

Biodiversity action plan



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Throughout this report we have indicated where you can find further information online.

An introduction to Wessex Water

Wessex Water is a regional water and sewage treatment business serving a 10,000 square kilometres area in the south west of England, including Dorset, Somerset, Bristol and Bath, much of Wiltshire and parts of Gloucestershire and Hampshire. The region has a diverse range of communities, landscapes, wildlife habitats, activities and industries.

We supply 1.3 million customers with up to 284 million litres of water a day, and provide sewerage services to 2.7 million customers, treating 475 million litres of sewage per day.

We are committed to giving all our customers excellent standards of service by providing high quality water and environmental services that protect health, improve the environment and give customers good value for money.



Key

- Water supply and sewerage services area
- Sewerage services only
- Water supply services only

Sustainability

Wessex Water aims to deliver services in a truly sustainable way and our Sustainability Vision sets out the activities, processes and ways of working that need to be adopted for us to achieve this.



www.wessexwater.co.uk/sustainability/sustainability

Wessex Water and biodiversity

We recognise the value of a healthy natural environment

The natural environment with all its diversity of microbes, fungi, plants and animals, is key to sustaining the cycling of nutrients and fresh water, and the maintenance of healthy soils and clean air that we all depend on.

In spite of its proven importance to us, our natural inheritance is still being lost and degraded.

Wessex Water recognises that the environment is essential to the wellbeing of the communities we all live and work in as well as being a vital component of our business. We are therefore committed to the protection and sensitive management of the biological diversity, wildlife and landscapes of our area.

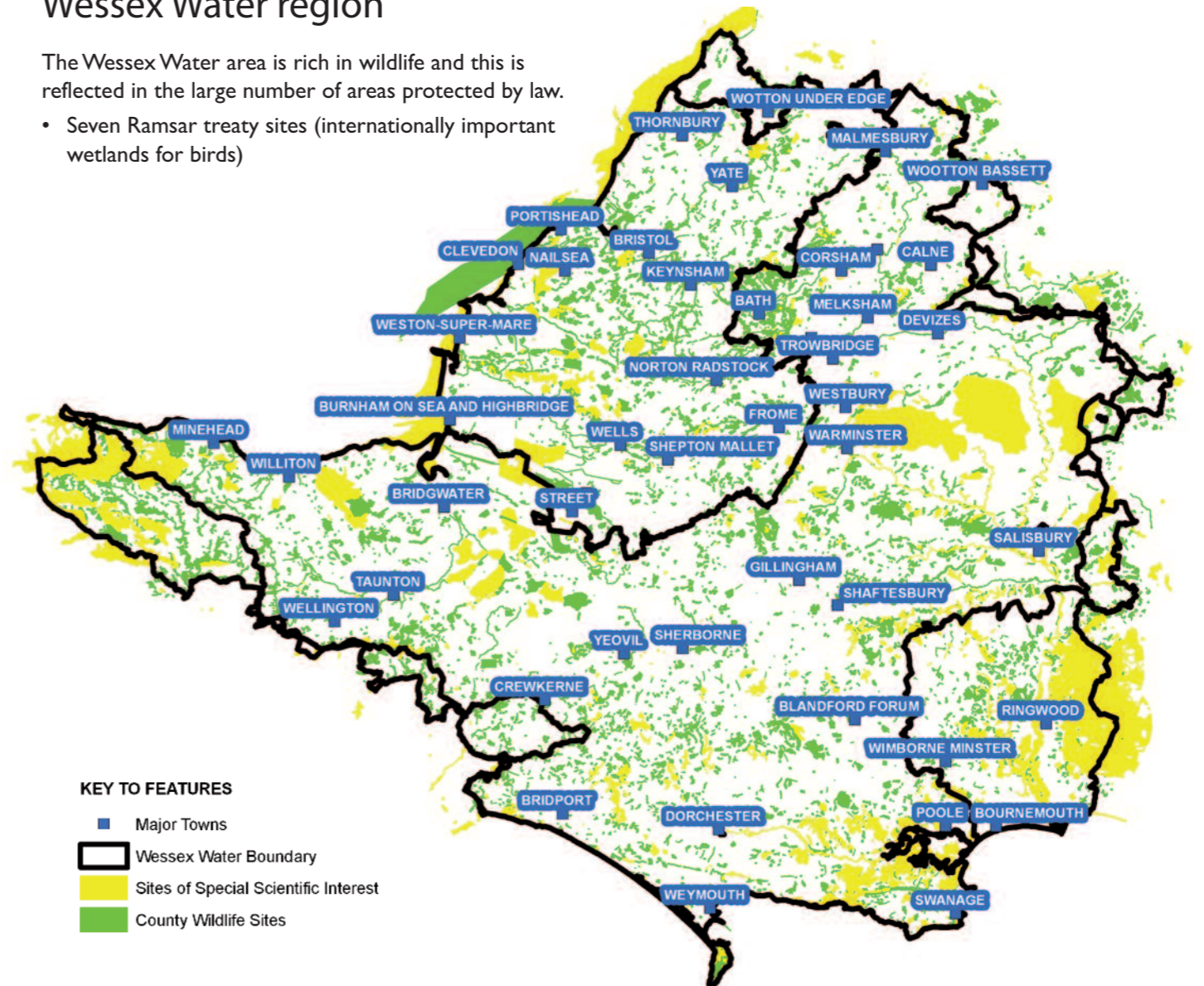
Natural resources within the Wessex Water region

The Wessex Water area is rich in wildlife and this is reflected in the large number of areas protected by law.

- Seven Ramsar treaty sites (internationally important wetlands for birds)

- 50 Special Areas of Conservation and Special Protection Areas (protected land of European importance for habitats, animals and birds)
- 23 National Nature Reserves and an estimated 128 Local Nature Reserves
- 538 Sites of Special Scientific Interest (SSSIs are the best representative natural habitats in the UK)
- 6,819 regionally important sites (Local Wildlife Sites)

Across the region there are significant areas of important habitat prioritised for preservation by government (UK BAP Priority Habitats). For example, lowland heath is an important habitat in Dorset and Hampshire; the UK is estimated to hold around 20% of the total area in Europe. It supports a wide suite of rare and specialist animals and birds such as Sand Lizard and Nightjar. Heathlands also have a high intrinsic appeal and provide important places for people to enjoy.



