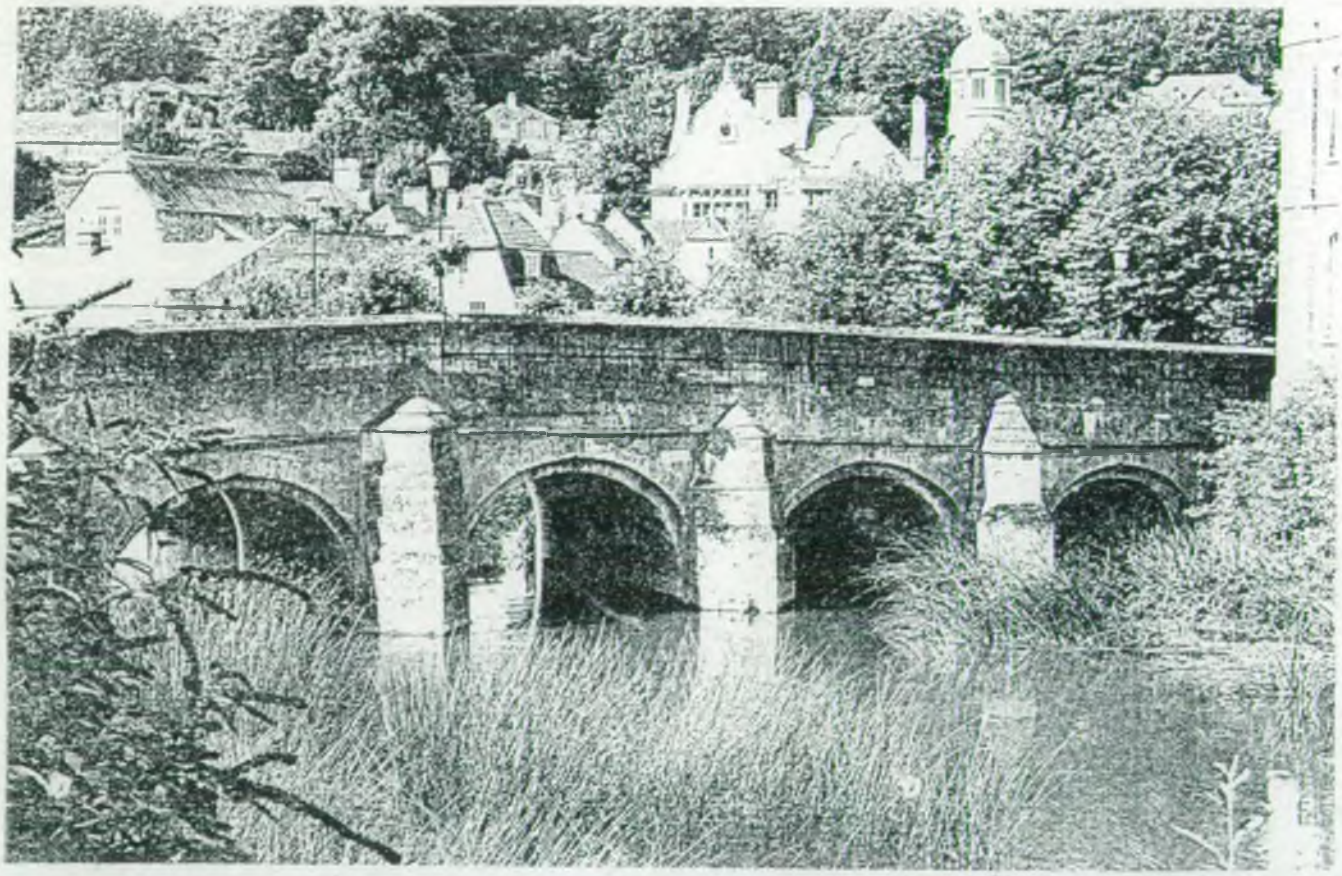
local environment agency plan

BRISTOL AVON

FIRST ANNUAL REVIEW

SEPTEMBER 2001



ENVIRONMENT AGENCY

Map 1 – Bristol Avon Catchment Area

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Section 1 - Introduction

1.1. Bristol Avon First Annual Review

This is the First Annual Review of the Bristol Avon Action Plan. Its purpose is to provide an account of the progress made by the Environment Agency on the actions set out in the Action Plan.

The review should be read in conjunction with the Bristol Avon Action Plan (2000) which provides more details and background to the issues and actions. Copies are available on request from the Bridgwater office of the Environment Agency.

1.2. The Environment Agency

The Environment Agency is a non-departmental public body established by the Environment Act of 1995, and formed on 1 April 1996.

We have a wide range of duties and powers relating to different aspects of environmental management. These are given in detail in Appendix 11.2. The Government requires that we help achieve the objectives of sustainable development, defined by the Rio Earth Summit (1992) as '*development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*' Local Authorities have responded to the aims of the Rio Earth Summit by adopting Local Agenda 21 initiatives which we continue to support.

Taking a long-term perspective will require us to anticipate risks and encourage precautions, particularly where irreversible or long-term impacts on the environment are concerned. We must also develop our role to educate and inform society as a whole to '*think globally but act locally*,' as well as carrying out our prevention and enforcement activities. We also work in partnership with those who share common objectives, to ensure the continuing protection and enhancement of the environment.

In January 2001 the Environment Agency launched 'An Environmental Vision: The Environment Agency's contribution to sustainable development'.

This vision is based around nine themes or goals for achieving "a healthy, rich and diverse environment in England and Wales for present and future generations." Copies of *An Environmental Vision: The Environment Agency's Contribution to Sustainable Development* can be obtained from our Bridgwater Office.

These goals are:

- a better quality of life for the whole community;
- an enhanced environment for wildlife;
- cleaner air for everyone;
- improved and protected inland and coastal waters;
- restored and protected land with healthier soils;
- a 'greener' business world;
- wiser, sustainable use of natural resources;
- limiting and adapting to climate change;
- reducing flood risk.

