the east of the Great Ouse has been designated a Nitrate Vulnerable Zone (NVZ) under the EC Nitrates Directive.

The key centre of growth planned for this catchment is Kings Lynn where an additional 9,000 homes are planned to be built by 2021. Development actions (refer to appendix C) will be required to achieve good ecological status and prevent deterioration.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 21 km of rivers to at least good status for ammonia
- 28 km of rivers to at least good status for dissolved oxygen
- 52 km of rivers to at least good status for fish
- 3 km of rivers to at least good status for phosphate

Old Bedford including the Middle Level

Currently, none of the surface water bodies are achieving either good or potentially good status. Although we are assuming little change in overall status by 2015, we hope to be able to improve on this target as more actions become available to address physical pressures. Our target for 2027 is that all water bodies will achieve good status or good potential.

The Old Bedford, including Middle Level catchment comprises an area of approximately 921 km², with major urban areas including Whittlesey, March, Ramsey and Chatteris. The local area comprises the Ouse Washes and the Middle Level River Systems.

The Ouse Washes (32 km from Earith to Denver) were created in the 17th century to provide storage of floodwater from the Bedford Ouse catchment. As one of the few remaining areas of Washland, the seasonally flooded Washes support important numbers of wintering and breeding wetland birds. The site is also important for aquatic plants and invertebrates. Another important protected area is Woodwalton Fen.

The Middle Level, 80 per cent of which is fenland and below sea level, is administered by the Middle Level Commissioners. The economy of this rural area is dependent on agriculture due to the creation of some of the most productive soils for arable farming in the UK by historic draining of the Fens.

The very nature of the watercourses in this fenland area, being predominantly man-made pumped drains and low-lying, result in very low dissolved oxygen levels. Nutrient enrichment arising from agricultural run-off and sewage treatment works can encourage excessive weed and algal growth that can also affect water quality. Both the Middle Level River System and the freshwater section of the Hundred Foot River have been designated as Sensitive Areas (Eutrophic) under the Urban Waste Water Treatment Directive. Large parts of the catchment have also been designated a Nitrate Vulnerable Zone (NVZ) under the EC Nitrates Directive.

There is no key centre for growth in the Old Bedford catchment. However, existing towns such as March and Chatteris will have significant development (8,000 homes). Development actions (refer to annex C) will be required to achieve good ecological status and prevent deterioration.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 6 km of rivers to at least good status for ammonia
- 70 km of rivers to at least good status for dissolved oxygen
- 58 km of rivers to at least good status for phosphate

Figure 18: Progress towards achieving overall good status and potential in rivers in the Old Bedford including the Middle Level catchment
Upper Ouse and Bedford Ouse

Currently, 29 km of rivers in this catchment are achieving either good or potentially good status. We are proposing that by 2015 this would increase to 42 km compliance. Our target for 2027 is that all water bodies will achieve good status or good potential.

The Upper Ouse and Bedford Ouse catchment covers an area of approximately 3,000 km². The River Great Ouse dominates the area, from its source north of Brackley, all the way to Earith. The Grand Union Canal also bisects the upper catchment.

The catchment supports a wide range of recreational activities, an important navigation and abstraction for a number of uses, including agriculture, public water supply and industry. The major aquifers are the Chalk, Lower Greensand and the Bedford Oolite. The Environment Agency also operates, in partnership with Three Valleys Water, the River Hiz Support Scheme, whereby groundwater can be pumped into the rivers Hiz and Oughton to support it in times of low flow.

Nutrient enrichment is the main water quality problem in the catchment. Both the River Great Ouse and River Ouzel have been designated as Sensitive Areas (Eutrophic) under the Urban Waste Water Treatment Directive (UWWTD) and the majority of the catchment is designated a Nitrate Vulnerable Zone (NVZ).

The character of the land varies from gently rolling in the upper catchment, moving to more extensive river valley flood plains and flood meadows downstream. These areas support a number of wetland sites, including the Special Area of Conservation (SAC) Portholme Meadow. Land use is predominantly agricultural with the major urban areas including Milton Keynes, Leighton Buzzard, Bedford, Hitchin and Huntingdon.

Key centres of growth are planned by 2021 at Milton Keynes (31,000), Bedford & Marston Vale (17,000) and Huntingdon (8,000). In addition, a potential Ecotown has been proposed at Marston Vale. Pressures from the cumulative impacts of planned development, especially those on water resources and water quality mean that actions (refer to annex C) will be required to achieve good ecological status and ensure that there is no deterioration.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 49 km of rivers to at least good status for ammonia
- 31 km of rivers to at least good status for dissolved oxygen
- 33 km of rivers to at least good status for fish
- 123 km of rivers to at least good status for phosphate

River Welland

Currently, 58 km of rivers in this catchment are achieving either good or potentially good status. We are proposing that by 2015 this would increase to 78 km compliance. Our target for 2027 is that all water bodies will achieve good status or good potential.

The Welland catchment covers an area of approximately 1,656 km² and includes the urban areas of Market Harborough, Uppingham, Oakham, Stamford, northern fringe of Peterborough, Market Deeping and Spalding.

From the headwaters of the River Welland to Stamford a series of small tributaries flow to the north bank of the river. These have steep valley slopes, whilst the Welland itself meanders across a wide floodplain. To the east, the Fenland area predominates and is characterised by low-lying terrain. Here, local Internal Drainage Boards maintain a network of drains, which control water levels.

The major aquifer in the catchment is the Southern Lincolnshire Limestone which is an important source of raw water for public water supply. The River Welland is an important source of raw water for both public water supply to Rutland Water and industrial supply to Eyebrook Reservoir. The river is also important for navigation and recreation, in particular Rutland Water and the river corridor through Stamford are heavily used, particularly during summer months.