KEY TO FEATURES

- Major Towns
- ▭ Wessex Water Boundary
- Sites of Special Scientific Interest
- County Wildlife Sites

Duties for biodiversity and the natural environment

Wessex Water has a duty to enhance and protect biodiversity as laid down in successive pieces of legislation.

The Water Industry Act 1991 and **Environment Act 1995** include general duties in respect of conservation, access and recreation including a requirement:

“ so far as is consistent with the functions of the Water Company, to further the conservation of flora, fauna and geological or physiographical features of special interest. ”

Detailed guidance for achieving this is set out in the Water Industry Code of Practice for Conservation, Access and Recreation (CAR).

The Natural Environment and Rural Communities Act 2000, also requires us as a statutory undertaker in exercising our functions to have regard to the purpose of conserving biodiversity.

Defra’s guidance to undertakers (Guidance for Local Authorities on Implementing the Biodiversity Duty) gives more detail including:

- conservation of biodiversity includes restoration and enhancement as well as protection
- consideration of biodiversity should be incorporated into all parts of business through four themes:
 - policy, strategy and procurement
 - management of public land and buildings
 - planning, infrastructure and development
 - education, advice and awareness.

In 2012 both Biodiversity 2020 (The England Biodiversity Strategy) and the Natural Environment White Paper issued a call for action to do more to halt the loss of



biodiversity, including working at a landscape scale with an emphasis on multi-functional benefits, better protection of important habitats and connections between protected areas.

Targets were set including the maintenance of UK priority habitats and Sites of Special Scientific Interest in good biological condition:

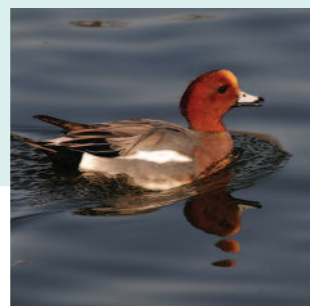
“ Better wildlife habitats with 90% of priority habitats in favourable or recovering condition and at least 50% of SSSIs in favourable condition, while maintaining at least 95% in favourable or recovering condition. ”

The England Biodiversity Strategy and the **Environment White Paper** promote catchment work to reduce expensive end of line treatments. These have knock-on effects that include benefits for biodiversity in implementing solutions for water bodies.

“ We will protect water ecosystems, including habitats and species, through a river basin planning ”

Biodiversity 2020

Wessex Water has a duty to enhance and protect biodiversity...



How we carry out these duties

International agreements, national legislation, guidance and policies are all translated into company strategies and policies that enable us to actively conserve wildlife and protect the wider environment.

Wessex Water company policies for biodiversity

- Wessex Water Sustainability Vision
- Wessex Water Final Business Plan 2010 -2015
- Wessex Water Biodiversity Strategy
- Wessex Water Biodiversity Action Plan (BAP)
- Wessex Water Environmental Policy (ENVPOL01)
- Environmental Protection Policy (ENVPOL02)

Further details of all these policies are on our website www.wessexwater.co.uk

Work to protect the environment is laid out in by the natural capital section of the Wessex Water Sustainability Vision as shown in Table 1 below.

Table 1: Sustainability Vision environmental capital outputs

Outcomes		Mechanisms	
N5	Having a biodiversity-rich landholding, while contributing to the wider region’s biodiversity	N5a	Management of the company’s own land to maximise biodiversity.
		N5b	Preventing potential loss of biodiversity and environmental features from operations and construction; seeking to restore environmental features elsewhere where this is not possible.
		N5c	Actively working with third parties to protect biodiversity in various ways, such as project funding and discussion of investment schemes.
N4	The environmental integrity and biodiversity of river and groundwater catchments being in good or excellent condition	N4a	Encouraging greater consideration of the ecosystem services provided by catchments within water policy, regulation, investment planning and the actions of other interests.
		N4b	Championing partnership-led catchment management work.
		N4c	Promoting long-term, sustainable implementation of the Water Framework Directive.

A further sustainability driver for the water industry is to meet the national SSSI condition targets for 2020 (at least 50% of SSSIs in favourable condition, while continuing to maintain at least 95% in favourable or recovering condition).

Wessex Water biodiversity strategy and BAP

We have developed an overarching strategy for conserving, enhancing and working with the natural environment. This biodiversity action plan (BAP) details our high level strategic aims and the actions we will be taking to achieve them.

The action plan is reviewed and updated every five years in line with the company Periodic Review



The Wessex Water biodiversity action plan

Background

The original Wessex Water Biodiversity Action Plan (WWBAP) was published in 1998; the first corporate initiative of its kind based on the UK Biodiversity Action Plan (UKBAP). It was the company's response to the developing national and international framework for promoting biodiversity at that time. The WWBAP was acknowledged by the UK government report *Sustaining the Variety of Life* as a best-practice example of corporate involvement in biodiversity work.

The WWBAP was substantially updated in 2006 to reflect the change of emphasis in the NERC Act. It reflected both developments in the national approach to the delivery of biodiversity gain, and the experience gained in Wessex Water of partnership working and the interactions between biodiversity and our core business functions

This is the third version of the WWBAP and is produced to reflect new legislation and government guidance on biodiversity delivery issued in 2011 and 2012, along with significant changes in the general approach to managing the natural environment. This is in support of an agreement at the international Convention on Biodiversity at Nagoya in 2010 to halt biodiversity loss by 2020.

The stated aim of the Natural Environment White Paper and the England Biodiversity Strategy 2011 is: (by 2020)

“ to halt overall biodiversity loss, support healthy, well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people. ”

This is a larger and more holistic scope for biodiversity delivery, looking at landscape scale work with an emphasis on multi-functional benefits and better protection of important habitats rather than specific site-based habitat and species protection.

Two new possible delivery mechanisms are introduced in the white paper and England Biodiversity Strategy:

- delivery of ecosystem services – the multiple benefits obtained from land management at a landscape scale, including making use of biodiversity to help deliver social benefits such as flood prevention, clean air and water and recreation
- offsetting – paying for or carrying out compensatory mitigation for unavoidable damage to biodiversity.