LEAPs play a key part in working towards a more sustainable environment.

1.3. Local Environment Agency Plans

We are committed to a programme of Local Environment Agency Plans (LEAPs), which allow us to produce our local programme of integrated actions for environmental improvement. LEAPs are based on river catchment areas.

LEAPs help us to identify and assess, prioritise and solve those local environmental issues within our remit and related to our functions. They also allow us to take into account the views of our local customers through a consultation process. As a result, LEAPs help us to deploy our resources to best effect and optimise benefit for the local environment. The LEAP process involves several stages as outlined below.

- **LEAP Action Plan Consultation Report:**

The Bristol Avon Consultation Report was published in April 1999, beginning a three month period of public consultation. The purpose of the consultation period is to allow the Agency, external organisations and the public to liaise and reach a consensus about the management of the LEAP area.

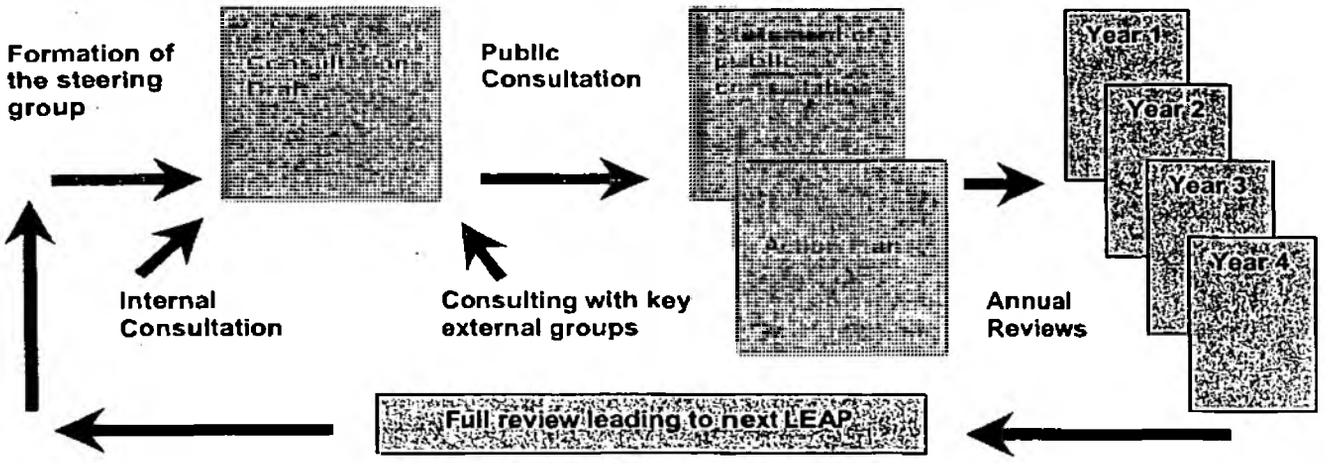
- **LEAP Action Plan:**

The Bristol Avon Action Plan was published in March 2000 and draws together the issues and views which arose during the consultation process. It illustrates how the Agency intends to deal with the environmental issues in the Bristol Avon catchment highlighted during the consultation process and contains details of specific actions which have been formulated to tackle individual issues. Partnerships with external groups, time scales and costs are also identified for each action.

- **Annual Reviews:**

The annual reviews are the method by which progress in implementing the actions set out in the action plan is reported. They also provide the opportunity to assess any new issues in the catchment and produce new actions.

The LEAP Process:



We invite readers to contact us at any time to raise new issues or suggest new actions; this ensures the LEAP process is a live one, which constantly evolves to meet the changing needs of the local environment.

1.4. The LEAP Steering Group

The LEAP Steering Group contains representatives of a range of interests who endorse the Consultation Report and Action Plan prior to public release. They monitor the implementation of the Action Plan by contributing to the Annual Reviews. They also provide the Agency with specific advice on concerns within the plan area and inform us of any new issues. The Steering Group acts as a communication link between the local community, the Agency and its committees, and also helps to promote and develop initiatives of benefit to the environment within the catchment.

The Steering Group members for the Bristol Avon LEAP are:

Name	Representing
Mrs L Bennett	Area Environment Group
Mr M Stoodley	Fisheries
Mr J Lewis	The Five Valleys Trust
Mr T McGrath/Mr M Lang	Avon and Wilts Wildlife Trust (shared attendance)
Mr R Cripps	Lackham College
Dr A Finnie	Wildscreen at Bristol
Mr S Marston	Farming and Rural Conservation Agency (DEFRA)
Mr S Eades	North Wiltshire Friends of the Earth
Mrs G Ellis-King	South Gloucestershire Council
Miss J Evans	West Wiltshire District Council
Mr M Smith /Ms L Coward	Farming and Wildlife Advisory Group (FWAG) (shared)
Ms J Milling	Mendip District Council
Ms S Murtagh	Bath and North East Somerset Council
Mr D Rapley	Wiltshire County Council
Mrs K Derrick	Bristol City Council
Mrs A Lennox	Ramblers Association
Mr M Berry	Bristol Water
Mr M Goodenough	British Waterways
Mr G E Harman	Inland Waterways Association
Mr C Morris	Rhodia Organique Fine Ltd
Mr P Norris	Great Western Community Forest, Swindon Borough Council
Mr W Summers	Rolls Royce Plc
Mr Stephen Bendle	ENVOLVE
Mr M C B Strickland	Abbotts Court Associates
Mrs G Shaw	DEFRA
Mr A Cormie	Western Partnership for Sustainable Development
Mr A Aldous	Bristol Avon Flood Defence Committee
Mr O Jones	The House Builders Federation
Mr P Longden	British Canoe Union
Mr J Ridgeway	Chumgold remediation group
Mr M Venning	Wessex Water
Ms J Martell	Countryside Agency
Mr T Fell	Devizes Angling Club
Mr D R Levy	General
Mr P Davis	House builders Association
Mrs S Campbell	Environment Trust
Mr J Martin	Western Skip Hire
Ms J Stephenson	General

1.5 Catchment overview

The Bristol Avon has a large catchment encompassing the two major cities of Bristol (390,000 residents) and Bath (82,000 residents), as well as diverse industry, varied agriculture and increasing tourism. The river basin is encircled by the hills of the Cotswolds, Salisbury Plain and the Mendips. It runs through gentle rural landscapes and old towns such as Bradford-on-Avon and Bath, before bursting through the Clifton Gorge to the sea.