There are a number of areas within the catchment which are of important nature conservation value. Along the higher ground of the Welland Valley there are surviving remnants of ancient woodland. These form important habitats for invertebrates, plants, birds and mammals. Another important site is Rutland Water, created by impoundment of the Gwash valley. This reservoir has been designated as a Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site as it is a major wetland area.

Key centres of growth are planned for the catchment by the East Midlands Region. By 2021, additional homes are planned at Market Harborough (4,000) and Spalding (7,000). Development actions (refer to annex C) will be required to achieve good ecological status and prevent deterioration of water bodies.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 48 km of rivers to at least good status for ammonia
- 15 km of rivers to at least good status for dissolved oxygen
- 6 km of rivers to at least good status for invertebrates
- 51 km of rivers to at least good status for phosphate.

Currently, 21 km of rivers in this catchment are achieving either good or potentially good status. We are proposing that by 2015 this would increase to 63 km compliance. Our target for 2027 is that all water bodies will achieve good status or good potential..

The Witham catchment lies within the county of Lincolnshire. The River Witham rises south of Grantham, passes through Lincoln and drains to The Wash at Boston. Other significant rivers include the Rivers Brant, Till, Bain, Slea and the extensive network of drainage systems in the East and West Fens north of Boston.

There are several urban areas supporting engineering and service-based industries within the catchment. The remainder of the area is extensively rural with good agricultural land. Drainage has historically had a significant effect on the catchment; much of the Fen areas are below sea level. Here, local Internal Drainage Boards maintain a network of drains, which control water levels.

The catchment benefits from the Trent Witham Ancholme River Transfer Scheme. This is a key infrastructure link for managing water resources, maintaining summer water levels and meeting agricultural, public water supply and industrial needs.

The catchment includes over 150 Sites of Special Scientific Interest (SSSIs) in addition to the southern tip of the Lincolnshire Wolds; an Area of Outstanding Natural Beauty (AONB) which has important conservation value. The catchment contains a diverse and prolific fish community. However, a number of barriers to fish movement also exist throughout the catchment which can add to problems of flow stress and reduced oxygenation during the summer months.

Key centres of growth are planned, particularly at Lincoln with 28,000 new homes. Development actions (refer to annex C) will be required to achieve good ecological status and prevent deterioration of water bodies. A potential Ecotown has been also been proposed in the catchment at Manby.

Proposed flood alleviation schemes offer opportunities to create new habitat, such as salt marshes, through managed realignment of coastal flood defences.

By 2015, due to improvements in water company discharges, reductions in diffuse pollution and better focussing of Environment Agency resources we predict the improvement of:

- 40 km of rivers to at least good status for ammonia
- 20 km of rivers to at least good status for invertebrates
- 105 km of rivers to at least good status for phosphate

Proposed objectives for estuarine (transitional) and coastal water bodies

Currently, none of our coastal and estuarine water bodies are achieving either good or potentially good status. Although we are assuming little change by 2015, we hope to be able to improve on this target as more actions become available, such as those from shoreline management plans (to be published in 2010) and catchment flood management plans to address physical pressures. Our target for 2027 is that all water bodies will achieve good status or good potential.

The Anglian coasts and estuaries stretch for over 1,800 km from Mablethorpe, on the Lincolnshire coastline, to Canvey Island in the Outer Thames. Several large estuaries including the Wash Embayment, Orwell, Colne and Blackwater discharge to this coastal zone, which also extends inland to include the tidal waters of the Broadland Rivers – Waveney, Bure and Yare.

The main coastal towns include Great Yarmouth, Lowestoft and Southend-on-Sea, with Kings Lynn, Ipswich, Colchester and Maldon at the head of the main estuaries.

Much of the coastline is afforded national and international protection for the important habitats and species present, or the landscape and heritage value. The estuaries support internationally important numbers of birds visiting the wetland habitats such as saltmarsh and intertidal mudflats. Much of this habitat is threatened by coastal squeeze. Other habitats of importance include sand dunes, Broadland grazing marshes and shingle ridges. Sub-tidal habitats, such as mobile sand banks are equally protected for the marine animals and plants they support. The designation of a new marine Special Area of Conservation (SAC) off the North Norfolk coastline is currently under consideration.

Large numbers of people visit the coast for the natural attractions but many also visit the 200 km of lock-free navigable waterways in The Broads, and the 38 recognised bathing beaches. The 'Blue Flag' status of several of these beaches highlights the good water quality alongside beach amenities. The estuaries in particular are also very popular areas for recreational sailing and other watersports. Conflict between different boat activities can occasionally be an issue in localised areas.

Ports at Felixstowe and Harwich provide nationally significant facilities for container and general cargo handling. Great Yarmouth and Lowestoft ports also provide support for the North Sea offshore oil and gas industries. Great Yarmouth is undergoing major expansion with the construction of an outer harbour. There are also major port developments at Harwich and the redevelopment of Shellhaven (in the adjacent Thames River Basin District) that could have ecological implications, for example, on estuary fisheries.

These and other ports such as Kings Lynn also help support the offshore marine aggregates industry, focused in the Active Dredge Areas off the Lincolnshire coast, Lowestoft and Felixstowe.
There are commercial shellfisheries in all the main estuaries for mussels, cockles and oysters. In the Wash there are also significant fisheries for brown and pink shrimp, whelks and flatfish, and eels are still caught on a commercial basis in the tributary estuaries, although eel populations have declined significantly.

The estuaries have diverse fish communities and are important nursery areas for many estuarine and marine species, including bass.

