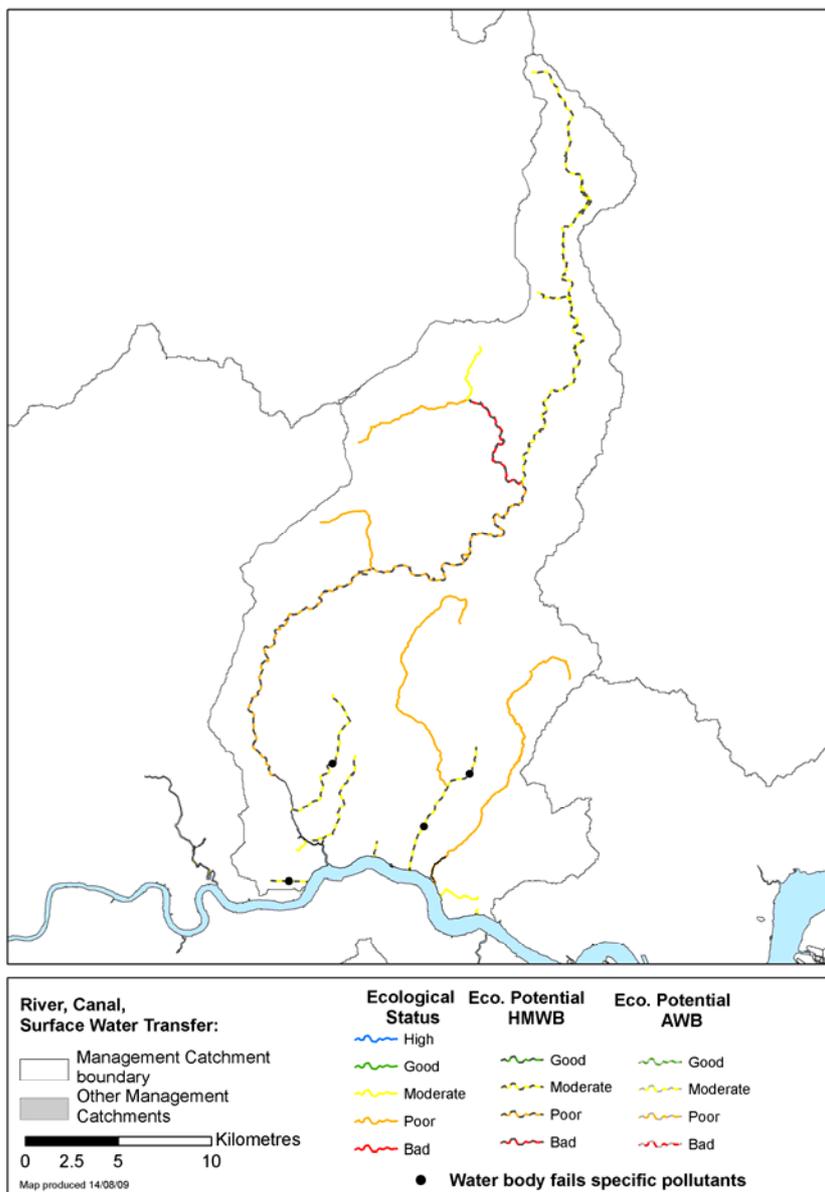


The Ingrebourne consists of two distinct river environments separated by the discharge from the Brentwood STW. Water quality is generally moderate and impacts are split between agricultural and urban diffuse pollution. Downstream of the STW the water quality is generally poor and diversity of fish species are limited.

All these rivers are tidal in their lowest reaches and include significant flood defence structures designed to protect against abnormal high tides and associated flooding.

Figure 24 **Map showing the current status/potential of rivers in the Roding, Beam and Ingrebourne catchment**



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Table 16 **Key statistics for the Roding, Beam and Ingreborne catchment at a glance**

River and lake water bodies	Now	2015
% at good ecological status or potential	0	0
% assessed at good or high biological status (9 water bodies assessed)	0	0
% assessed at good chemical status (4 water bodies assessed)	50	75
% at good status overall (chemical and ecological)	0	0
% improving for one or more element in rivers		31

There are 16 river water bodies and no lakes in the catchment. Seven are artificial or heavily modified. None of the rivers currently achieve good or better ecological or biological status/potential now, with 67 per cent at poor biological status, and 11 per cent of assessed river water bodies at bad status.

This plan will address the key pressures in the catchment, and those waters in the worst state will be prioritised. 31 per cent of rivers in the Roding, Beam and Ingrebourne will improve for at least one element by 2015.

Some key actions for this catchment

- The Environment Agency will investigate current levels of abstraction in the Upper Roding.
- The Environment Agency will work with partners to re-meander the Mayes Brook through Mayesbrook Park and improve water quality from urban diffuse pollution.
- The Environment Agency will work with partners to re-naturalise the River Ravensbourne through Harrow Lodge Park.
- The Environment Agency will work with partners to restore the Wantz Stream and the Beam through the Dagenham Washlands Flood Storage Area.
- The Environment Agency will investigate methods for improving fish passages through the tidal sluices.

South West Essex catchment



Catchment summary

The Mardyke catchment is generally low-lying with low channel gradients and flows south from the Langdon Hills to the Thames estuary, where its outflow is controlled by a tidal sluice. The catchment is predominantly agricultural with clay soils giving a flashy flow regime with low baseflows.

There are some small water-dependant Sites of Special Scientific Interest (SSSIs) in the headwaters of the Mardyke, at Grays Chalk Pit and West Thurrock Lagoon and Marshes. The Mardyke Valley Project is a multi-partner project working towards improvements to the conservation value of the Mardyke catchment.

Issues in the Mardyke include significant physical modifications to facilitate flood conveyance and land drainage. The junction with the Thames estuary is modified by the tidal sluice. There is also a large sewage treatment works at Upminster. Abstraction occurs from a number of surface water and

shallow ground-water locations but the catchment has been assessed as 'water available' under the Catchment Abstraction Management Strategy.