The main River Avon is a slow-flowing lowland clay river, which has been modified by impoundment, land drainage and flood alleviation engineering. The intensive agriculture in the floodplain has resulted in very few wetlands remaining in the catchment.

The Bristol Avon catchment supports a diverse range of wildlife and plant species, including a number of key biodiversity species such as the otter, water vole and native crayfish. Watercourses of particularly high conservation value include the Marden, the only true chalk stream in the Avon catchment, the By Brook and the River Mells, both spring-fed calcareous (containing dissolved limestone) rivers.

There are many opportunities for recreation and amenity in the area. In addition to angling, the river is used for boating and public footpaths allow access to the banks for bird watching and walking. In recent years, local groups have set up projects as part of the Local Agenda 21 initiative to enhance the environment and amenity of the river corridor.

Industry and employment in the area is diverse. There are dairy and food processing plants in several of the settlements. In recent years light engineering has become more widespread. The development of industrial estates has increased the problems of surface water runoff and chemical spillage in addition to the consented discharges to the river.

The natural environment is under pressure from the large population in the area. In addition, the area has to provide locations for a large number of new houses all of which will put extra demand on water resources and produce increased quantities of solid waste and sewage requiring disposal. Increased road traffic leads to increased air pollution, particularly in towns and cities.

1.6 Resources

In the action tables the estimated costs of actions for the catchment have been given where possible. The costs are given as thousands of pounds (£k) and include staff time.

The following figures, presented in the Agency's North Wessex Area Business Plan, have been included to give an indication of available resources and expenditure on Agency functions by area to provide a context for spending priorities in the Bristol Avon catchment. Regrettably these figures are not available at a catchment level.

Figure 1: Area budgets for 2001/2002

Function	Budget
Environmental Protection	£3,202 (k)
Fisheries, Ecology and Recreation	£993 (k)
Flood Defence and Water Resources	£5,322 (k)

1.7 Priorities

A large proportion of the North Wessex Area budget is used to undertake work required of us by legislation and regulation, and by Agency 'national must-do's'. This includes committing substantial resources to everyday monitoring and management of the environment. Remaining resources are used to undertake other environmental works throughout the area on a priority basis, reviewed annually as part of our business planning process.

The issues identified in this plan have arisen despite our considerable statutory work and the work of other organisations. Some issues can be resolved by reprioritising and redirecting our resources within our statutory work programme, sometimes requiring the help and co-operation of other bodies. Other issues require action over and above our statutory work and funding; resources for this work are not certain. Matched project funding is usually required in these cases.

Some issues require solutions beyond the scope of our existing budgets or technology. However, these are still valid issues and so are included in this plan in the hope that a solution may be found in the future.

Although the plan period is for five years, because of the short-term nature of our funding, we can often only firmly commit ourselves to action in the current and next financial years. Our priorities, policies and budget may change, so changing our action programme. For example, development pressures within the catchment have resulted in a significant increase in workload, responding to both planning applications and general information requests. The outlook is for such development to continue, maintaining the pressure on staff resources and so affecting the prioritisation of non-routine actions.

The non-statutory actions in this plan have been prioritised, together with those from our other LEAP areas and other proposed actions. Those actions which do not receive funding from statutory budgets have been given a priority number of 1-3, with 1 being the highest priority. The priority of these actions is listed next to each one in the progress reports in Section 4.

Our Managers take into account the priority LEAP actions when producing our Annual Business Plan.

Section 2 - New Legislation

Habitats Directive

The European Community Birds Directive and the *Habitats Directive* place responsibilities on the Agency in addition to our normal conservation duties. The aim of the legislation is to protect and conserve certain threatened species and habitats throughout Europe. This is being achieved by the establishment of a network of nature conservation sites that are known as the Natura 2000 Network. Natura 2000 sites are Special Protection Areas (SPAs) which are designated under the Birds Directive, and Special Areas of Conservation (SACs) which are designated under the Habitats Directive. It is Government policy that RAMSAR wetland sites (sites identified under the Convention on Wetlands of International Importance, which was ratified by the United Kingdom Government in 1976) will also be considered under the Habitats Regulations. The Government has decided that once a possible Special Area of Conservation (pSAC) has been submitted to Brussels (i.e. it has become a candidate Special Area of Conservation or cSAC) the Regulations will apply.

There are four sites in the Bristol Avon catchment, which are part of the Natura 2000 network.