Continuation of nuclear energy generation is currently under consideration at Sizewell Power Station. In addition, the east coast has become important for offshore wind power, most notably at windfarms off Lowestoft and Great Yarmouth, with others under construction off Skegness and Clacton. These may influence the fixed bed fauna and fish and bird migration routes.

Large areas of hinterland lie below sea level, currently being defended by a combination of natural defences, old sea walls and newer sea defences. There are several areas becoming susceptible to flooding, and long-term strategies to manage the flood defences are currently being developed in conjunction with Shoreline Management Plans. Flood alleviation schemes offer opportunities to create new coastal habitat, as exemplified by the creation of salt marsh in the Blackwater Estuary through managed realignment of coastal flood defences.

Water quality along the open coast and particularly in the estuaries has improved greatly in recent years in part, due to significant investment in several large sewage treatment works servicing the larger conurbations in the wider catchments. Some of the Essex and Suffolk estuaries, infrequently experience high heavy metal levels; a legacy of past industrial activities.

Urban and agricultural diffuse inputs are increasingly being highlighted as possible sources of contamination, particularly nutrients and faecal indicator organisms. Actions (refer to annex C) are being proposed to address these issues and ensure that good ecological status is achieved.

Proposed groundwater objectives for Anglian River Basin District

Currently, 68 per cent of ground water bodies in the River Basin District are achieving good quantitative status, whilst 65 per cent achieve good chemical status. We are proposing that by 2015 we would achieve 71 per cent compliance for quantity with no change for chemical compliance. Our target for 2027 is that all water bodies will achieve good status or good potential for both quantity and chemical measures.

The Anglian River Basin District contains 39 groundwater bodies. In some instances the groundwater bodies are an amalgamation of aquifers because they are connected and groundwater is exchanged between them.

The main aquifers in the Anglian Basin are the Chalk and Lincolnshire Limestones. The Chalk runs from the north Norfolk coast towards London and the limestone runs down the spine of Lincolnshire. Significant groundwater is also obtained locally from some sandy aquifers such as the Crag in Norfolk and Suffolk, the Woburn Sands in Bedfordshire and Sandringham Sands in north west Norfolk.

Groundwater is used for public water supply, industry and agriculture across the river basin and is under significant pressure from diffuse pollution. This is manifest principally as nitrate, phosphates, herbicides and pesticides.

The potential impact of diffuse pollution on groundwater is dependent on whether the aquifers are protected by overlying rocks such as boulder clay, and whether the water table is close to the surface. The manner in which groundwater flows is also a factor and where cracks and fissures contribute to flow, the impacts of diffuse pollution can be spread widely.

Areas where the groundwater may rapidly be affected by diffuse pollution are the Lincolnshire limestone or the Cambridgeshire Bedfordshire Ouse Chalk. Here, the aquifers are exposed at the surface and rising nitrate trends in the groundwater are generally evident. This has significant implications for public water supply as it increases the need for blending and, over time, the cost of water treatment for supply is likely to increase.

Key centres of urban growth are planned throughout the River Basin District by 2021. These will place cumulative pressures on groundwater abstraction in areas where resources are fully committed and result in greater discharge and treatment of effluents.
Summary sector action plan

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

Impact assessment

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 our preferred scenario B as laid out in this draft plan, along with scenario C, which is more ambitious but more costly. The results of the impact assessment are briefly noted in this section.

The impact assessment is limited by both our 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.

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](http://www.environment-agency.gov.uk/wfd) or from the contact given at the end of this document.

Scenarios and what they mean in the draft River Basin Management Plan

What is already happening and what will happen – Scenario A

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, that 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.

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 Anglian River Basin District almost all of the Scenario A costs are met by the water industry, with approximately 80% of the these costs arising from PR04 and 20% 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.

This expenditure is also delivering significant benefits. Our best estimate puts this at £16.7 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.

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

Costs

<table>
<thead>
<tr>
<th>Average annual undiscounted costs (£m)</th>
<th>Total PV (£m)</th>
<th>% of PV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td>35.4</td>
<td>2,079.9</td>
<td>35.4</td>
</tr>
</tbody>
</table>

- Water Industry (88.9%)
- Agricultural and Rural Land Management (9.8%)
- Environment Agency (1.3%)

Benefits

<table>
<thead>
<tr>
<th>Average annual undiscounted benefits (£m)</th>
<th>Total PV (£m)</th>
<th>Other benefits not expressed in monetary terms include:</th>
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<tr>
<td></td>
<td></td>
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<tr>
<td>16.7</td>
<td>323.1</td>
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</tbody>
</table>

- Reduced operation costs to water companies due to improved water quality, in particular reduced concentrations of nitrate and pesticides;
- Protection and enhancement of material assets due to reduced alien species pressures, for example zebra mussels which attach to infrastructure in large numbers;
- Human health benefits due to improvements in water quality of recreational water bodies;
- Reduced quantities of waste sent to landfill due to revised dredging techniques; and
- Reduced long-term costs of coastal defence due to measures which encourage natural coastal erosion.

Additional actions that will happen if this plan is approved – Scenario B

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 Anglian river basin district. Scenario B sets out the actions proposed in this plan.

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.

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, central government and

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7 PV – Present value is the value on a given date of a future payment or series of future payments, discounted to reflect the time value of money and other factors such as investment risk.

the Environment Agency. This expenditure is also delivering significant benefits. Our best estimate puts this at £5.0 million per year, of which 32% relates to cost savings from investigations and 68% relates to the publics’ willingness to pay for surface water improvements.

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.