Part of our work up to 2015 and beyond will be to investigate options for using these new approaches in our business. The process of applying cost benefit assessments to positive and negative environmental impacts inherent in these approaches gives the opportunity to include biodiversity within our development plans and programmes.

For the first time the BAP will also include the work and investigations being carried out within water catchments by the company. The new guidelines for water resources and drought planning from our regulators Ofwat and the Environment Agency included in our current business plan strengthen the use of biodiversity and other environmental functions in resolving water quality issues.



Find out more about the UKBAP at jncc.defra.gov.uk/page-5155

The plan

- Provides a coherent approach to the natural environment within the company.
- Identifies the activities being undertaken or required to conserve and enhance the biodiversity within our landholding.
- Seeks opportunities to deliver wider biodiversity and environmental benefits throughout our work and to respond to new challenges in conservation in the UK.

Aims

- To minimise impacts on wildlife and the natural environment from delivery of water and sewerage services.
- To work to halt or reverse biodiversity loss where it occurs on company land or as a result of company activities.
- To contribute to efforts to maintain and restore ecosystem services across the region.
- To contribute to regional and national initiatives and projects for biodiversity delivery to include building resilience to, mitigation and adaptation to adverse anthropological impacts on biodiversity including climate change.

Delivery

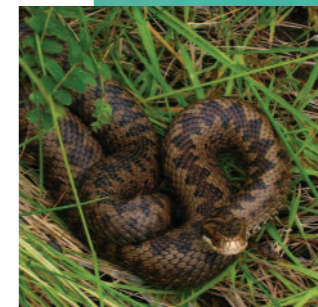
WWBAP aims will be delivered through five areas of work across the business:

- management of our land,
- operational activities and development – minimising impacts,
- supporting external biodiversity partnerships and projects,
- catchment scale work,
- engagement and education.



Details of our current work, research and projects can be found on our website.

www.wessexwater.co.uk/environment in the *Investigations* section



The Wessex Water biodiversity action plan

1 Management of our land

We own around 900 sites and other land across the region, excluding small pumping stations and kiosks. This land varies considerably in quality and use, from several hectares of farmland, often managed organically with low inputs to protect water sources, to the typical half-hectare sized sewage treatment works that is a busy, intensively managed operational site. Much of this, especially land set aside and protected for water supply, is of conservation value or has the capacity to be of some value for wildlife.



We have developed a protocol to help us to identify land of biodiversity value. We aim to manage such land sympathetically through site environment plans (SEPs) wherever it is compatible with supply and waste water treatment activities. This system not only manages habitats, species and features of positive value, but also controls negative impacts such as invasive non-native plants

Details of our special projects can be found in Appendix II.

Our aims:

- to have a biodiversity-rich land holding, while contributing to the wider region's biodiversity
- to work to halt or reverse biodiversity loss where it occurs on company land.

Our strategy:

- to continue to manage our land to maintain its current level of habitats and diversity, ensuring that good condition is maintained and seeking opportunities to extend, enhance or restore habitat where possible
- to ensure that our land contributes to landscape scale habitat diversity and connectivity, promoting ecological networks beyond Wessex Water land where appropriate
- to ensure that our sites contribute positively to the local environment in both rural and urban areas.

Our actions:

- managing our SSSI landholding to achieve and maintain favourable condition in compliance with national targets
- carrying out projects to include detailed survey and targeted management on key sites for wildlife and public enjoyment
- assessing all land for biodiversity value – ie, presence of protected and priority habitats and species
- managing sites with protected or priority habitats and species appropriately to minimise impacts on wildlife and on operational processes
- working to remove invasive non-native species from our sites or prevent their spread



Grassland and reed management at Weston-super-Mare sewage treatment works bird lagoon area.



Find out more in the wildlife and conservation section of our website.
www.wessexwater.co.uk/environment

- developing a comprehensive dataset on biodiversity and management, including GIS maps
- looking for opportunities to improve, enhance or extend habitats of intrinsic value or for protected species
- improving access to appropriate sites and interpretation of their wildlife interest
- internal training on conservation management and the legal issues regarding working with wildlife
- investigating options for tree planting or other beneficial conservation management to improve urban sites, both for wildlife and the community.

Chilcombe Bottom – a case study

Our landholding at Chilcombe Bottom, just north of Batheaston, has an interesting history and following restoration works in the 1990s, has developed into one of our best sites for bugs.

The site originally contained Batheaston reservoir, which was constructed by the Bath Corporation in 1848. Changing water quality standards and leakage through the embankment resulted in the reservoir being taken out of use in the 1980s. The restoration of the reservoir site was undertaken in 1995/6 using surplus material from the construction of the Batheaston bypass with the objective of recreating the environment of the valley before the reservoirs were built while retaining interesting historical waterworks features associated with the reservoir (including a former valve house & waterman's tool hut.

The restoration included reinstatement of streams and ponds which were added to replace the original spring fed stream which would have run down the valley. Other areas were seeded with a chalk grassland seed mix which has now established well together with hedge and tree planting of native species.

Today, the site is a haven for wildlife and we decided to look at its importance for bugs due to its marshy vegetation and ponds. Our specialist consultants spent several days sweep netting, ground searching and suction sampling at the site resulting in the identification of over 434 bug species, with representatives of the following groups: woodlice, spiders, harvestmen, dragonflies, earwigs, bush-crickets, grasshoppers, stoneflies, froghoppers, leafhoppers, planthoppers, beetles, ants, wasps, bees, sawflies, lacewings, scorpion-flies, flies, caddis-flies, moths, butterflies and molluscs.

This list included 25 Red Data Book or nationally scarce species and five Red Data book species, including the Silver Colonel, Horsetail Weevil, Roesel's Bush-cricket and the Dotted Bee-fly. While these species individually may not be striking, they paint a picture of the rich tangle of life we rarely notice beneath our feet:

- The wetter areas of the site host an abundance of Horsetail (*Equisetum* spp.) plants which the larva of the small and secretive Horsetail Weevil feeds on.
- Roesel's Bush-cricket was formerly found only in a small area of south east England (centred on the coasts of the Thames Estuary). The species has undergone a dramatic range expansion in recent decades and has now reached Chilcombe Bottom.
- In contrast, the Silver Colonel was formerly well established in an area covering Somerset to East Anglia, but in recent years has been seemingly confined to a few sites in East Anglia, Berkshire and Hampshire. It is found along canals and wetland where its larvae develop in wet moss or amongst woody debris.