Figure 2: Natura 2000 sites in the Bristol Avon catchment

Site	Designation	Qualifying interests
Avon Gorge Woodlands	cSAC	• **Dry woodlands and scrub** - Ravine woodlands (forests of slopes, screes and ravines) • **Dry grassland** - Semi-natural dry grasslands and scrubland facies: on calcerous substrates
Bath and Bradford-upon-Avon	cSAC	Mammals of wooded habitats - Greater Horseshoe Bat, Lesser Horseshoe Bat and Bechstein's Bat
Chew Valley Lake	SPA	• Internationally important numbers of migratory species: Shoveler
Mells Valley	cSAC	• **Mammals of wooded habitats**- Greater Horseshoe Bat • **Dry Grassland** Semi-natural dry grasslands and scrubland facies on calcerous substrates • **Caves** not open to the public

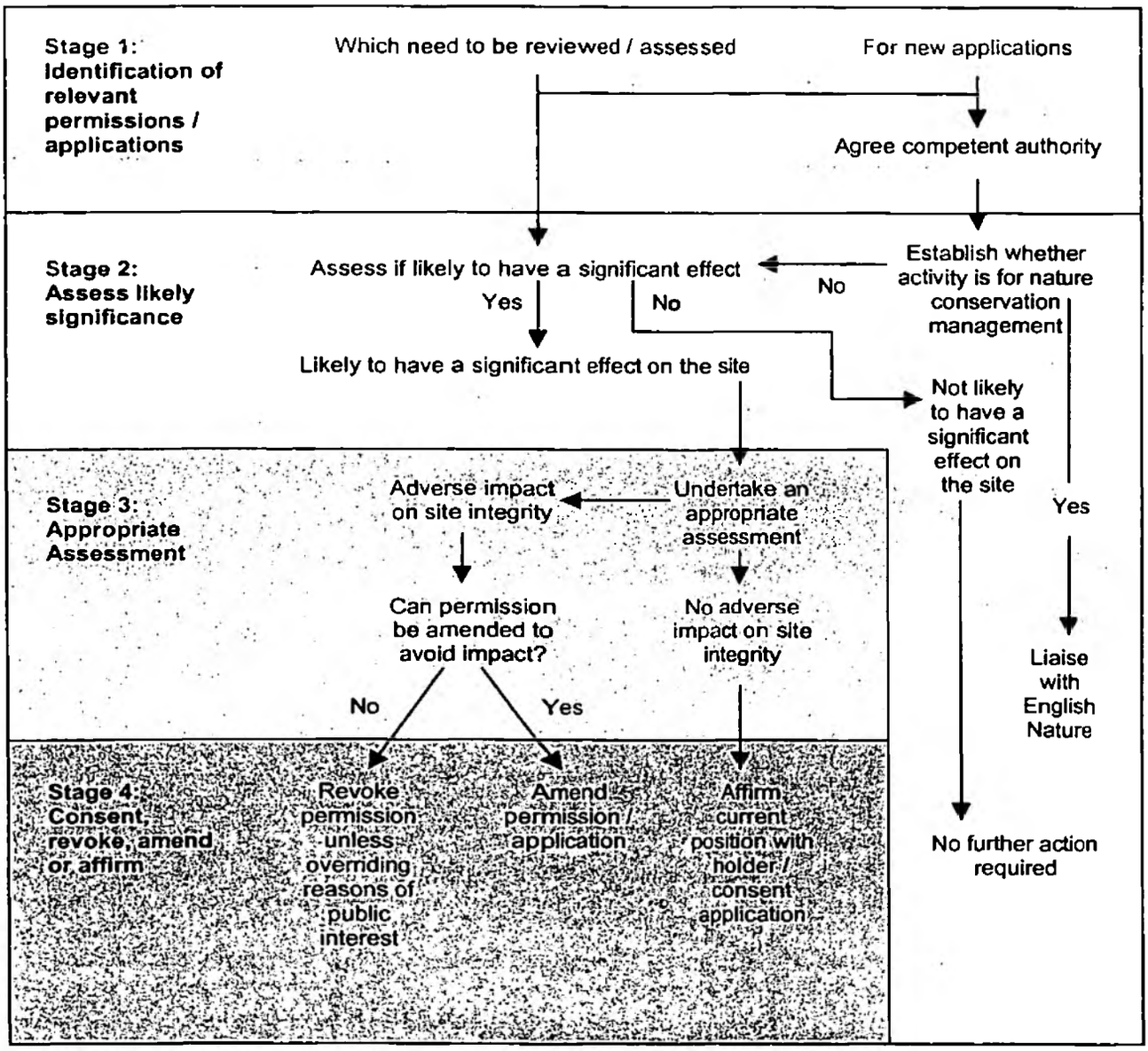
In addition the Severn Estuary borders part of the Bristol Avon catchment.

Site	Designation	Qualifying interests
Severn Estuary	SPA, pSAC, RAMSAR site	**SPA** • Wintering populations of Bewick's swan • Over 20,000 wildfowl • Five species of migratory waterfowl (Eurpopean white fronted goose, Shelduck, Gadwall, Dunlin and Redshank) **RAMSAR** • Immense tidal range • Migratory fish (including Salmon, Sea Trout, Sea Lamprey, Allis Shad, Twaite Shad and Eel) • Over 85,000 wildfowl, staging area for over 1,500 whimbrel **pSAC** • Estuarine and Intertidal habitats • Submerged marine habitats • Fish- Allis shad, Twaite shad, Sea lamprey, River lamprey.

The Agency, as a 'Competent Authority', has extra responsibilities to safeguard these sites. Any applications for new authorisations (consents to discharge, abstraction licences, waste licences, Integrated Pollution Prevention and Control permits, Radioactive Substances Authorisations) and activities (land drainage or flood defence work), that may have a significant effect on a Natura 2000 site, will be subject to an appropriate assessment of the likely impact on the conservation interests of the site. We are obliged to review all existing authorisations and activities that may be affecting the sites. These authorisations can be either inside or outside the site, as those outside the boundary may still have the potential to impact on the site's qualifying interests.

Figure 3 summarises the identification and authorisation process under the Regulations. The appropriate assessment of the effect of a new or existing activity or authorisation on a Natura 2000 site must take place in the light of conservation objectives supplied by English Nature. The authorisation or activity can only be allowed where the assessment has demonstrated that it will not adversely affect the integrity of the site. The Government will decide where it is considered that there are imperative reasons of over riding public interest.

Figure 3: Summary of the consents process under the European Community Habitats and Birds Directives



Water Framework Directive

The European Water Framework Directive was introduced in the UK in December 2000. This date signified the beginning of a three year consultation process. The Directive has to be transposed into domestic legislation by 2003.