**Costs**

<table>
<thead>
<tr>
<th>Average annual undiscounted costs (£m)</th>
<th>Total PV (£m)</th>
<th>% of PV</th>
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<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td>7.5</td>
<td>249.3</td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water Industry (87.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Central Government (6.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Environment Agency (3.3%)</td>
</tr>
</tbody>
</table>

**Benefits**

<table>
<thead>
<tr>
<th>Average annual undiscounted benefits (£m)</th>
<th>Total PV (£m)</th>
<th>Other benefits not expressed in monetary terms include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0</td>
<td>64.9</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Actions that could happen if we were more certain they would be proportionate and feasible – Scenario C**

There are further actions which, if implemented, could lead to even greater environmental protection and improvement. However, we may need a better understanding of how to implement these actions, or how effective they will be, so that we 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 us justify including scenario C actions in the River Basin Management Plan.

Delivering Scenario C implies additional costs over Scenarios A and B. The three main sectors bearing these additional costs are the Environment Agency, angling and conservation and central government. This expenditure is also delivering benefits through cost savings from investigations.

**Costs**

<table>
<thead>
<tr>
<th>Average annual undiscounted costs (£m)</th>
<th>Total PV (£m)</th>
<th>% of PV</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Environment Agency (60.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Angling and conservation (18.7%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Central Government (6.4%)</td>
</tr>
</tbody>
</table>
## Benefits

<table>
<thead>
<tr>
<th>Average annual undiscounted benefits (£m)</th>
<th>Total PV (£m)</th>
<th>Other benefits not expressed in monetary terms include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>0.3</td>
<td>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.</td>
</tr>
</tbody>
</table>

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 and manage diffuse pollution.

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

» 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 scenarios A and B, grouped by catchments, is included in annex B.

» Information about the actions associated with hydromorphology can be found in annex C.
Summary of key contributions from different sectors

The following tables below set out a summary of some of the key actions that the sectors will be expected to lead on, or where they will be the main partner.

This is a summary of the actions that will be taken. Full tables of actions are in annexes 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 www.environment-agency.gov.uk/maps
### Agriculture and rural land management

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catchment Sensitive Farming, including advice to farmers on best practice and small grants for capital investment.</td>
<td>Helps to minimise sediment, nutrient and pesticides leaching from farm land.</td>
<td>Priority catchment areas: Bure and Muckfleet Deben, Alde and Orr Gipping and Orwell Lincolnshire coastal Little Ouse Nar North Norfolk Waveney Wensum Yare</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Training programme for farmers of irrigated crops.</td>
<td>Improves efficient use of water.</td>
<td>Throughout the River Basin District (RBD).</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Promotion of Higher Level Environmental Stewardship.</td>
<td>Targeted resource protection under environmentally sensitive farming practices. Helps to reduce pollution from agriculture.</td>
<td>Target Areas.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Pesticide Voluntary Initiative (VI).</td>
<td>General advice and targeted advice in specific areas.</td>
<td>Throughout the RBD.</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

### Additional actions that will happen if this plan is approved – scenario B

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension to Catchment Sensitive Farming, including advice to farmers on best practice and small grants for capital investment.</td>
<td>Helps to minimise sediment, nutrient and pesticides leaching from farm land.</td>
<td>Priority catchment areas: Blyth, Stour and Colne catchments.</td>
<td>2009/11</td>
</tr>
<tr>
<td>Introduction of Strategic Partnership Catchments.</td>
<td>Partnership working between the Catchment Sensitive Farming Initiative and other organisations.</td>
<td>Blackwater and Chelmer Great Ouse (including Ouse Washes)</td>
<td>2008/10</td>
</tr>
<tr>
<td>Promotion of abstraction groups and storage reservoirs in rural areas.</td>
<td>Increases water use efficiency and provides seasonal storage of irrigation water for use at times of water shortage.</td>
<td>Throughout the River Basement District (RBD).</td>
<td>2015</td>
</tr>
<tr>
<td>Enforcement of revised Nitrate Vulnerable Zone</td>
<td>Helps to achieve WFD priorities by reducing pollution from agriculture and New Nitrate Vulnerable Zones.</td>
<td>From 2009</td>
<td></td>
</tr>
</tbody>
</table>
## Agriculture and rural land management

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Plan.</td>
<td>complies with protected area objectives.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Actions that could happen if we were more certain they would be proportionate and feasible – scenario C

| Where appropriate 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. | Provision of a regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or unlikely to work. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits | Initially around eight WPZs in locations to be decided across England and possibly Wales. | 2009 and 2012 |
| Provision of education, information to non agricultural land owners (e.g. golf courses, paddocks) etc. Improve understanding of soils and pesticides. | Helps to achieve WFD priorities by reducing diffuse pollution. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits | Throughout the RBD. | 2015 |
| Establish local Water Framework Directive (WFD) issue groups to address specific pressures. | Builds on the success of water abstractor groups and applies these to address other significant issues. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits | Throughout the RBD. | 2015 |
### Angling, fisheries and conservation

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
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</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Develop and deliver programme of habitat management work to improve fish habitats.</td>
<td>Improves river habitat quality.</td>
<td>In rivers with poor habitat quality.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Baston and Thurlby Fens restoration project.</td>
<td>Gravel workings are being restored to fenland habitats rather than low-level agriculture. Expansion of last remnants of Fenland in Lincolnshire to landscape scale.</td>
<td>South Lincolnshire.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>River Wensum Restoration Strategy Project.</td>
<td>Large scale habitat improvements to restore favourable conditions for a large range of fish species.</td>
<td>River Wensum, Broadland catchment.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Saltmarsh creation at Wallasea Island.</td>
<td>A £7.5 million project to return 115 ha of Wallasea Island to its original saltmarsh was completed in 2006, providing wintering grounds for wildfowl and wading birds. Restoration is planned on a further 600 ha at Wallasea which will create new saltmarsh, mudflat and saline lagoons, and ease flood problems on the River Crouch.</td>
<td>Wallasea Island, Essex.</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Additional actions that will happen if this plan is approved – scenario B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigate and where appropriate manage physical impacts of commercial inshore fisheries through establishment of marine protected areas and code of conduct.</td>
<td>Improves marine biodiversity and fisheries productivity, protect marine sites of nature conservation importance.</td>
<td>Areas to be identified.</td>
<td>2015</td>
</tr>
<tr>
<td>Remove and control invasive non-native species</td>
<td>Identifies and controls invasive species in key hot areas to be identified.</td>
<td>Areas to be identified.</td>
<td>2015</td>
</tr>
</tbody>
</table>