A number of very small water bodies drain the coastal strip to the east of the Mardyke mouth. These mostly flow through grazing marshes but significant urban and industrial areas exist in their catchments. Thames Estuary and Marshes Special Protection Area (SPA) borders the far east of the area occupied by the smaller waterbodies. These waterbodies are also significantly modified (being marsh drains) with controlled outflows. No other issues are known as they are not routinely sampled.

Figure 25 Map showing the current status/potential of rivers in the South West Essex catchment



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Table 17 Key statistics for the South West Essex catchment at a glance

River and lake water bodies	Now	2015
% at good ecological status or potential	9	9
% assessed at good or high biological status (3 water bodies assessed)	0	0
% assessed at good chemical status (2 water bodies assessed)	100	100
% at good status overall (chemical and ecological)	9	9
% improving for one or more element in rivers		18

There are 11 river water bodies and no lakes in the catchment. Four are artificial or heavily modified. 9 per cent of rivers currently achieve good or better ecological status/potential, including the Pitsea Hall Fleet. None of the rivers assessed for biology are at good or high biological status now, with 100 per cent at poor biological status.

This plan will address the key pressures in the catchment, and those waters in the worst state will be prioritised. 18 per cent of rivers in South West Essex will improve for at least one element by 2015.

Thame catchment



Catchment summary

The Thame catchment is predominately rural in character and is the predominant land use is agricultural. This catchment area also includes part of the Chilterns which includes extensive beech woodland. The River Thame and the River Wye are the principal rivers. The Grand Union Canal and its Wendover and Aylesbury Arms provide amenity benefit. There are several water-dependent sites of nature conservation importance, with Tring reservoirs Site of Special Scientific Interest (SSSI) being the largest. The River Wye is designated a salmonid fishery and is a partly urbanised chalk stream. The major urban areas of Aylesbury, Thame and High Wycombe are experiencing significant growth and development, increasing the demand for water resources across the catchment.

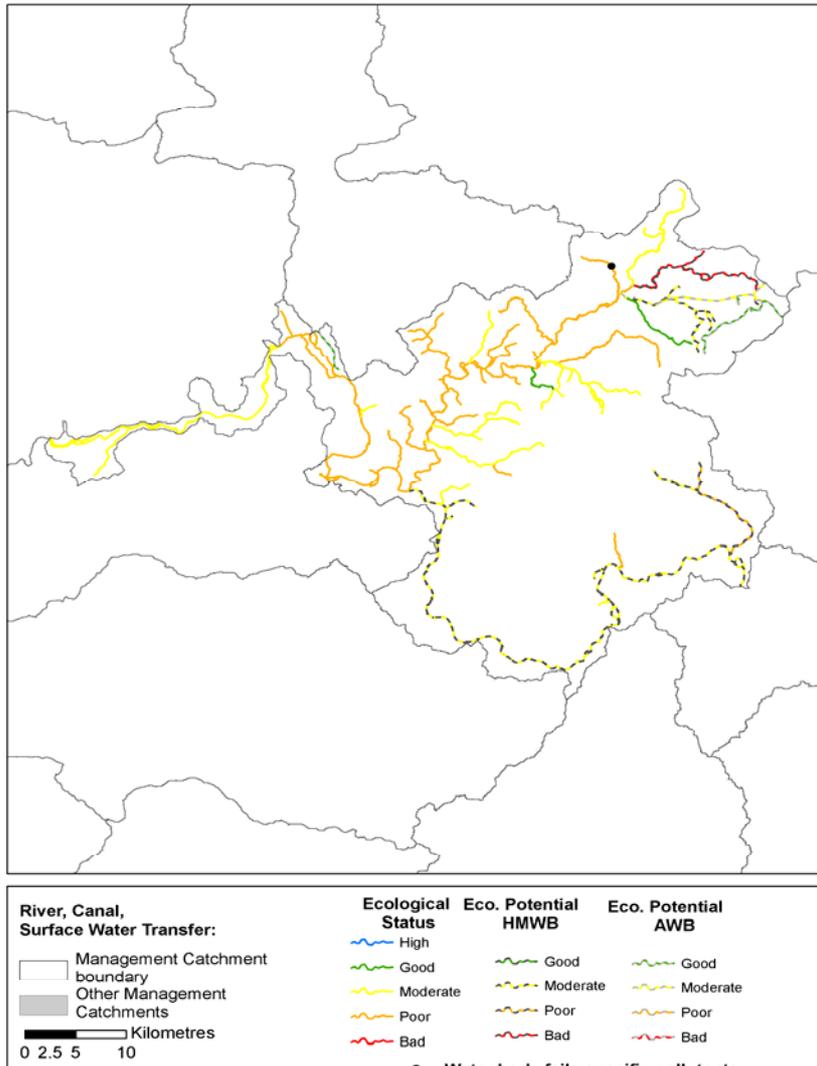
The water quality in the catchment is generally good. However, the Thame has high phosphate concentrations and is at high risk from both diffuse and point source pollution. Phosphates are also a problem for the rest of the catchment with most water bodies currently at risk of failing.

The impact of abstraction varies significantly across this catchment area, and this is connected to the underlying geology. The north part of the catchment is reliant on surface water runoff as the dominant flow to watercourses, whereas the south (Wye) relies on groundwater flows. The River Wye and its tributary, the Hughenden Stream are dependent on groundwater from chalk aquifers and have historically suffered from problems of low flow and drying. Such stresses commonly occur naturally in chalk streams but can also be the result of abstraction. Measures to tackle these issues include providing alternative abstraction licence strategies, promoting water efficiency measures,

sustainable urban drainage systems (SuDS) and rainwater harvesting. Lead partners such as water companies, local authorities and the Environment Agency will work together on these..

Physical habitat restoration will be pursued through partnerships with landowners and other organisations. AN example of this is the recently completed restoration of the Thame at Eythrope working with the local water company, landowners and angling groups. Restoration of degraded habitat will also be pursued through the planning process, for example through continuing to work with Wycombe District Council to achieve improvements to the River Wye through High Wycombe, and through influencing the policies in Local Development Frameworks.