The new directive will replace a variety of issue specific directives, which have governed water management in the UK for the last three decades. It will introduce a more integrated approach, including both water quality and quantity issues, ecological and chemical standards. It will also take a more holistic approach to river catchments and introduce the concept of River Basin Districts, administrative areas based on the catchment rather than political boundaries. All inland waters will be covered including surface, ground, transitional and coastal waters.

The key objectives are to:

- Prevent further deterioration and protect and enhance the status of aquatic ecosystems and associated wetlands.
- Promote sustainable water consumption.
- Contribute to mitigating the effects of floods and droughts.

The Directive sets out arrangements for river basin administration and planning based on common objectives for water status. Implementation will require member states to develop "River Basin Management Plans" as a statutory planning process subject to public consultation and review on a six year cycle.

The Directive is significant for taking a holistic approach to water management and for introducing monitoring and assessment strategies common to all Member States in the European Union.

Landfill Directive

The European Union Landfill Directive will require a number of changes to the waste industry and waste regulation in the United Kingdom after 16 July 2001. The Government intends to consult shortly on regulation to implement the Directive.

The main requirements of the Directive will be:

- Biodegradable Municipal Waste going to Landfill nationally must be reduced to 75%, 50% and 35% of that produced in 1995 by 2010, 2013 and 2020 respectively.
- All landfills must be classified as either for hazardous waste, non-hazardous waste or inert waste.
- With few exceptions, all waste must be treated before going to landfill.
- Co-disposal of hazardous wastes with other wastes will not be permitted.
- Liquid wastes, explosive, corrosive, oxidising, highly flammable and flammable wastes will be banned from all landfills, as will some hospital and other clinical wastes and whole and shredded tyres.

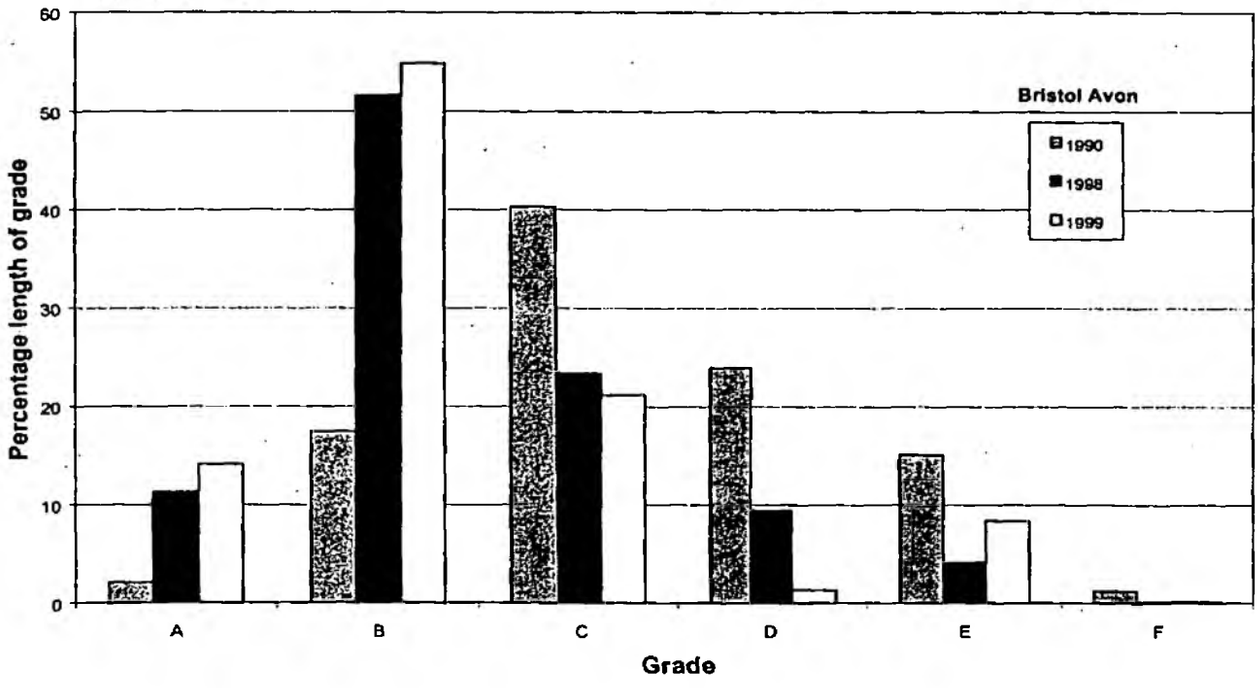
Sites must also have:

- Detailed operations and monitoring plans.
- Plans for closure and aftercare including adequate financial provision.
- Plans to prevent accidents and limit their consequences.
- Operators and their staff to be technically competent.
- Prescribed engineering requirements to protect ground- and surface waters or an auditable site risk assessment to demonstrate equivalent environmental protection.
- Controls on the migration of landfill gas and measures to use or flare it.

Section 3 - Key achievements

Overall water quality in the Bristol Avon catchment has significantly improved between 1990 and 1999. The General Quality Assessment (GQA) classification system measures both chemical and biological components, which are measured against the previous year and a baseline year of 1990. Figure 4 illustrates the proportion of the catchment which fell into each General Quality Assessment (GQA) classification for each of these years. It shows a substantial increase in the percentage of lengths which are "very good" and "good" graded (nearly 70% in 1999). It also shows a decrease the percentage of length in "fairly good", "fair", "poor" and "bad" grades. There is still a stretch of "bad "grade in 1999 (900m of Strings Watercourse) though it is less than in 1990 and is not visible on the graph.