### Angling, fisheries and conservation

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>from problem sites and promote good habitat management.</td>
<td>spots to reduce the risk of spread and limit local ecological damage.</td>
<td>identified.</td>
<td></td>
</tr>
<tr>
<td><strong>Actions that could happen if we were more certain they would be proportionate and feasible – scenario C</strong></td>
<td><strong>What this does</strong>&lt;br&gt;Restoration of catchments through voluntary partnership agreements. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits.</td>
<td><strong>Where</strong>&lt;br&gt;Throughout the RBD.</td>
<td><strong>When</strong> 2015</td>
</tr>
<tr>
<td>Additional catchment rehabilitation, through the establishment of River Restoration Trusts throughout the River Basin District (RBD).</td>
<td><strong>What this does</strong>&lt;br&gt;Create new nature reserve covering 56 km² between Cambridge and Wicken Fen, including open water and marsh areas. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits.</td>
<td>Cam and Ely Ouse.</td>
<td>Next 100 years</td>
</tr>
<tr>
<td>Wicken Fen Vision.</td>
<td><strong>What this does</strong>&lt;br&gt;Helps to address diffuse pollution. Currently little information on septic tank locations, illegal discharges, effect and importance. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits.</td>
<td>Rural areas of the RBD.</td>
<td>2015</td>
</tr>
<tr>
<td>Joint project to investigate impact of septic tanks.</td>
<td><strong>What this does</strong>&lt;br&gt;Helps to address diffuse pollution. Currently little information on septic tank locations, illegal discharges, effect and importance. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits.</td>
<td>Rural areas of the RBD.</td>
<td>2015</td>
</tr>
</tbody>
</table>
**Central Government**

<table>
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<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
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</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pesticides Safety Directorate National Approvals mechanism for Plant Protection Products.</td>
<td>Provides approvals for pesticides.</td>
<td>Nationally</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Offer tax incentives for the purchase of efficient plant and fittings by commercial organisations (Defra)</td>
<td>Reduces water demand</td>
<td>Nationally</td>
<td>2010</td>
</tr>
<tr>
<td><strong>Additional actions that will happen if this plan is approved – scenario B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of funding for construction of irrigation and industrial supply reservoirs.</td>
<td>Part-funding available for agricultural and industrial reservoirs.</td>
<td>Nationally</td>
<td>2008</td>
</tr>
<tr>
<td>Implement the action plan to support the “Invasive non-native species framework strategy for Great Britain”, prioritising the achievement of ‘no deterioration in status’.</td>
<td>Helps waters reach good ecological potential.</td>
<td>Nationally</td>
<td>2009</td>
</tr>
<tr>
<td>A statutory code of practice to provide guidance on the use and management of septic tanks is under preparation for use in conjunction with the forthcoming amended groundwater regulations and Environmental Permitting Regulations</td>
<td>Helps to prevent and limit inputs of pollutants to surface waters and groundwaters</td>
<td>Nationally</td>
<td>2015</td>
</tr>
<tr>
<td><strong>Actions that could happen if we were more certain they would be proportionate and feasible – scenario C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring parasites and diseases in the wild through the Fish Health Directive, Alien Species Regulations, S30.</td>
<td>Monitoring programme of parasites and diseases. Uncertain if cost of measure is proportionate - further work needed to improve</td>
<td>Nationally</td>
<td>2008</td>
</tr>
</tbody>
</table>
### Central Government

<table>
<thead>
<tr>
<th>Action</th>
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<th>Where</th>
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<tbody>
<tr>
<td>Defra is considering the need to take action on phosphates in the water environment and the contribution that controls on domestic laundry cleaning products might make to that process.</td>
<td>Would help to control the amount of phosphorus in waste waters and in sewage effluent, and help to reduce the risk of eutrophication. Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits.</td>
<td>Nationally</td>
<td>2015</td>
</tr>
<tr>
<td>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.</td>
<td>Helps to prevent and limit inputs of pollutants to surface waters. Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits.</td>
<td>Nationally</td>
<td>2015</td>
</tr>
<tr>
<td>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.</td>
<td>Reduce emissions of priority substances, priority hazardous substances or specific pollutants as well as organic pollution from urban and industrial activity. Uncertain if cost of measure is proportionate – further work needed to improve confidence in expected benefits.</td>
<td>Nationally</td>
<td>2015</td>
</tr>
</tbody>
</table>