Figure 26 **Map showing the current status/potential of rivers in the Thame catchment**



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Table 18 **Key statistics for the Thame catchment at a glance**

River and lake water bodies	Now	2015
% at good ecological status or potential	8	8
% assessed at good or high biological status (29 water bodies assessed)	13	16
% assessed at good chemical status (6 water bodies assessed)	83	83
% at good status overall (chemical and ecological)	8	8
% improving for one or more element in rivers		22

There are 37 river water bodies and two lakes in the catchment. 10 are artificial or heavily modified. Five per cent of rivers currently achieve good or better ecological status/potential, including the Stoke Brook. Ten per cent of rivers assessed for biology are at good or high biological status now, with 45 per cent at poor biological status, and 10 per cent of assessed river water bodies at bad status.

This plan will address the key pressures in the catchment, and those waters in the worst state will be prioritised. 22 per cent of rivers in the Thame catchment will improve for at least one element by 2015.

Some key actions for this catchment

- Actively promote the use of storage reservoirs for non-potable water uses (e.g. irrigation storage reservoirs).
- Promote "Best Farming Practice", including the use of soil and nutrient management plans.
- Ensure the need for Water Cycle Studies are included in policies in regional strategies and local development frameworks where appropriate, particularly in growth and/or high risk areas.
- Further investigations to improve understanding of (the scale of) habitat restoration required to achieve GES / GEP.

Case study 5: **Restoring habitats in the Thame catchment**

Poor habitats and threats from pollution events are a major problem for fish communities. The Upper Thame Restoration Project was set up to address these pressures for the River Thame. Some aims of the project were to improve the habitat of the Thame, restore flows to a natural channel and help fish communities improve.

The project has been a success by enhancing 3 km of riverine habitat, improving the oxygenation of the watercourse, creating a refuge for fish during flood and pollution events and creating the first upstream fish migration in 120 years.

Lessons learnt on project partnership and habitat restoration will be carried forward to future Water Framework Directive projects aimed to improve biological status.



Upper Lee catchment



Catchment summary

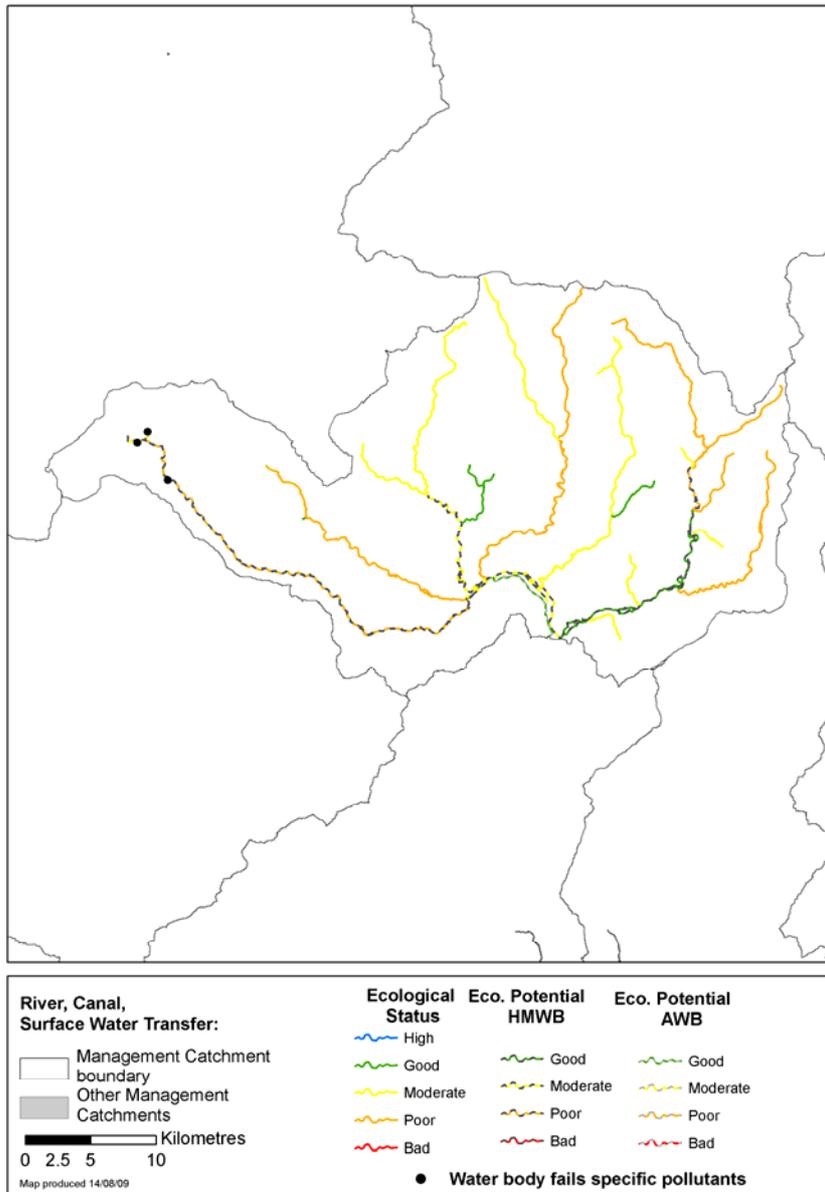
The area is dominated by the upper chalk formation, which serves as an important water supply source and base flow for many local streams and rivers. The increased demand for water has compounded many low flow issues, most noticeably on the rivers Mimram, Beane and the back loops of the Lee and Stort navigations. This has influenced the diversity of plant, invertebrate and fish species currently found.

Groundwater quality is variable with large areas of the lower catchment being affected by a significant contaminated site. River water quality is generally good. The Stort and Lee Navigations, along with discharges from Stansted Airport and urban diffuse pollution have affected water quality in some of the eastern watercourses. Urban run-off can also lead to a deterioration in water quality. This is particularly noticeable within the Stevenage Brook and the River Lee through Luton.

The main land use in the Upper Lee catchment is predominantly arable agriculture, bringing pressure from diffuse rural pollution. The catchment has been designated a Nitrate Vulnerable Zone as land management practices have led to many of the watercourses reaching high nitrate and phosphate levels.

The use of in-river structures and unsympathetic management of river channels has also compromised the value of some watercourses. Many of these structures are used to maintain water levels but equally restrict fish passage.