Figure 4 : Bristol Avon LEAP– Percentage Length of watercourse by Chemical GQA Grade 1990, 1998 & 1999



Grade definitions

A – Very Good
B – Good
C – Fairly good
D – Fair
E – Poor
F – Bad

Trading Estates Campaign

Pollution from surface run-off is a particular problem in the Bristol Avon catchment due to the highly urbanised nature of the area. The trading estates campaign (Action 7.3.1) has been developed to address this issue by working with the tenants of trading estates towards environmental improvements. The Upper Avon Environmental Protection team usually aim to cover twenty five of the one hundred trading estates in the West Wiltshire

area every year. So far already this year thirty six estates have been visited which it is hoped will bring about a distinct improvement in the environmental performance of these sites.

Disappointments

Foot and Mouth Disease has led to severe restrictions to the work of the Agency this year. On site monitoring has been affected as well as a number of research projects. A number of actions have been directly affected namely, 4.1.4, 4.3.2, 5.1.1, 7.7.1, 7.7.3, 7.7.4 and 7.12.1.

Section 4 - Action Plan monitoring report

The following tables show the progress we have made on specific actions. The actions have been identified as:

N	New Action	**C**	Completed action
S	Started / ongoing action	**D**	Delayed / no action

Water Resources

The domestic water supply in this LEAP area is supplied by Bristol Water Company and Wessex Water Services Limited. Both companies supply water to the area using integrated networks of pipes and abstraction sources extending over large areas well beyond the LEAP area. These are known as "resource zones". The Bristol Avon LEAP area is part of the North Resource Zone which supplies water to most of Somerset and parts of Dorset.

The Office of Water Services is the body appointed by government as financial regulator of the water companies. They achieve this by carrying out periodic reviews setting down water company charges and how the money is to be spent. Expenditure on water company infrastructure serving the LEAP area is dependent upon this process.

As part of their submissions to the Office of Water Services, water companies were required to revise their demand forecasts, review their resource availability and consider potential options to meet any deficits within the planning horizon to 2010. In parallel with this, the Agency required water companies to submit water resources plans for the period to 2025. These were received by the Agency in March 1999 and considered to be acceptable. The companies now review and update the plans annually.

The final determination by the Office of Water Services of the Third Periodic Review did not provide funding for implementing the proposed single solution to the Malmesbury Avon site affected by abstractions operated by Wessex Water. Department for Environment Food and Rural Affairs have commenced a study into potentially affordable solutions. Wessex Water put forward to Department for Environment Food and Rural Affairs some actions that partially meet the requirements to restore sustainable abstraction. The Minister has now directed Wessex Water to urgently review with the Office of Water Services the costs of the water company proposals and to seek implementation of solutions at the earliest opportunity. The Agency has pledged its support to help progress solutions as rapidly as possible but advised that partial solutions might nevertheless fail to meet the restoring sustainable abstraction tests under post scheme appraisal. The Department for Environment Food and Rural Affairs has acknowledged this point.

Water Resources Strategy

The Environment Agency is the statutory body with a duty to secure the proper use of water resources in England and Wales. In accordance with this duty, we published a water resources strategy for the Agency's SouthWest Region in March 2001. It is one of a suite of eight regional strategies, plus the overall national strategy for England and Wales. The strategies look some 25 years ahead. The strategy considers the needs for water, both for the environment and for society, and examines the uncertainties about future water demand and its availability.

The strategy is part of a framework of integrated water resources planning carried out by the Agency and water users. Water companies play an important part in this framework, each having a published plan for the next 25 years that is kept under annual review. Our strategy sets a structure within which these plans can be refined, allowing them to meet the wider objectives of society. The strategy identifies demand management and water resource development options that are able to help ensure adequate supplies of water across all sectors and shows that we can manage water resources over the next 25 years in a way that will allow an improvement to present levels of environmental protection.

Catchment Abstraction Management Strategies (CAMS)

The Environment Agency is responsible for managing the licence system for water abstraction in England and Wales. In March 1999 following a consultation period the Government published *"Taking Water Responsibly"* which proposed changes to the water abstraction system. The most important change to come out of this document was a proposal for the introduction of Catchment Abstraction Management Strategies (CAMS). In April 2001 the Environment Agency published *"Managing Water Abstraction"* which sets out the context and purpose of CAMS.

The principal objectives of CAMS are:

- To make information about water availability and licensing readily available to the public.
- To balance the needs of the abstractors for a reasonable quantity of water with the needs of the environment.
- To increase the opportunities for public involvement in the management of abstraction at catchment level.
- To provide a management structure for time limited licenses.
- To introduce licence trading.

Sustainability appraisals will take place on each CAMS to ensure that the potential social, environmental and economic impacts of each strategy are assessed. Information gathered in the appraisal will also be used to classify the water level status of each catchment and therefore decide which units will have CAMS and what level of abstraction will take place.

Consultation is considered to be an important part of the CAMS process. Stakeholder groups will be selected to contribute to the sustainability appraisal and the early stages of CAMS development, from this a consultation document will be produced which all interested parties will have the opportunity to comment on before the strategy is finalised.

Issue 2.1: Securing future public water supplies

Action 2.1.1	Progress C
We will revise the Regional Water Resources Development Strategy based on information received in companies' water resources plans.	Our water resources strategy "Water resources for the future, a strategy for the South West Region" was launched in March 2001. It sets down how we can provide enough water for all human uses with an improved water environment for the period up to 2025.
Cost: 1k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Water Resources

Issue 2.2: The impact of water abstractions on river flows

Work to construct a gauging station, containing equipment to monitor river water levels and flows on the River Avon at Malmesbury, is due to begin in August 2001. The River Avon and its tributaries near Malmesbury has been the subject of detailed low flow investigations since 1990.

The new river level gauge will provide the Agency's water resources staff with a continuous record of river flow. This means a better early warning system for when levels drop to the point where it needs additional support. It will also provide an additional monitoring point for flood warning when river levels are high.