### Environment Agency

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td>Raises awareness of pollution prevention and its impacts. Enforcement carried out when necessary.</td>
<td>Across Anglian River Basin District (RBD).</td>
<td>2015</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
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</thead>
<tbody>
<tr>
<td>campaigns and the use of farm and factory visits).</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Investigations at water-dependent nature conservation sites perceived to be adversely affected by abstraction.</td>
<td>Determines whether action is needed to improve the ecology of these sites.</td>
<td>In water bodies identified via the Review of Consents process and the Restoring Sustainable Abstraction Programme.</td>
<td>2015 and 2021</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Additional actions that will happen if this plan is approved – scenario B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deliver a programme of improvements to priority obstructions to fish and eels.</td>
<td>Opens up previously inaccessible areas to fish movement.</td>
<td>At priority sites across the RBD.</td>
<td>2015</td>
</tr>
<tr>
<td>Investigations to determine cost effective actions to support Good Ecological Potential in modified water bodies.</td>
<td>Helps waters reach good ecological potential.</td>
<td>Priority artificial and heavily modified water bodies.</td>
<td>2015</td>
</tr>
<tr>
<td>Implement the action plan to support the “Invasive non-native species framework strategy for Great Britain”, prioritising the achievement of ‘no deterioration in status’.</td>
<td>Helps waters reach good ecological potential.</td>
<td>Impacted water bodies throughout Anglian River Basin District</td>
<td>2009</td>
</tr>
<tr>
<td>Investigations to determine cost effective actions to manage abstraction to support Good Ecological Status.</td>
<td>Helps waters reach good ecological status.</td>
<td>Impacted water bodies.</td>
<td>2021</td>
</tr>
<tr>
<td><strong>Actions that could happen if we were more certain they would be proportionate and feasible – scenario C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhanced programme of GiA-funded pollution prevention, response and enforcement action (e.g. site visits, campaigns and use of anti-pollution works notices).</td>
<td>Raises awareness of the need for responsible handling and disposal of chemicals, oil and other pollutants. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Water bodies identified as being at risk.</td>
<td>2015</td>
</tr>
</tbody>
</table>
### Industry, manufacturing and other business

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
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</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remediation of contaminated land and groundwater.</td>
<td>Helps to achieve Water Framework Directive (WFD) priorities by preventing and limiting inputs of pollutants to groundwater and surface water.</td>
<td>Urban and industrial areas.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Marketing and use restrictions for specific substances e.g. trichloroethylene and some mercury uses.</td>
<td>Restricts use of priority substances, priority hazardous substances or specific pollutants within industry, manufacturing and other business.</td>
<td>Across the European Union.</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

| **Additional actions that will happen if this plan is approved – scenario B** | | |
| Investigate discharges from industries e.g 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. | At specific sites across the River Basin District (RBD). | 2015 |

| **Actions that could happen if we were more certain 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. | Provides a regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or unlikely to work. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits. | Initially approximately eight WPZs in locations to be decided across England and possibly Wales. | From 2009 with possibility of further WPZs from 2012 |
| Education campaigns to increase the understanding and use of best practice and enforcement in industry. | Helps to mitigate the pressures from discharges and abstractions. | Throughout the River Basin District (RBD). | 2015 |
| Local partnerships between business, federations, NGOs and authorities to reduce oil pollution and maximise the efficient collection of waste oil. | On-site visits, education to reduce oil pollution. Uncertain if cost of measure is proportionate - further work needed to improve confidence in | Throughout the RBD. | 2015 |
### Industry, manufacturing and other business

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigation into the implementation of water recycling systems,</td>
<td>Helps to mitigate the pressures from discharges and abstractions. Uncertain</td>
<td>Throughout the</td>
<td>No specified</td>
</tr>
<tr>
<td>rainwater harvesting from roofs and hardstanding areas and leakage</td>
<td>if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>monitoring.</td>
<td>RBD.</td>
<td>date</td>
<td>date</td>
</tr>
</tbody>
</table>
## Local and regional government

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclusion of water efficiency and groundwater protection policies in Regional Spatial and Economic Strategies and Local Development Plans.</td>
<td>Helps to achieve Water Framework Directive (WFD) priorities by promoting sustainable water use and preventing and limiting inputs of pollutants to groundwater and surface water.</td>
<td>Water stressed areas.</td>
<td>2008 onwards</td>
</tr>
<tr>
<td>Promotion of the wide-scale use of sustainable drainage schemes for flood risk.</td>
<td>Reduces risks of flooding and of impact on surface water quality at times of high rainfall.</td>
<td>Nationally.</td>
<td>2008 onwards</td>
</tr>
<tr>
<td>River Nene Regional Park – part of growth area agenda.</td>
<td>Key aim is to deliver green infrastructure as an integral element of the proposed development of housing in the growth area.</td>
<td>Northamptonshire and Peterborough.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Establishment of Waterwise East.</td>
<td>Has the remit to influence planners and developers to encourage water efficiency throughout the East of England Region.</td>
<td>East of England region.</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Additional actions that will happen if this plan is approved – scenario B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage the enhanced use of sustainable drainage schemes.</td>
<td>Reduces risks of flooding and urban pollution of surface waters during periods of high rainfall.</td>
<td>Nationally.</td>
<td>By 2010</td>
</tr>
<tr>
<td>Promotion of national guidance for spatial planners and other professions on the integration of development planning and water planning.</td>
<td>Reduces the risk of pollution and flow issues arising in water bodies caused by new development.</td>
<td>Nationally.</td>
<td>By 2010</td>
</tr>
<tr>
<td><strong>Actions that could happen if we were more certain they would be proportionate and feasible – scenario C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of WFD compliant strategies for green infrastructure delivery as an integral element of the development process.</td>
<td>Uses natural processes to meet the objectives of the WFD. Allows better access for water course maintenance; attenuates flood waters, etc. Uncertain if cost of</td>
<td>Throughout the River Basin District (RBD).</td>
<td>2015</td>
</tr>
</tbody>
</table>
## Local and regional government