Figure 27 Map showing the current status/potential of rivers in the Upper Lee catchment



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Table 19 Key statistics for the Upper Lee catchment at a glance

River and lake water bodies	Now	2015
% at good ecological status or potential	16	19
% assessed at good or high biological status (21 water bodies assessed)	10	14
% assessed at good chemical status (6 water bodies assessed)	67	67
% at good status overall (chemical and ecological)	16	19
% improving for one or more element in rivers		44

There are 32 river water bodies and no lakes in the catchment. Nine are artificial or heavily modified. 16 per cent of rivers currently achieve good or better ecological status/potential, including the Stort navigation. 10 per cent of rivers assessed for biology are at good or high biological status now, with 62 per cent at poor biological status, and no assessed river water bodies at bad status.

This plan will address the key pressures in the catchment, and those waters in the worst state will be prioritised. 44 per cent of rivers in the Upper Lee will improve for at least one element by 2015.

Some key actions for this catchment

- Three Valleys Water will progress investigative boreholes on the Rivers Mimram and Beane.
- The Environment Agency will work with partners to restore the flood plain grazing marsh at Hartham Common.
- The Environment Agency will remove Easneye weir on the River Ash to improve fish passage.
- The Environment Agency will work with the Farming Wildlife Advisory Group to promote soil and nutrient management plans to local farmers.
- The Environment Agency will establish river flow objectives for the Rivers Mimram and Beane based on ecological species classification.
- The Environment Agency in partnership with Thames Water have planned to investigate urban diffuse pollution issues in Bishop's Stortford and Luton.

Vale of White Horse catchment



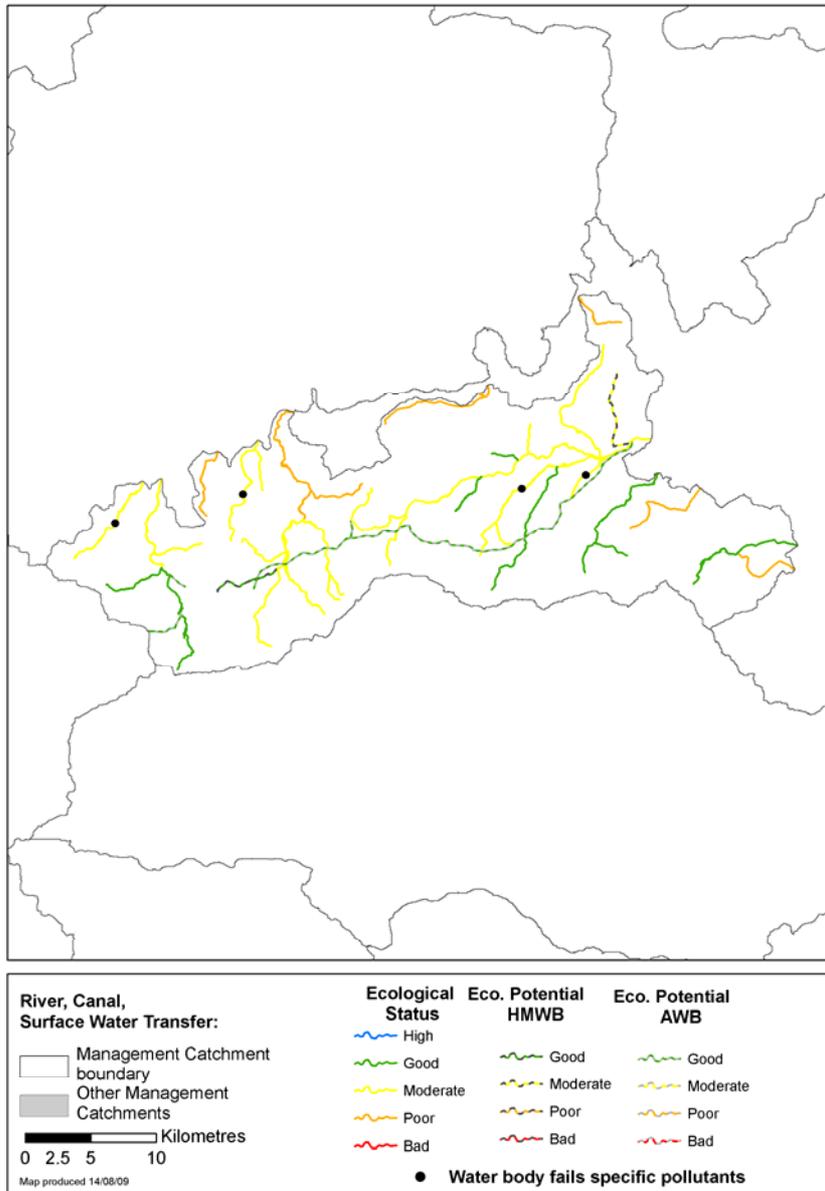
Catchment summary

The Vale of White Horse catchment is predominantly rural in character but contains the major centres of Swindon, Abingdon and Didcot which are all experiencing significant growth and development. The catchment includes the Rivers Ray, Cole, Ock and Ginge and Mill Brooks. There are a number of water-dependent Sites of Scientific Interest (SSSIs) in the area, designated in the main for their fen and meadow communities. The internationally important Cothill Fen is a Special Area of Conservation (SAC), designated because of its outstanding calcareous fen.

Surface water quality in the catchment is generally good, with the Rivers Ock, Key and Ginge Brook having the poorest water quality in the catchment. Phosphate concentrations due to diffuse pollution are a concern across most of the catchment, with Tributyltin compounds causing a current failure in the River Key. However, we expect the other chemicals monitored under the Directive to achieve good status by 2015, with an overall good ecological status by 2027.

Water abstraction in the area is mainly for public water supply, however, there are a large number of licences that are used for farming and domestic purposes.