Wessex Water and Bristol Water are both working with the Agency to maintain target river flows by pumping water into the stream when necessary and altering existing abstraction arrangements.

Action 2.2.1	Progress S
We will continue our work to identify an environmentally acceptable flow regime at Great Somerford and evaluate how best to use increased stream support to balance the competing demands for water use, recreation and the environment.	Work is ongoing, with an ecological survey being done this year to assist with determining an ecological acceptable flow.
Cost: 15k	**Time scale:** 2000 - 2004
Action by: Agency, Institute of Freshwater Ecology (IFE)	**Contact:** Team Leader Water Resources

Action 2.2.2	Progress S
We will continue to examine the sustainability and relative benefits of increased stream support via field trials and various modelling techniques.	Work is ongoing.
Cost: 15k	**Time scale:** 2000- 2004
Action by: Agency.	**Contact:** Team Leader Water Resources

Action 2.2.3	Progress S
Public water supply licence conditions will be varied in agreement with the Wessex Water and Bristol Water.	Work is ongoing, awaiting outcome of Department for Environment, Food and Rural Affairs, study.
Cost: 0.5k	**Time scale:** 2000-2004
Action by: Agency, Bristol Water, Wessex Water.	**Contact:** Team Leader Water Resources

Action 2.2.4	Progress D
We will consult with relevant parties for the restoration of Daniel's Well Leat.	Work to minimise leakage from the Leat will be done, if required, during the summer by the Agency. No action has been taken to date on consultation for further restoration.
Cost: 2k	**Time scale:** 2000 - 2001
Action by: Agency.	**Contact:** Team Leader Water Resources

Action 2.2.5	Progress S
We will continue to implement the findings of the consultant's report for the By Brook.	We have undertaken an extensive investigation into the state of the By Brook catchment, which has included groundwater and surface water monitoring, fish, biological, and ecological surveys, and monitoring of the water quality. Communications with Friends of the By Brook have been maintained. The draft findings of our three year study were presented to Friends Of The By Valley in April 2001. The report on the study will be completed in early Autumn 2001.
Cost: 40k	**Time scale:** 2001
Action by: Agency, Friends of the By Brook.	**Contact:** Team Leader Water Resources

Action 2.2.6	Progress S
We will investigate perceived low flow issues in the River Marden. The investigations are identified for completion by 2004.	The Agency is negotiating with Wessex Water. River corridor and river habitat surveys are required to establish the ecological status of the river above Calstone.
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency, Wessex Water.	**Contact:** Area Water Resources Team Leader

New Action 2.2.7	Progress S
We will investigate perceived low flow issues in the St. Catherine's Brook. The investigations are identified for completion by 2004.	The Agency is negotiating with Wessex Water. River corridor and river habitat surveys are required to establish the ecological status of the river.
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency, Wessex Water	**Contact:** Area Water Resources Team Leader

Action 2.2.8	Progress S
We will investigate perceived low flow issues in the Chalfield Brook. The investigations are identified for completion by 2004.	The Agency is negotiating with Wessex Water. The Agency has reviewed the available data relating to Chalfield Brook and investigations are continuing.
Cost: 20k	**Time scale:** 2000-2004
Action by: Agency, Wessex Water	**Contact:** Area Water Resources Team Leader

Action 2.2.9	Progress S
We will investigate perceived low flow issues in the Luccombe Springs. The investigations are identified for completion by 2004.	The Agency is negotiating with Wessex Water. Fieldwork has been undertaken and investigations are continuing.
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency, Wessex Water	**Contact:** Area Water Resources Team Leader

Issue 2.3 The impact of quarrying on water resources

Action 2.3.1	Progress
We will continue to monitor the Bath Hot Springs and water levels in the Mendips and other limestone aquifers, analyse the information, and thereby keep a check on their state of health.	The Bath Hot Springs System has been, and continues to be, in a state of flux since the construction of the Hetling borehole. A planned pumping test will also upset the local equilibrium. We are required to be extra vigilant at this time. BANES' updated monitoring system should help.
Cost: 25k	**Time scale:** 2000-2002
Action by: Agency, Somerset County Council, local authorities, quarry producers	**Contact:** Regional Water Resources

Action 2.3.2	Progress
We will continue to act on a range of fronts to combat possible threats to the Brinsham Stream. We will monitor the extensive network of observation boreholes and stream gaugings will be interpreted so that any impacts can be determined as soon as possible.	Monitoring is continuing and so far no potential threats to Brinsham Stream have materialised and no impacts have been identified.
Cost: 2.5k	**Time scale:** 2000-2002
Action by: Agency,	**Contact:** Regional Water Resources

Action 2.3.3	Progress
We will continue our extensive involvement in the Mineral Planning process to secure environmental protection. We will use the Local Agenda 21 initiative as a vehicle for carrying the Agency's message to local stakeholders.	The Agency formed part of the steering group that helped to shape the draft Minerals Local Plan for Somerset County. This ensured our voice was heard and our concerns were acted upon from the outset of the process. We continue to liaise with members of the public with the aim of ensuring the impacts of quarrying on the local environment are understood and that people feel assured by our attention to the issues.
Cost: 10k	**Time scale:** 2000-2002
Action by: Agency, Somerset County Council, quarry operators, Wiltshire County Council, Mineral Planning Authorities	**Contact:** Regional Water Resources