The Wessex Water biodiversity action plan

2 Operational activities and development – minimising impacts

Wessex Water routinely carries out a wide range of activities that impact on the environment. These may be the daily routine activities of our treatment and supply sites and networks or through maintenance, improvement and building of new infrastructure and facilities.

Our environmental services team works in close cooperation with our engineering and construction departments and external contractors. They also provide liaison with local planning officers, environmental bodies and local residents.



Environmental screening of all proposed works ensures that negative impacts to protected or other important species, sites or features are generally avoided. Where impacts are unavoidable, working methods are devised to minimise impacts and to create suitable mitigation.

Our aims:

- to prevent potential loss of biodiversity and environmental features from operations and construction; seeking to restore environmental features elsewhere where this is not possible.

Our strategy:

- ensuring that our activities have an overall neutral or positive impact on wildlife or habitats at all scales
- supporting all parts of the business to work to assess their impacts on and benefits for biodiversity
- where possible supporting alternatives to traditional

approaches to supply and treatment that make use of the benefits that biodiversity can offer.

Our actions:

- ecological screening of all new projects including
 - liaison with relevant external bodies to agree the nature, requirements and proposed outcomes of a scheme, including environmental impact assessments
 - ensuring all habitat and species legislation is complied with during the life of a project including any appropriate protected species licensing
 - ensuring that appropriate working methods are used during construction and that appropriate materials are used for the reinstatement once work is complete
 - seeking opportunities to improve, enhance or extend habitats of intrinsic value or for protected species, including through biodiversity offsetting mechanisms
- develop novel methods for reinstatement to minimise impacts on important features such as BAP grassland and hedges
- development of working methods to ensure no inadvertent spread of invasive non-natives either on to or off our land
- internal training on environmental awareness, legislation and good working practices.



Seed harvest from a flower-rich site in Dorset to create grassland at a new reservoir site nearby.

Keeping watch over Weston – a case study

We are carrying out improvements at our Weston-super-Mare sewage treatment works to improve bathing water quality in the area to help ensure we meet new standards.

Currently sewage is treated so it is clean enough to be returned to the sea safely and ensures the current mandatory bathing water standard is met. However, we need to complete the improvements (which include increasing the secondary treatment and ultraviolet disinfection capacity - ultraviolet light very effectively kills bacteria) to further improve the quality of discharges from the works in advance of new standards under the revised Bathing Water Directive which will come into force in 2015. We are also constructing additional storm tanks on the site with 21,000m³ of storage to reduce the number of spills during the bathing water season.

This presented us with a challenge as Weston-super-Mare sewage treatment works is in a sensitive location on the Bleadon Levels in close proximity to the Severn Estuary which is protected by nature designations at the highest level. It provides an important refuge for wintering redshank, as well as feeding opportunities for other species like dunlin, shelduck, gadwall and wigeon.

The area is also popular for tourism with numerous caravan and camping sites in close proximity so balancing the interests of both wildlife and people has been quite complex.

To obtain the necessary consents and planning permission, our environmental services team carried out detailed studies and environmental consultation as part of this scheme. In particular, it was necessary to demonstrate that protected birds using the Severn Estuary would not be disturbed by the construction works. As part of the mitigation strategy, temporary bird hides have been erected at strategic positions on nearby water

bodies to allow for monitoring of bird disturbance during construction

Temporary bird hide

Mark Doughty, our senior ecologist, explained how the hides were used: "The hides were manned by ecologists during periods in which our works had the potential to disturb bird species on the estuary close by. We were prepared to record not only any instances when our construction works actually scared the birds, but also the actual sound level of the event so that we could understand the level at which disturbance crossed the line".



As predicted, that line was never crossed, and during the periods we monitored the birds, we did not record any periods when the birds took to the wing as a result of our construction activities.

We have also introduced measures to minimise disturbance to residents and tourists over the two year construction period, including measures to minimise noise

disturbance, and the exclusion of weekends and bank holidays from the working programme during the noisiest construction activity of piling.

Overall, the project has been a success, and construction has continued uninterrupted throughout. It is also hoped that we can contribute to the overall body of knowledge about the effects of noise disturbance on birds, which is relatively poorly understood..




The Wessex Water biodiversity action plan

3 Supporting external biodiversity partnerships and projects


Many of the challenges we all face in conserving and enhancing our natural environment are beyond the scale of any single landholding and outside the scope of our operational and construction activities.

The problems involve multiple environmental factors, people and activities and to help solve these we work with and offer support to other landowners, statutory and non-governmental organisations, our tenants and customers. Introduction of new methods and technologies for communication biodiversity information internally and externally..

We have several mechanisms for contributing to external partnerships.

 Our Partners Programme enables us to participate in much larger projects than would otherwise be possible. The programme offers funding to practical conservation and research projects across the Wessex Water region that:

- have specific benefits for biodiversity aligned with Wessex Water's core business activities (for example sewage treatment and water supply)
- build active and successful partnerships to benefit biodiversity across the region
- undertake detailed scientific research, training or monitoring to enhance our understanding of biodiversity. The Partners Programme is flexible in application and can be used to help projects at the end of their start-up funding to continue and grow, to help fund posts that are ineligible for other support.

 The Wessex Watermark scheme has been running since the 1990s. Funded by Wessex Water, it is run by the Conservation Foundation, an independent panel of experts. Grants of up to £2,500 are awarded to community groups of all sorts for a wide range of environmental projects including those that contribute to regional biodiversity objectives or Wessex Water's BAP.

Regional partnerships cover a wide range of activities that benefit biodiversity, ranging from strategic level groups

such as local nature partnerships to groups of organisations working together in practical conservation work at specific sites. Wessex Water's participation in these provides us with essential information on activities in the region, allowing us to share information and maintain useful contacts for the successful delivery of projects.

Details of our special projects can be found in Appendix III.

Our aims:

- to actively work with third parties to protect biodiversity in various ways – including project funding.