Figure 28 **Map showing the current status/potential of rivers in the Vale of White Horse catchment**



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Table 20 **Key statistics for the Vale of White Horse catchment at a glance**

River and lake water bodies	Now	2015
% at good ecological status or potential	24	24
% assessed at good or high biological status (24 water bodies assessed)	46	50
% assessed at good chemical status (5 water bodies assessed)	100	100
% at good status overall (chemical and ecological)	24	24
% improving for one or more element in rivers		9

There are 33 river water bodies and one lake in the catchment. Three are artificial or heavily modified. 24 per cent of rivers currently achieve good or better ecological status/potential. including

the Cole and Dorcan brook. 46 per cent of rivers assessed for biology are at good or high biological status now, with 29 per cent at poor biological status, and no assessed river water bodies at bad status.

This plan will address the key pressures in the catchment, and those waters in the worst state will be prioritised. Nine per cent of rivers in the Vale of White Horse will improve for at least one element by 2015.

Some key actions for this catchment

- Target high risk farms and undertake regulatory farm visits using, pollution prevention notices and advisory letters where necessary.
- Further investigations to improve understanding of habitat restoration required to achieve Good Ecological Status / Good Ecological Potential.

Wey catchment



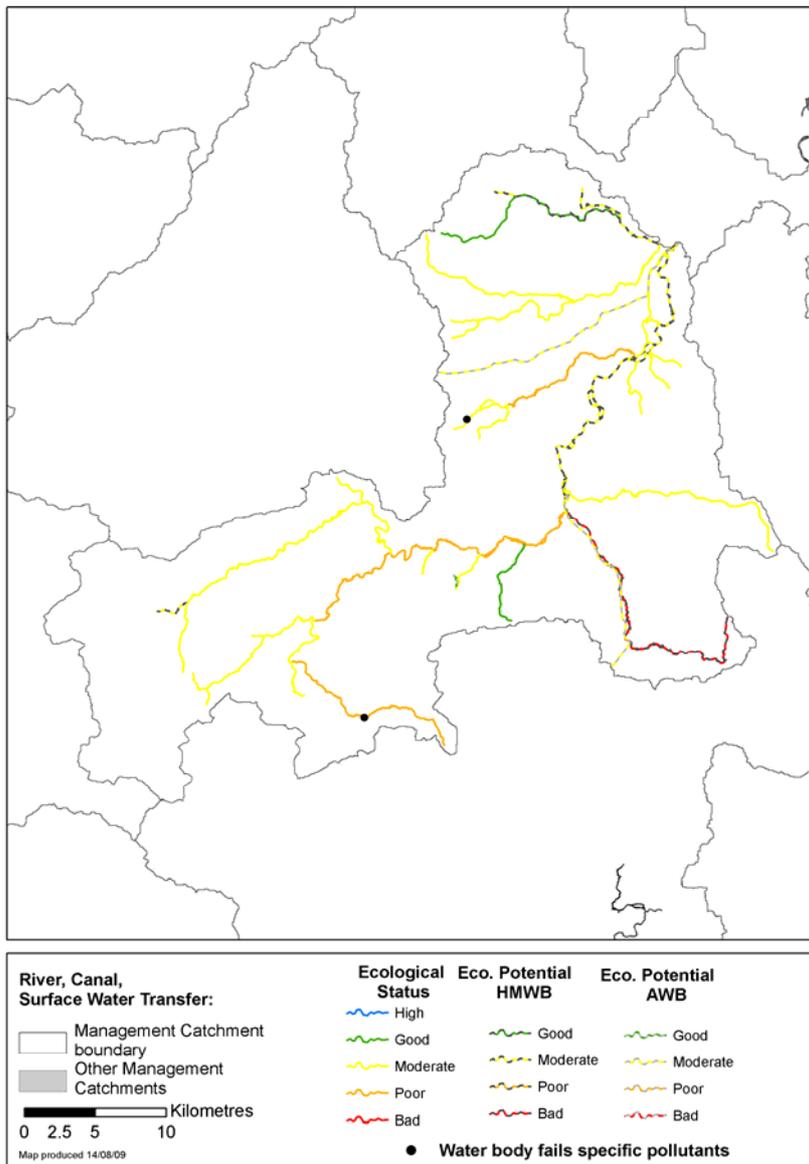
Catchment summary

The upper reaches of this catchment are predominantly rural with the towns of Alton, Farnham, Haslemere and Godalming being the main urban areas. The lower reaches of the catchment are primarily urban and include the major towns of Guildford, Weybridge and Woking. The main River Wey is fed by a number of tributaries including the Cranleigh Waters, Tillingbourne and Hoe Stream. This catchment also includes Frensham Ponds, Virginia Waters and lakes at Thorpe Park, as well as a number of Sites of Special Scientific Interest (SSSI) lakes and ponds. The River Wey Navigation, Basingstoke Canal and the largely disused Wey and Arun Canal are also within this catchment.

Phosphate levels are high in a number of rivers. High levels of nutrients in rivers can lead to excessive plant growth and in turn may affect the rivers' wildlife. Sources of nutrients in this catchment include effluent from sewage treatment works and agricultural pollution.

A considerable number of rivers in this catchment are designated heavily modified. Modification of these rivers including in-stream structures has led to loss of habitat diversity and the creation of barriers for fish migration. These issues and the presence of pollutants give rise to poor water quality for a number rivers, as well as varied biological quality throughout the catchment.

Figure 29 Map showing the current status/potential of rivers in the Wey catchment



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Table 21 Key statistics for the Wey catchment at a glance

River and lake water bodies	Now	2015
% at good ecological status or potential	19	23
% assessed at good or high biological status (17 water bodies assessed)	29	29
% assessed at good chemical status (7 water bodies assessed)	71	71
% at good status overall (chemical and ecological)	19	23
% improving for one or more element in rivers		22

There are 32 river water bodies and 11 lakes in the catchment. 13 are artificial or heavily modified. Nine per cent of rivers currently achieve good or better ecological status/potential, including the Chertsey Bourne (Sunningdale to Virginia Water), Chertsey Bourne (Virginia Water to Chertsey) and

the Ock. 35 per cent of rivers assessed for biology are at good or high biological status now, with 29 per cent at poor biological status, and 5 per cent of assessed river water bodies at bad status.

This plan will address the key pressures in the catchment, and those waters in the worst state will be prioritised. 22 per cent of rivers in the Wey will improve for at least one element by 2015.