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Promote inclusion of water environment quality targets in Local Area Agreements.</td>
<td>measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Nationally.</td>
<td>By 2015</td>
</tr>
<tr>
<td>Inclusion of policies for water neutrality in Regional Spatial Strategies and Local Development Frameworks for new development including retro-fitting of existing developments.</td>
<td>Increases local authority accountability for the quality of the water environment. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Water stressed areas.</td>
<td>By 2015</td>
</tr>
<tr>
<td>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</td>
<td>Makes the maintenance of flows in fresh water bodies more achievable and reduces risks from water transfer. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Basin District (RBD).</td>
<td>2015</td>
</tr>
</tbody>
</table>
### Mining and quarrying

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comply with regulations such as those for Contaminated Land and Groundwater.</td>
<td>Prevents and limits pollution of groundwater.</td>
<td>Nationally.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Assessment of the potential benefit of extractive sites to the water environment through restoration provisions, i.e. flood storage, wetland nature reserves, recreation, etc.</td>
<td>Provides benefits to the water environment, especially through partnership working with others.</td>
<td>Quarry sites throughout the River Basin District (RBD).</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Additional actions that will happen if this plan is approved – scenario B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigate emissions from abandoned and working sites and appraise options for action.</td>
<td>Identifies sources of priority substances, priority hazardous substances or specific pollutants to allow development of effective programmes of actions.</td>
<td>Sites contributing to potential quality failures.</td>
<td>2015</td>
</tr>
<tr>
<td>Availability of funding for construction of irrigation and industrial supply reservoirs.</td>
<td>Provides supply resilience and reduces impact on water resources.</td>
<td>Throughout the RBD.</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Actions that could happen if we were more certain they would be proportionate and feasible – scenario C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigation of large industrial processes that abstract water from surface water and groundwater, work with these businesses to develop a code of best practice for the implementation of water recycling systems, rainwater harvesting systems and leakage monitoring.</td>
<td>Reduces pressure on water resources. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Throughout the RBD on a site by site basis.</td>
<td>No specific date</td>
</tr>
</tbody>
</table>
### Navigation and ports

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ports, harbour and navigation authorities aim to have in place dredging and disposal regimes that are compatible with achieving Good Ecological Status or Good Ecological Potential.</td>
<td>Reduces emissions of priority substances, priority hazardous substances or specific pollutants from navigation.</td>
<td>Ports and inland navigation within the River Basin District (RBD).</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Additional actions that will happen if this plan is approved – scenario B</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review existing licensing controls for dredging major new channels inside and outside harbour limits.</td>
<td>Reduces emissions of priority substances, priority hazardous substances or specific pollutants.</td>
<td>Where contributing to potential EQS failures.</td>
<td>2012</td>
</tr>
<tr>
<td>Develop and apply national guidance frameworks on dredging and on disposal of dredgings to inform WFD actions</td>
<td>Reduces emissions of priority substances, priority hazardous substances or specific pollutants from navigation.</td>
<td>England</td>
<td>Dredging guidance 2009 Disposal guidance 2012</td>
</tr>
<tr>
<td>Sediment Management Strategy – catchment approach to sediment management.</td>
<td>Balances sediment input with the needs of water users.</td>
<td>Broads.</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Actions that could happen if we were more certain they would be proportionate and feasible – scenario C</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision of ‘greywater’ tanks on all boating craft to capture phosphates.</td>
<td>Reduction in phosphates. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Throughout the River Basin District (RBD).</td>
<td>No specific date</td>
</tr>
<tr>
<td>Promotion of design, provision and consent of appropriate moorings.</td>
<td>Considers use of floating structures and open structure jetties, thus reducing morphological impact. Uncertain if cost of measure is proportionate - further</td>
<td>Moorings throughout the RBD.</td>
<td>No specific date</td>
</tr>
</tbody>
</table>
### Navigation and ports

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction of speed limits, to limit and reduce boat wash (where no limits currently apply).</td>
<td>work needed to improve confidence in expected benefits</td>
<td>Where appropriate in the RBD.</td>
<td>No specific date</td>
</tr>
<tr>
<td>Education of the risk of transportation of alien species on hull or in ballast water.</td>
<td>Uses bylaws to prevent bank erosion. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Where appropriate in the RBD.</td>
<td>No specific date</td>
</tr>
<tr>
<td>Water Framework Directive (WFD)-proofing of existing consent processes.</td>
<td>Reduces the transference of alien species. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Throughout the RBD.</td>
<td>No specific date</td>
</tr>
</tbody>
</table>

### Urban and transport

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways Agency programme to investigate impact of soakaways.</td>
<td>Helps to achieve Water Framework Directive (WFD) priorities by limiting inputs of pollutants to groundwater and surface water.</td>
<td>Road transport network.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Follow Pesticides statutory Code of Practice advice for operators on control of</td>
<td>Prevents and limits pollution of waters.</td>
<td>River Basin District.</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

### Urban and transport

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
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</thead>
<tbody>
<tr>
<td>plant protection products.</td>
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</table>

**Additional actions that will happen if this plan is approved – scenario B**

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support to investigate emissions from sites and pollution from contaminated land.</td>
<td>Reduces uncertainty and provides additional information.</td>
<td>Sites contributing to potential environmental quality standard failure.</td>
<td>2015</td>
</tr>
<tr>
<td>Encourage sustainable and efficient use of salt/grit used on motorways, and highways – partnership with Highways Agency and local authorities</td>
<td>Limits inputs of salt to surface water and groundwater. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits.</td>
<td>Road transport network.</td>
<td>2015</td>
</tr>
<tr>
<td>Pollution prevention advice and campaigns to provide targeted advice and enforcement.</td>
<td>Reduces contaminants released to groundwater from industrial estates, petrol stations and other sources.</td>
<td>High risk areas.</td>
<td>2015</td>
</tr>
</tbody>
</table>