Our strategy:

- to support and contribute to external projects on a variety of scales
- working with partner organisations and other groups to share research and promote biodiversity
- informing and engaging with the public in our biodiversity work through our existing funding programmes and working with local groups.

Our actions:

- funding at a variety of levels including Partners Programme and Watermark awards for external organisations
- annual Partners Programme implementers' meetings to share knowledge, experience and issues across supported projects
- participation in and support of regional biodiversity and local nature partnerships
- participation in local and regional groups or partnerships for the water environment or biodiversity (for example, Association of Severn Estuary Relevant Authorities, Upper River Tone Catchment Pilot, Somerset Water Partnership)



Find out more about our partners programme at www.wessexwater.co.uk/environment in the *Wildlife and conservation* section.

Details of our Watermark scheme and how to apply can found at www.wessexwater.co.uk under *About us* in the *In the community* section



South Wiltshire farmland bird project – a case study

In April 2010 a new phase of our Partners programme began and we welcomed seven new or continuing projects into the programme.

The projects will benefit from funding until 2015, but we were very pleased to receive the news that we had won a Green Apple Award which recognised the success of the previous phase of the programme

Lapwing

We produced a detailed report which summarised the successes of the Partners programme until 2010 and highlighted the benefits both the environment and Wessex Water receive from the programme.

The Partners programme is a Wessex Water initiative which provides funding to projects carried out by wildlife organisations to conserve and enhance biodiversity throughout our region, and it complements our own work to help wildlife on our sites and protect the environment during construction.

One of our new partners is the South Wiltshire farmland bird project. The project has been running since August 2009 alongside similar projects collectively known as the South West Farmland Bird Initiative and includes Cranborne Chase and West Wiltshire Downs AONB, Natural England and the RSPB as partners.

Its aims are to stabilise and increase populations of farmland birds and other wildlife associated with arable farmland, including six key nationally and regionally declining species: lapwing (pictured), grey partridge, corn bunting, yellow wagtail, tree sparrow and turtle dove.

The two key features of the project are:

- the farmland bird package – a research backed menu of habitat options available to farmers



through agricultural stewardship schemes to provide nesting areas, summer food (normally insects) and winter food (seed)

- detailed recording of birds across the project area to enable direct targeting of specific species and to prove the success of the measures.

The project has got off to a flying start and has already provided specialist advice from the project officer on 6766ha of arable land across South Wiltshire with 180ha of land delivering parts of the farmland bird package in place.

In 2010, funding from Wessex Water has also been used to provide small grants towards projects including:

- a new water supply to enable re-introduction of grazing on chalk grassland
- scrub clearance to improve bird habitat in the Wylve Valley
- new fencing to allow grazing of chalk grassland created from arable land
- a research study into rare arable plant records to identify future target areas
- new tree sparrow nest boxes for farms with known breeding populations (continuing the work of a previous Partners programme project).

Our future funding will contribute towards the core costs of the projects and allow the important work of the project officer in providing support to farmers to continue. Find out more about the project..

The Wessex Water biodiversity action plan

4 Catchment scale work

Catchment scale work is about minimising the effects of human activity on river systems, wetlands and groundwater by directly managing inputs to rivers and the land surrounding them (catchments). For Wessex Water much of this work is undertaken in order to reduce pressures on water treatment processes but there are also direct benefits to biodiversity. The key legal drivers for this work are the (European) Water Framework Directive and the Water Supply Regulations

Payment for ecosystem services is a new way of trying to place a market value on the benefits that biodiversity provide for us in order to fund the restoration and maintenance of healthy ecosystems in our countryside.

Water companies have started to develop methods to evaluate of the benefits and costs that arise from our actions to improve the water environment and this has been incorporated into the long term planning that we do for Ofwat and the Environment Agency.

The Water Framework Directive aims to restore all water bodies to good ecological condition using river basin management plans.

Wessex Water is contributing to river basin management plans by working with the Environment Agency on minimising impacts on rivers from discharges of treated sewage effluent and abstractions for drinking water and by research on the impacts of water company activities on water bodies and other sensitive sites

The Water Supply Regulations require a wide range of common pollutants to be removed from drinking water and so for us landscape scale work also means minimising the inputs of diffuse pollution – mostly nitrates and pesticides – in a catchment. This helps us to provide clean drinking water without using excessive treatment

Our aims:

- to work at a catchment scale and with partners to ensure the environmental integrity and biodiversity of river and groundwater catchments being in good or excellent condition; encouraging greater consideration of the ecosystem services provided by catchments within water policy, regulation, investment planning and the actions of other interests; championing partnership-led catchment management work and promoting long-term, sustainable implementation of the Water Framework Directive.

Our strategy:

- ensuring that work within our catchments explores the widest range of opportunities for environmental gain, working in partnership with other sectors and organisations to deliver a healthy natural environment
- to contribute to efforts to maintain and restore ecosystem services across the region
- supporting all parts of the business to work to assess their impacts on and benefits for biodiversity
- where possible supporting alternatives to traditional approaches to supply and treatment that make use of the benefits that biodiversity can offer.

Our actions:

- maximising biodiversity gain through its consideration in cost benefit assessment within the company's development plans
- investigative projects to determine the scale and nature of the impact from our activities (for example, the impact of discharges on SSSIs and contribution to the Water Framework Directive and river basin management plans
- Frome and Piddle pilot catchment project
- ongoing research, internal and collaborative, into alternative solutions to supply and treatment
- ensuring that nitrate and pesticide concentrations in the raw water at 15 sources remain below permitted concentration or value (PCV) levels at all times.

Investigations

Between 2010 and 2015 we are carrying out eight investigations into areas of our work that may impact on river ecology and that will help us and our regulators understand the impacts of our business on water quality. These include:

- investigating the effect of groundwater abstraction on river flows and river ecology
- investigating the effect of the reservoir impoundment on good ecological potential for the water framework directive as part of a national project
- development of a standard method for good ecological potential for heavily modified water bodies, ie, reservoirs

- investigating the cause of high phosphorus levels in selected reservoirs
- investigating water abstractions and excessive nutrients which affect the condition of the River Frome, River Wey, Bere stream and Poole Harbour SSSIs.

The investigations require regular ecological monitoring of fish, macrophytes (river plants) and water quality surveys. These will be completed by 2013 and, should mitigation be required, this will be considered in the 2014 water resource management plan and the AMP6 business plan.