Some key actions for this catchment

- The Environment Agency will promote good land management practice amongst the equine community.
- The Environment Agency will undertake farm visits and work with farmers to provide pollution prevention advice and information to ensure farming activities are not causing a detrimental impact on the environment.
- The Environment Agency and Local Authorities will influence stakeholders on the preparation of planning proposals for the eco-town at Bordon to ensure that the most sustainable options are pursued for; flood risk, drainage, water quality and water resources, in line with the eco-towns PPS and any other best practice guidance.
- Throughout the catchment, there is a requirement for further monitoring and investigation to allow targeting of additional measures to improve the status of this catchment.

Estuaries and coastal water bodies



The Thames estuary is one of the most ecologically diverse estuaries in England and Wales, with over 45 species of fish resident at some stage in their lifecycle. Up to 350 benthic invertebrate species have been found during routine monitoring and the estuary plays a major role in supporting North Sea fish stocks. The catchment is also home to a number of invasive non-native species, including Mitten Crab and Zander.

The estuaries and coastline provide varied biodiversity, recreation and industrial opportunities for the people living and working in the Thames River Basin District. But this has led to many environmental pressures being concentrated in this area.

The water quality concerns for the Thames estuary centre around the impacts of storm discharges from the five major sewage works which serve London and from the combined sewer network. These discharge to the estuary frequently, resulting in drops in dissolved oxygen, and increases in aesthetic pollution, risk to health and fish kills.

Improvements to the sewage treatment works along the tidal River Thames and the construction of the London Tideway Tunnels are planned to be delivered by Thames Water over the next two river basin cycles. These major projects represent the primary measures to address point source pollution from the sewerage system and are fundamental to the achievement of good status in this catchment.

The estuaries and coastlines in the Thames River Basin District have been the subject of physical modification over the years. Continued development has been identified as a need within this

catchment, particularly associated with the 'Thames Gateway' growth area. Future development and associated infrastructure including flood defences and provision of drinking water and sewerage, all represents further pressure on the water environment. However if this is managed well, it will also offer opportunities to improve the physical river environment via sustainable methods of planning and development.

Throughout the coming river basin planning cycles, we will continue to work through our own flood defence asset management system and with developers. This will ensure that sustainable construction designs are used and that all available mitigation measures are put in place to enable this catchment to reach its goal of good ecological potential.

Estuaries and coasts in the Thames River Basin District are also physically managed to facilitate navigation to ports and to enable commercial fisheries activities. All of which are important to both the local and national economy. But associated pollution and modifications challenge the success of local wildlife and people's enjoyment of the estuary. We will continue to work with the Port Authorities to ensure that the national framework for dredging and disposal of dredgings is applied appropriately for the Thames and Medway estuaries.

Elevated nutrients and specific pollutants in estuaries area a concern and may have potential impacts on the ecology. Currently there is limited monitoring data available, particularly for the Medway and Swale. To improve our confidence in classifying these waters and to improve our understanding of these pressures; we will be undertaking directed monitoring and investigations. This will provide a more comprehensive picture of these waters, and help relevant organisations to direct action.

There is only one coastal water body (Thames Coastal North) in the Thames River Basin District.

Table 22 Key statistics for estuaries and coastal waters at a glance

	Estuaries		Coastal	
	Now	2015	Now	2015
% at good ecological status or potential	0	0	0	0
% assessed at good or high biological status (5 water bodies assessed)	0	50	0	0
% assessed at good chemical status (5 water bodies assessed)	20	40	-	-
% at good status overall (chemical and ecological)	0	0	0	0
% improving for one or more element		27		0

There are 11 estuarine (also called 'transitional') water bodies, Currently only one of the estuarine water bodies is at good or better ecological potential, with none being assessed as poor or bad.

There is one coastal water body in the river basin district which is assessed as moderate ecological potential.

All the estuarine water bodies are currently assessed as moderate for biological status, with 50 per cent predicted to improve to good biological status by 2015.

It is unlikely that the coastal water body will improve by 2015 and will remain at moderate biological potential.

Some key actions

- Improvements to the London sewerage network to reduce the impact of storm sewage on water quality in the Thames Tideway - Thames and Lee Tunnels.

- Contribute to achievement of favourable condition on West Thurrock Lagoon & Marshes Site of Special Scientific Interest by implementing flood management programme.
- Develop national guidance framework on dredging to inform Programme of Measures to meet WFD objectives.
- Contribute to achievement of favourable condition on West Thurrock Lagoon & Marshes Site of Special Scientific Interest by implementing flood management programme.
- Flood/Coastal Erosion Risk Management Measure - Managed realignment of flood defence.
- Environment Agency to provide tailored advice to key bodies - Regional Development Agencies/Government Offices for Regional Spatial Strategy and local authorities for Local Development Frameworks..

Groundwater



Groundwater is vital to life and livelihoods in the river basin district. It provides drinking water and supports many of the rivers and wetland habitats. Groundwater quality must be protected and improved, and abstraction should be balanced with the needs of the environment.

A number of groundwater bodies currently fail to achieve good status due to elevated levels of nitrate, pesticides, solvents and other contaminants. Furthermore, groundwater monitoring has highlighted widespread increasing trends in nitrate concentration. These trends are predicted to cause a failure of the Drinking Water Protected Area test by 2015.

In many cases it is not known what activity or activities are causing failure and therefore the initial stage will be to carry out focussed investigation. In other groundwater bodies there are measures which can be undertaken which will improve the groundwater quality. What is not known is how long this will take and whether the measures taken will be sufficient to attain good status.

The quantitative impacts of abstraction have been discussed in the catchment summaries above but over 50 per cent of groundwater also requires treatment before it is put into public supply. In addition, a significant volume of groundwater is no longer abstracted as a direct result of quality problems. For example, 9MI/day is no longer abstracted for supply as a result of the bromate pollution plume which extends for a distance of over 20km across the Mid-Chilterns Chalk and Upper Lee Chalk groundwater bodies.