**Actions that could happen if we were more certain they would be proportionate and feasible – scenario C**

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
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</thead>
<tbody>
<tr>
<td>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.</td>
<td>Provides a regulatory tool to control diffuse pollution in high risk areas where other mechanisms are not working or are unlikely to work. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits.</td>
<td>Initially around eight WPZs in locations to be decided across England and possibly Wales. From 2009 with possibility of further WPZs from 2012</td>
<td></td>
</tr>
<tr>
<td>Encourage enhanced use of Sustainable Urban Drainage Systems and improved design and codes of practice for run-off, e.g. from highways and other transport – partnership with Highways Agency and local authorities.</td>
<td>Reduces emissions of priority substances, priority hazardous substances or specific pollutants from urban and transport uses. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>Throughout the River Basin District (RBD).</td>
<td>2015</td>
</tr>
<tr>
<td>Hardstanding run-off, from</td>
<td>Reduces diffuse pollution</td>
<td>Throughout the</td>
<td>No specific</td>
</tr>
</tbody>
</table>

Urban and transport

<table>
<thead>
<tr>
<th>Action</th>
<th>What this does</th>
<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>roads and other impermeable areas, is ‘treated’ first by natural methods (reed bed filtration) and other types of vegetation before being directed into the drainage system.</td>
<td>from the highway network. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits</td>
<td>RBD.</td>
<td>date</td>
</tr>
</tbody>
</table>
### Water industry

<table>
<thead>
<tr>
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<th>Where</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is already happening and what will happen – scenario A</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce leakage through active leakage control and customer supply pipe repair policies.</td>
<td>Helps ensure sufficient water for people and wildlife.</td>
<td>River Basin District (RBD).</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Improvements to water company assets under the next round of company investment (PR09) to meet statutory (non-WFD) requirements. Funding for these measures are subject to approval in 2009.</td>
<td>Deliver further water quality improvements and continue to reduce the impact of abstraction across the river basin district</td>
<td>Rivers, coasts and estuaries across the river basin district</td>
<td>2015</td>
</tr>
<tr>
<td>Complete the current round of water company asset investment.</td>
<td>Delivers water quality improvements and reduce the impact of abstraction.</td>
<td>Rivers, coasts and estuaries as identified in AMP4</td>
<td>2009</td>
</tr>
</tbody>
</table>

| **Additional actions that will happen if this plan is approved – scenario B** | | | |
| Improvements to water company assets under the next round of company investment (PR09) to meet WFD specific requirements. Funding for these measures are subject to approval in 2009. | Delivers further water quality improvements and continue to reduce the impact of abstraction across the River Basin District. | Rivers, coasts and estuaries as will be identified in PR09. | 2015 |
| Coordinated education and awareness campaign. | Promotes the value of water. | RBD. | 2008 |

| **Actions that could happen if we were more certain they would be proportionate and feasible – scenario C** | | | |
| Move towards universal metering. | Reduces water demand while ensuring water needs are met for all. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits | In water stressed areas. | No specific date |
| Investigate river transfers where appropriate, for potential resource developments to supply growth areas. | Development of additional resources in order to meet demand in water stressed areas. Uncertain if cost of measure is proportionate - further work needed to improve confidence in expected benefits | Growth areas. | No specified date |
**Water industry**

<table>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>work needed to improve confidence in expected benefits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

**Q5** What comments do you have on these actions? Are there any actions that have been missed, or any changes you’d 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?
Planning for changing conditions

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

Climate change

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.

The UK Climate Impacts Programme predicts that we will experience hotter drier summers, warmer wetter winters and rising sea levels. We need to take account of these changes 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 3: Qualitative description of how climate change may change the risk of pressures

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

Our screening analysis of the proposed actions shows that would be effective under a range of climatic conditions so they will help us 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.

No single body 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?
Development

Spatial planning contributes to achieving sustainable development and can help protect and improve the environment to help implement the Water Framework Directive. We need to work with Planning Authorities to ensure that the aims and objectives of the Water Framework Directive are understood and translated into policies within spatial planning documents.

Current spatial plans propose new development for a period until 2021 and include the construction of many thousands of new homes. We have to anticipate the impacts of this planned development and take into account the key centres where growth will take place.

Flooding and coastal erosion

Flooding and coastal erosion are very important issues, particularly in light of predicted sea level rise. These have a separate planning process alongside the new European 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.

The Environment Agency plans its flood and coastal risk management capital investment through the Medium Term Plan. The Medium Term Plan is a rolling 5 Year investment plan that lists proposed projects. From the Medium Term Plan, we will identify flood and coastal risk management activities that are relevant to the water body specific objectives contained within the River Basin Management Plan. These activities will be delivered 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.
Further information

Strategic environmental assessment

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, we will be able to make sure 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.

Habitats Directive assessments

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 (important wildlife sites identified under the European Habitats and Birds Directives and protected under the Water Framework Directive) 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 by us will determine if the objectives and actions contained within the River Basin Management Plans pass a number of tests.

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.

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.
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 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, and request further information, or contact us in any of these ways:

- email at: anglianRBD@environment-agency.gov.uk
- phone on: 08708 506 506

We will use your comments to help us 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 Anglian 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 Anglian 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 Anglian 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 us in either of these ways:

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

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

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?

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

Q4 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?

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

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

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?

Any other comments you may have on this plan.

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

Q9 Do you have any other comments on this draft plan that you haven’t already told us?
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\(^8\) 24 hour)
floodline 0845 988 1188 (24 hour)

\(^8\) Calls from mobile phones are not free and will be charged at normal network operator’s call rates.