Other parts of the company work in external partnerships including with landowners to improve the

general water environment for the benefit of all.

Wessex Water's catchment management team (www.wessexwater.co.uk/sustainability/customersandcommunities/default.aspx?id=3428) works with the farming community to stop pesticides and nitrates from entering water at source, so reducing the need to use expensive end-of-pipe treatments. There are also benefits to wildlife from reduced use of pesticides on land and lower levels of nutrients running into watercourses and wetlands.

Details of our catchment scale work can be found in Appendix III

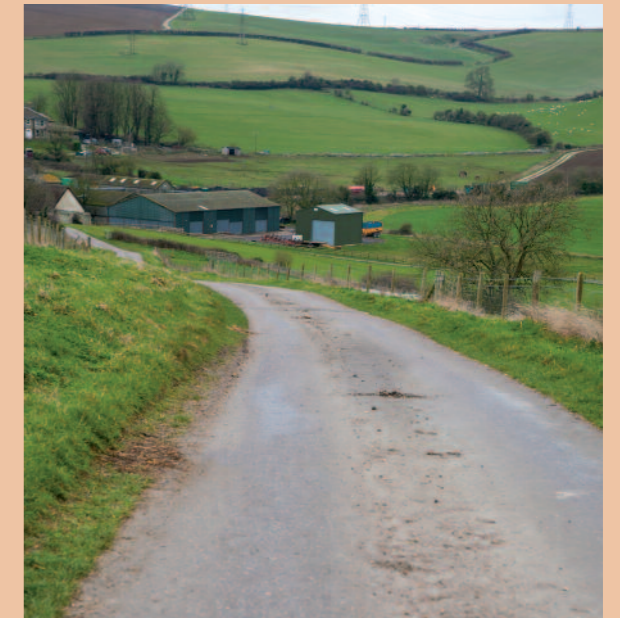
Friar Waddon pesticide – a case study

Friar Waddon is a groundwater source that supplies Weymouth and Portland. The underlying geology is highly fractured limestone.

In the early 2000s high pesticide peaks, associated with intense rainfall, meant that Wessex Water had to take action in order to maintain water quality compliance. Treatment was considered but the cost to build and operate the works and the sporadic nature and very high levels of the pesticide peaks made it an unattractive option. An alternative plan was required.

Contact with catchment farmers and analysis of data revealed a strong link between:

- the source pesticide peaks
- intense rainfall and runoff episodes
- the mixing of pesticide on a farmyard upstream of the source, and



- spraying of that same pesticide on adjacent fields.

Based on this understanding, a non-treatment option was agreed between Wessex Water, the farm owner and the water quality regulators.

This involved a radical catchment management agreement that saw the complete cessation of pesticide use over 160 hectares (400 acres) of the catchment adjacent to Friar Waddon source for a three-year period and the construction of a new, purpose-built spray shed on the farmyard, financially supported by Wessex Water.



The Wessex Water biodiversity action plan

Frome and Piddle Pilot catchment initiative – a case study

Wessex Water is leading a project on the rivers Frome and Piddle in Dorset, in conjunction with the Environment Agency, Defra, Natural England, environmental charities and local interest groups such as fishing clubs. This will build on work already carried out or funded by Wessex Water. The project is looking into the causes of pollution and floods in the catchments and will work to deliver solutions and share knowledge gained with others.

Much of the River Frome is a SSSI but is in poor condition for a designated site and both it and the River Piddle fail to meet Water Framework Directive targets for aquatic plants, invertebrates and fish; high nutrient levels are just one of many factors contributing to this.

As high nutrient levels in our sources are also a problem to Wessex Water, we have agreed to host a catchment pilot for the Environment Agency in conjunction with them, Defra, Natural England, environmental charities and local interest groups such as fishing clubs. This is trialling a partnership approach to developing and delivering a River Basin Management Plan as required under the Water Framework Directive.

The partnership will deliver water quality, river structures and biodiversity improvements to the



rivers and catchments of those rivers and to Poole Harbour downstream.

An aim of the projects is to ensure that the actions required to deliver any particular improvement, such as reduced nitrate into the groundwater for drinking water standards, offer the most benefits to the other aims such as biodiversity.

This project will also help Wessex to consider its future development needs on a catchment wide, holistic basis and sustain the strong relationships with regulators and NGO partners.



Find out more about the Frome and Piddle catchment initiative at www.wessexwater.co.uk/environment in the *Catchment management* section.

5 Engagement and education

Working to protect and enhance our biodiversity is only part of the story. We need to report our achievements so that our work may contribute to national targets.

We report our activities for biodiversity in a wide range of forms to engage with other stakeholders and inform the public. Formats range from publication of studies in professional journals to press releases; from collection of biological data on habitats and species on our land which we share with environmental records centres across the region to information boards at sites open to the public.


Our aims:

- Report on our activities in the widest possible way.
- To use our data and information to inform and engage with regulators and other stakeholders
- To demonstrate contribution to national and regional aims and targets for biodiversity.

Our strategy:

- Reporting progress internally and externally to demonstrate the effectiveness of our work, lessons learnt and value for money.
- Reporting the widest possible range of Wessex Water activities that result in benefits to biodiversity.

Our actions:

- Annual assessments to quantify and qualify biodiversity work across WW business as part of Conservation Access & Recreation (CAR) report.
- Five-yearly review of the WW BAP in line with the company Periodic Reviews.
- Regular newsletter publication  to external partners.
- Public information including web pages and newsletters.
- Improved data collection and management including GIS to quantify existing biodiversity assets and record changes.
- Introduction of new methods and technologies for communication biodiversity information internally and externally.



Catch up with the latest edition of our newsletter at www.wessexwater.co.uk in the *Wild Watch!* news section.



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Photos courtesy of Andrew Caird BBOWT, Wessex Chalk Streams Project AND RSPB.
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Appendices

Appendix I

Summary table of key legislation and national guidelines covering biodiversity issues.