The most important sources of groundwater are the principal aquifers of the Chalk, the Jurassic Limestones, the Lower Greensand and the Lower Thames Gravels. A large part of the Chalk is 'hidden' under unproductive strata in the London Area. A number of urban areas with a significant industrial past are situated on the Chalk such as Luton, Reading, High Wycombe and Basingstoke. Much of the Chalk aquifer is polluted by nitrates and are already, or are at risk of, exceeding the drinking water standard of 50mg/l particularly in the more rural West Area (Berkshire Downs Chalk and Vale of White Horse Chalk bodies).

Pesticide concentrations show an overall decline, largely as a result of phasing out certain pesticides known to cause a problem in groundwater. However, new cases of groundwater pollution involving pesticides continue to occur.

Other common groundwater pollutants include chlorinated solvents which have been used widely in industry and by dry cleaners. A large chlorinated solvents plume is present within the Vale of White Horse groundwater body. Metals are of concern in a number of bodies across the Thames River Basin District but there is no clear pattern to their distribution.

Table 23 Key statistics for groundwater bodies at a glance

Groundwater	Now	2015
% at good quantitative status	35	35
% assessed at good chemical status (46 water bodies assessed)	43	46
% at good status overall	17	17

Overall status is determined by chemical status and quantitative status. Eight out of 46 groundwater bodies in the river basin district are at good status overall; 20 water bodies have been classified at good chemical status, and 16 at good quantitative status. This is not expected to change by 2015.

Some key actions

- Implement Communities and Local Government (CLG) Planning Policy Guidance Statement 23 (PPS23) on controlling pollution of groundwater that may arise from development of land.
- Local campaign to decrease input of nitrates to groundwater body.
- Pollution and prevention campaigns and advice, particularly targeting industrial premises in the river basin district where copper may be used. Check for use of other metals and hazardous substances. Also investigate possible inflow from river to groundwater at abstraction.
- Re-engineer existing discharges to avoid direct discharges of pollutants to groundwater.

Case study 6: **West Kent Darent and Cray groundwater**

The West Kent Darent and Cray Chalk groundwater body is subject to considerable pressures from a range of sources both urban and rural sources including nitrates, pesticides, solvents and hydrocarbons.

Groundwater quality campaigns will be run to prevent and limit the input of substances by encouraging safe storage, use and disposal.

The Fawkham abstraction in the West Kent Darent and Cray groundwater body is a typical example:

- The borehole provides a water source and is currently the sole source of potable water for over 10,000 people for Fawkham and Longfield in North Kent.
- Monitoring data shows that the raw water at this abstraction is contaminated by the solvent Tetrachloroethene (PCE) which has been present at low levels since 1996, rising very slowly, but in 2007 the concentrations rose rapidly. It is also at risk from nitrates and pesticides. The water company considered ceasing to use the borehole.
- The high levels of solvents have now dropped but the source of the solvents has yet to be identified. There is concern that the situation could re-occur.
- The area has been prioritised to address the situation. Further actions include
 - Pollution prevention campaigns and further targeted investigations at key sites within the Source Protection Zones and at high risk sites to decrease the present inputs and future risks from solvents and hydrocarbons
 - Awareness raising to prevent future potential impact from pesticides and nitrates associated with the more rural land-uses.

The prioritisation and actions required at other abstractions within the Darent and Cray Chalk groundwater body will depend on substances found, the impact and the risks involved. It is very important that this targeted work starts as soon as possible as once polluted the groundwater takes a long time to clean-up.

9 Next steps – implementing this plan

Diffuse pollution investigation and action

In developing the River Basin Management Plans approximately 8,500 investigations have been identified for England and Wales, including further monitoring. The vast majority of these will be undertaken by the Environment Agency and all of these will be completed by the end of 2012. The investigations will focus on resolving what is causing the problem and what the best method to tackle it is. As a result of the evidence they will provide, we will be able to take further action in the first cycle where practicable.

The remainder of the investigations – including over 100 water company catchment management investigations – will be carried out by co-deliverers across England and Wales during the course of the first delivery cycle. Working with the river basin district liaison panels, the Environment Agency will welcome the input of local data and knowledge from other parties to help drive action at catchment level.

We are confident the investigation programme will lead to actions enabling a further reduction in diffuse pollution and more environmental improvement before 2015. As we have said earlier, the Environment Agency is already committed to delivering, through its own work or through working with others, an additional two per cent improvement towards good status or potential by 2015 across England and Wales

Additional national measures

In addition to commitments already provided, the UK Government and Welsh Assembly Government will continue to demonstrate their commitment and bring forward significant work starting with;

- banning phosphates in household laundry detergents;
- a new requirement contained within the Flood and Water Management Bill making the right to connect to surface water sewers contingent on Sustainable Drainage Systems (SuDS) being included in new developments. Local authorities will be responsible for adopting and maintaining SuDS that serve multiple properties and the highways authorities will maintain them in all adopted roads;
- general binding rules to tackle diffuse water pollution by targeting abuse of drainage systems, potentially including industrial estates, car washes and construction by 2012;
- transferring the responsibility for misconnections to water companies by 2012;
- the Water Protection Zones Statutory Instrument which will enter into force on 22 December 2009 and will be used to tackle diffuse pollution where voluntary measures are not sufficient;
- more funding for the Catchment Sensitive Farming Delivery Initiative in England from 2010 – a 50% increase in capital grant spend, and evaluation of the initiative to ensure it is achieving maximum effectiveness;
- better targeting of agri-environment schemes for water protection. In Wales, this includes aligning the forthcoming “Glastir” agri-environment scheme to contribute towards meeting Water Framework Directive requirements;
- supporting the farming industry in the Campaign for the Farmed Environment, which has reducing impacts on water quality as one of its priorities;
- encouraging farmers to use buffer strips to reduce diffuse pollution through guidance and advice provided under cross compliance;
- better understanding of the impact of sediment and measures to tackle it as a result of the additional funding announced in June 2009;
- further consideration of the impact of cross compliance and good agricultural and environmental conditions (GAEC) on water quality;
- implementation of the Sustainable Use of Pesticides Directive;

- Environmental Permitting Regulations guidance setting essential standards of location, operation and maintenance for septic tanks.