International
<ul style="list-style-type: none"> • International Convention on Biological Diversity, COP10 Nagoya 2010 • Agreement on the Conservation of Bats in Europe, London 1995 • Convention on the Conservation of European Wildlife and Natural Habitats, Bern • Convention on Wetlands of International Importance especially as Waterfowl Habitat, Ramsar
European
<ul style="list-style-type: none"> • Habitats Directive (92/43/EEC) – Conservation of Natural Habitats and of Wild Flora and Fauna • Conservation of Wild Birds Directive (79/409/EC) • EU Water Framework Directive (2000/60/EC) • Marine Strategy Framework Directive (2008/56/EC) • Environmental Impact Assessment Directive • EUDirective on the assessment of the effects of certain plans and programmes on the environment (2001/42/EC)
UK
<ul style="list-style-type: none"> • National Parks and Access to the Countryside Act 1949 • Wildlife and Countryside Act 1981 (as amended) (W&CA) • Weeds Act 1959 • The Protection of Badgers Act 1992 • Environment Act 1995 • The Hedgerow Regulations 1997 • Water Industry Act 1991 and 1999 • Water Supply (Water Quality) Regulations 2000 • Countryside and Rights of Way Act 2000 • Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 • Natural Environment and Rural Communities Act 2006 (NERC) • Guidance for Public Authorities on Implementing the Biodiversity Duty Defra 2007 • Environmental Damage (Prevention and Remediation) Regulations 2009 • Conservation of Habitats and Species Regulations 2010 • Marine Strategy Regulations 2010. • National Planning Policy Framework 2012 • Government Circular 06/2005 • Water Industry Code of Practice on Conservation, Access and Recreation • "The Natural Choice: securing the value of nature", Defra Natural Environment White Paper 2011 • "Biodiversity 2020: A strategy for England's wildlife and ecosystem services", Defra 2012 • Making Space for Nature: a review of England's Wildlife Sites and Ecological Network, Lawton (et al) 2011 • Water for Life, Defra Water White Paper 2011

Appendix II

BAP projects 2010-2015.

We are carrying out a number of environmental investigations throughout the region from 2010-2015.

We have a duty to protect, conserve and enhance the wildlife on the land which we own. This includes our operational sites such as reservoirs and sewage works, but also the land which may be tenanted out to farmers or wildlife organisations.

Many of our reservoir sites have public access including sailing or fishing clubs, nature trails and education centres.

There are two main projects from 2010-2015:

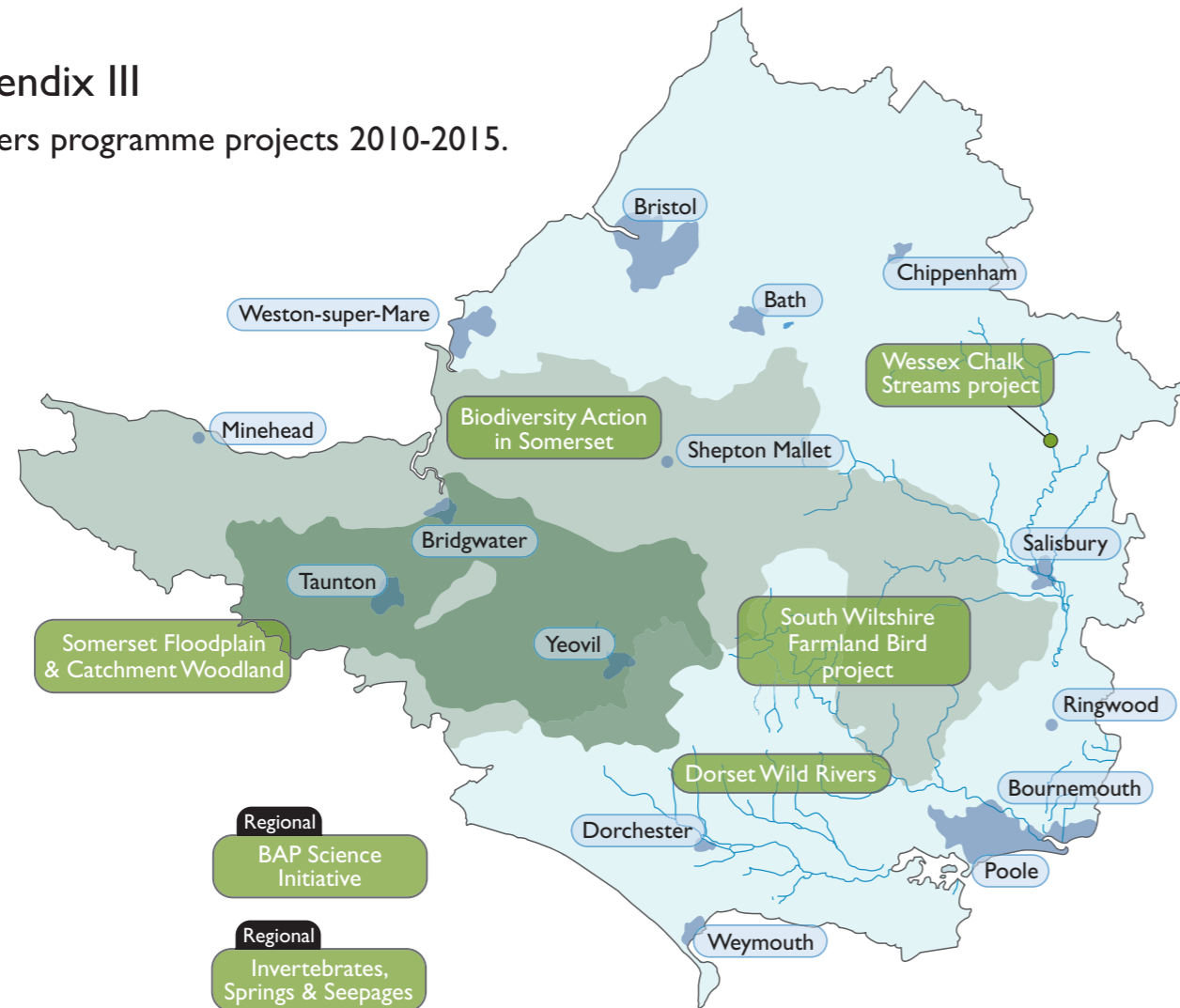
<p>We are looking to understand how invertebrates use the following sites:</p> <p>Somerset: Clatworthy, Nutscale and Sutton Bingham reservoirs</p> <p>Dorset: Sutton Poyntz</p> <p>BANES: Chilcombe Bottom and Tucking Mill</p>	<p>We'd also like to make sure that this information is shared with the public and that these sites are accessible so that people can understand more about the wildlife on these sites.</p> <p>What happens then?</p> <p>All the survey reports will be shared with Natural England and where appropriate made available to local wildlife and interest groups. For each site a dynamic management plan will be drawn up to inform the maintenance work required into the future which will give wildlife benefits and hopefully.</p> <p>Finding out more</p> <p>Check the environment section of this website for the latest or contact Ruth Barden at env.info@wessexwater.co.uk</p>
<p>We are looking to understand how invertebrates use these sites. The first two years of this project will involve intensive survey work to identify the species which we find at these locations, understanding the numbers of animals and the ways in which they use our landholdings.</p> <p>The following years will focus on the management which is required to maintain and encourage these populations at appropriate locations.</p>	<p>numbers of animals and the ways in which they use our landholdings.</p> <p>The following years will focus on the management which is required to maintain and encourage these populations at appropriate locations. This could include scrub clearance, installing nest boxes and many other activities.</p> <p>We'd also like to make sure that this information is shared with the public and that these sites are accessible so that people can understand more about the wildlife on these sites.</p>
<p>We are looking to understand how birds and bats use the sites below:</p> <p>Somerset: Clatworthy reservoir, Otterhead Lakes, Nutscale and Sutton Bingham reservoirs</p> <p>Dorset: Hooke</p> <p>BANES: Tucking Mill</p>	<p>The first two years of this project will involve intensive survey work to identify the species which we find at these locations, understanding the</p>