These and the other actions in the plans will lead towards a greater achievement of good status and improvement within class, with more than a quarter of the length of all rivers improving.

Implementing the plans at catchment level

The Environment Agency has found river basin liaison panels extremely valuable, and will continue to work with them throughout the plan delivery period. The panels will help to encourage river basin district-wide action through their sectors, monitor overall progress and prepare for the second cycle of River Basin Management Planning.

Given that implementation requires activity 'on the ground', it is essential that there is the maximum involvement and action from locally based organisations and people. Innovative ways of working together need to be identified that will deliver more for the environment than has been captured in this plan.

The Environment Agency will adopt a catchment-based approach to implementation that is efficient and cost-effective. This will support the liaison panels, complement existing networks and relationships, and enable better dialogue and more joined up approaches to action.

In some places there will be added value from adopting more detailed catchment plans to help deliver the River Basin Management Plan objectives during the planning cycles. The River Kennet is a case in point where we have set up a pilot group with a range of stakeholders. We will share the knowledge gained with the liaison panels, to help identify other catchments that could benefit from a similar approach.

Working with co-deliverers

This plan sets out in detail the actions required to improve the water environment. All organisations involved must play their part, record their progress and make the information available.

Where the work of a public body affects a river basin district, that body has a general duty to have regard to the River Basin Management Plan. Ministerial guidance states that the Environment Agency should:

- work with other public bodies to develop good links between river basin management planning and other relevant plans and strategies, especially those plans that have a statutory basis such as the Local Development Plans and Wales Spatial Plan;
- encourage public bodies to include Water Framework Directive considerations in their plans, policies, guidance, appraisal systems and casework decisions.

For some, the actions in this plan may be voluntary and for others they will be required under existing legislation. We want to work with you to make these actions happen, and identify new action to create a better place.

Reporting on progress

The Environment Agency will use its environmental monitoring programme and, where appropriate, information from other monitoring programmes, to review whether work on the ground is achieving the environmental objectives. We will update the classification status of water bodies accordingly and review progress annually. At the end of 2012 a formal interim report will be published. This will:

- describe progress in implementing the actions set out in this plan;
- set out any additional actions established since the publication of this plan;
- assess the progress made towards the achievement of the environmental objectives.

Preparations have already begun for the next cycle period 2015 to 2021 and for the subsequent cycle to 2027. If you have proposals for actions that can be included in these future cycles please contact us.

River basin management milestones

The plan builds on a number of other documents and milestones required by the Water Framework Directive. The work to date has ensured a strong evidence base, and a framework for dialogue with interested organisations and individuals. In terms of taking this plan forwards, it helps to understand the major milestones remaining. These future milestones are summarised in the figure below.

Figure 30 River basin management planning milestones to date and to 2015



10 Summary statistics for the Thames River Basin District

Table 24 Summary statistics for the Thames River Basin District

	Rivers, Canals and SWT's	Lakes and SSSI ditches	Estuaries	Coastal	Surface Waters Combined	Groundwater
% of water bodies with improvement in any status of any element by 2015	24	7	27	0	22	2
% of water bodies at good ecological status/potential or better now						
For groundwater: % of water bodies at good or better quantitative status now	20	47	0	0	23	35
% of natural water bodies at good ecological status or better now	20	43	0	0	21	35
% of artificial and heavily modified water bodies at good ecological potential or better now	20	48	0	0	26	N/A
% of water bodies at good ecological status/potential or better by 2015.						
For groundwater: % of water bodies at good or better quantitative status 2015	22	49	0	0	25	35
% of natural water bodies at good ecological status or better by 2015	24	43	0	0	24	35
% of artificial and heavily modified water bodies at good ecological potential or better by 2015	20	49	0	0	27	N/A
% of water bodies at good chemical status now	78	0	20	0	75	43
% of water bodies at good chemical status 2015	84	0	40	0	81	46
% of water bodies at good biological status or better now	28	31	0	0	28	N/A
% of water bodies at good biological status or better by 2015	34	34	50	0	34	N/A
% of water bodies with alternative objectives (good status 2021 or 2027)	78	51	100	100	75	83
% of waterbodies deteriorated under Article 4.7	0	0	0	0	0	0
% of all water bodies (surface waters and groundwaters) at good status now	23					
% of all water bodies (surface waters and groundwaters) at good status by 2015	25					

11 Further information – the annexes

- Annex A** **Current state of waters in the Thames River Basin District**
What the waters are like now. Information on our network of monitoring stations, the classification status of water bodies and the reference conditions for each of the water body types in the river basin district.
- Annex B** **Water body status objectives for the Thames River Basin District**
Information on water body status and objectives
- Annex C** **Actions to deliver objectives**
Details of the actions planned (programmes of measures) for each sector to manage the pressures on the water environment and achieve the objectives of this plan.
- Annex D** **Protected area objectives**
Details of the location of protected areas, the monitoring network, environmental objectives and the actions required to meet Natura 2000 sites and Drinking Water Protected Area objectives.
- Annex E** **Actions appraisal and justifying objectives**
Information about how we have set the water body objectives for this plan and how we selected the actions. It also includes justifications for alternative objectives that have been set.
- Annex F** **Mechanisms for action**
More detail about the mechanisms (i.e. policy, legal, financial tools) that are used to drive actions.
- Annex G** **Pressures and risks**
Information about the significant pressures and risks resulting from human activities on the status of surface water and groundwater.
- Annex H** **Adapting to climate change**
Information on how climate change may affect the pressures on the water environment and the ability to meet the objectives.
- Annex I** **Designating artificial and heavily modified water bodies**
Information about the criteria used to designate waters as artificial or heavily modified water bodies.
- Annex J** **Aligning other key processes to river basin management**
Aligning planning processes to deliver multiple benefits and sustainable outcomes
- Annex K** **Economic analysis of water use**
Information about the costs of water services within the river basin district
- Annex L** **Record of consultation and engagement**
Details of how we have worked with interested parties to develop this plan
- Annex M** **Competent authorities**
List of the competent authorities responsible for River Basin Management Planning.
- Annex N** **Glossary**
Explanation of technical terms and abbreviations.

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