Details on our current work, research and projects can be found on our website. www.wessexwater.co.uk/environment in the *Investigations* section

Appendix III

Partners programme projects 2010-2015.



Dorset Wild Rivers (Dorset Biodiversity Partnership)

Aims – Deliver river and wetland habitat restoration in the Dorset Frome Valley, Piddle Valley and Stour Tributaries.

Specific focus – species/habitat – Mainly chalk rivers – grazing marsh, fen, reedbed, species rich grassland and wet woodland. Species include bechstein’s bat, wading birds, salmon, eel, brown trout, white clawed crayfish, southern damselfly, dragonfly and some stone fly species.



South Wiltshire Farmland Bird Project (led by Cranborne Chase & West Wiltshire Downs Area of Outstanding Natural Beauty)

Aims – Part of the South West Farmland Bird Initiative to reverse decline in farmland bird populations across South Wiltshire by working with farmers and tackling diffuse pollution and water quality issues.

Specific focus – species/habitat – The “arable six” birds – lapwing, grey partridge, turtle dove, yellow wagtail, tree sparrow, corn bunting. Arable plants and field margins; chalk grassland and streams and hedgerows.



Appendices

Biodiversity Action in Somerset (Somerset Biodiversity Partnership)

Aims – Promote and facilitate implementation of the Somerset Biodiversity Strategy and LBAP.

Specific focus – species/habitat – Somerset priority habitats and species including (for example): traditional orchards, ditches and ponds; water and wetland; woodland otter, bats, lapwing, long eared owl.



Wessex Chalk Streams Project (Wessex Chalk Streams Partnership)

Aims – River restoration and work with other stakeholders to reconcile the links between the public, water usage and rivers

Specific focus – species/habitat – chalk rivers - water vole, white-clawed crayfish, salmon, brown trout, brook lamprey, river water crowfoot, starworts, watercress and lesser water-parsnip.



Wessex BAP Science Initiative (Ecological Research and Training)

Aims – Facilitate joint BAP and science activity between the region’s universities and local BAP partners.

Specific focus – species/habitat – Provide all LBAP partners with free access to inventory of BAP relevant research and monitoring skills at universities and institutes in the Wessex Water region, free access to training courses and web based training material.



Floodplain and Catchment Woodland (Somerset Farming and Wildlife Advisory Group)

Aims – Increasing woodland cover in key locations to reduce run-off and soil erosion and to attenuate flood flows in parts of the floodplain.

Specific focus – species/habitat – Otter and semi-natural woodland.



Invertebrates, springs and seepages (Buglife)

Aims – Springs and seepages are small habitats which link groundwater, surface water and terrestrial habitats. Often overlooked as a habitat and under-researched, the project will identify key sites, identify the species using them and create management guidance.

Specific focus – species/habitat – Cliff tiger beetle, Southern Damselfly, bog hoverfly, southern yellow splinter, south-western groundwater shrimp, rock face beetle and Geyers whorl snail.



Find out more about our partners programme at www.wessexwater.co.uk/environment in the *Wildlife and conservation* section.

Appendix IV

Catchment scale work – investigations

1.1.1 River Wey

At the upper end of the Wey, we need to investigate the effect of abstraction on the river flows. At Radipole Lake, we will be assessing the contribution of sewerage infrastructure to the high nutrient levels in the lake.

1.1.2 Bere Stream

Here we will be looking at the effect of both abstraction and sewage discharge from the village of Milborne St Andrew on the Bere Stream.

This chalk stream, which is protected as a site of special scientific interest at its lower end, has higher nutrients (phosphorus) levels than ideal.

1.1.3 River Frome (Dorset)

Here we are looking at the contribution of our sewage discharges on the nutrient levels (phosphorus) in the river.

We will also be measuring the improvements through recent changes at Dorchester sewage treatment works and at the possible effects of future development in that town. Data for nitrogen will also be collected.

1.1.4 River Piddle, Sherford and Poole Harbour

Along with the contribution from the River Frome, we will collect samples to assess the contribution from our sewage treatment works to the rivers which feed into Poole Harbour.



This harbour is protected as a site of special scientific interest and for its internationally important bird community.

The nitrogen levels are currently higher than ideal and the Environment Agency will investigate other sources of nutrients.

1.1.6 Regionally

At six sewage treatment works across the region we will be involved in a water company-wide project to investigate the occurrence of particular substances in the sewerage system.

This investigation will look at the levels at which these substances occur in the effluent discharged to watercourses and in sludge.

At one site we will also be investigating the levels at which these substances enter the sewage treatment works and the removal rates of the treatment processes used. These results will be collated nationally.



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