Action 2.3.4	Progress S
We will continue to use the planning control process to secure maximum environmental protection and enhancement and limit the harmful effect of quarry working in the catchment.	We have been greatly involved in the new S106 agreement for Foster Yeomans operation at Tor Works near Frome. The results are improved forms of stream support, a better understanding of the local aquifer and more assured supply of compensation release water. We are currently working with Hanson's at Whatley Quarry sorting out the detail of the actions required by the S106 agreement since the new planning permission was enacted. This relates mainly to the River Mells at Wadbury and the issue of a discharge consent. At Halecombe Quarry, with Tarmac, we have agreed refinements to the S106 agreement. We have agreed the means of supporting Soho Spring and are working with Somerset County Council and Tarmac on various issues relating to the new planning application pending. We are supporting a new research project being undertaken by Bath Spa University on Mendip. The aim is to get a better understanding of the factors controlling Tufa deposition (calcareous deposits from springs which mainly occur in limestone regions).
Cost: 10k	**Time scale:** 2000-2002
Action by: Agency, Somerset County Council, quarry operators, Wiltshire County Council Mineral Planning Authorities.	**Contact:** Regional Water Resources

Issue 2.5: The impact of turbine and sluice operation at Worton Mill

Action 2.5.1	Progress S. Unfunded Priority 2
We will continue with the study to identify the causes of the problems and negotiate a solution if mill operations are detrimental.	The study showed that there were no upstream abstraction problems. Operation of the turbine at the mill needs careful monitoring of levels. The mill owner has automated his gate, and sold the mill. Contact has been made with the new owner who is keen to understand the operation of the sluice and turbine. The situation will be monitored during future low flows.
Cost: 2k	**Time scale:** 2000
Action by: Agency	**Contact:** Water Resources Licensing Team Leader

3. Fisheries

The lower to middle reaches of the Bristol Avon and its tributaries hold good stocks of coarse fish with the middle to upper reaches supporting good numbers of Brown Trout. Salmon and Sea Trout have been found to enter the lower reaches of the river as far up as Keynsham.

We have successfully reintroduced native crayfish to sections of the Sherston and Tetbury Avon. We are trapping and recording the distribution of existing populations in the North Wessex Area and need to complete this before we target further sites for reintroduction.

In 1999 a review of policy and legislation applying or relevant to salmon and freshwater fisheries was carried out by an independent review group on behalf of Ministers. The group was asked to make recommendations. Naturally the Environment Agency, which itself gave evidence has awaited with great interest the output. The group made a total of195 recommendations and the Ministry of Agriculture, Fisheries and Food published the 'Salmon and Freshwater Fisheries Review' in 2000. This review then went out to public consultation. Many of the recommendations for change would need changes in legislation. The Government have now debated the review and published their response in January 2001. This review and any future changes as a result of it will be very relevant to the work of the Agency's Fisheries function.

We continue to protect the local fisheries in the Avon catchment through enforcement of fisheries laws and the screening of consents and permissions within the planning and development control process. A public consultation occurred in 2000 on the Agency's 'Draft National Eel Management Strategy' and on the 'Draft Eel Net Licensing System, Duties and Byelaws'. Confirmation of proposals should occur in 2001.

The rivers and streams within this catchment are currently surveyed for their fish populations within a five-year rolling programme. A new national monitoring programme has now been formulated for the future whereby some rivers will be surveyed annually and others every five years, depending on the purpose of the survey.

Issue 3.1: The need for fish passes at major obstructions

Action 3.1.1	**Progress: Unfunded – Priority 2**
We will seek funding and opportunities to provide fish passes at impassable weirs causing obstruction to migrating fish.	There is no funding currently available for fish passes. We however look to secure improvements through the planning and development control process as well as identifying funds on an opportunistic basis. Nationally we have contributed to a 'master list' of major weir obstructions which after national prioritisation may form the basis of a bid for European funds, should the opportunity arise. Obstructions within the Bristol Avon catchment along with others elsewhere in North Wessex have been submitted. To date a European funding bid has not been made.
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Fisheries

Action 3.1.2	Progress S
We will carry out a feasibility study to find out if the impassable weir on the River Boyd at Bitton can be replaced/modified to form a series of passable stepped weirs.	The weir at Bitton is totally impassable to fish populations, though fish populations exist both upstream and downstream. The improvement feasibility study and report was completed in 2000. The report has been circulated for technical appraisal within North Wessex. Some reservations have been raised and the next stage is to carry out some hydraulic modelling. Ultimately any proposals will be subject to the securing of suitable funding.
Cost: 6k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Fisheries

Issue 3.2: The possible impact of low flows on fishing in the Upper Avon

Action 3.2.1	Progress S. Unfunded Priority 1
We (together with the Institute of Freshwater Ecology) will complete an angling survey to help set minimum environmentally acceptable flows at Great Somerford.	The work that was carried out looked at several techniques to try and relate 'angling quality' to river flow. The results appear provisionally to show a relationship between the two. More work will be done through 2001 to review video footage with a panel of local anglers and collect extra data from low flows to verify any relationship. Ultimately this area of work will be used with other data to help set environmentally acceptable flow criteria for the river.
Cost: 2k	**Time scale:** 2000-2001
Action by: Agency, Institute of Freshwater Ecology	**Contact:** Team Leader Fisheries

4. Biodiversity

Biodiversity, the variety of life on earth, is being lost. Biological diversity is a key indicator of sustainable development. In the United Kingdom alone over a hundred species were lost in the last century.

The United Kingdom Government signed the Biodiversity Convention at the 1992 Rio Earth Summit. This committed the United Kingdom to playing its part in halting and reversing the decline in numbers of species and areas of key habitats. The United Kingdom Biodiversity Action Plan lists habitats and species which require conservation action, through Regional and Local Biodiversity Action Plans. *The Regional Biodiversity Audit Plan for the South West* was published in April 1996 and was followed by *Action for Biodiversity in the SouthWest* in June 1997 – a series of habitat and species plans to guide delivery.

Over the next five to ten years, we will work with a number of organisations that are formulating and implementing habitat and species actions at both regional and local levels. These include:

- Mendip District Council
- South Gloucestershire Council

- Bath and North East Somerset Council
- Bristol City Council
- Wiltshire Wildlife Trust (in partnership with Wiltshire County Council, West Wiltshire and North Wiltshire County Council)
- Avon Wildlife Trust

In addition British Waterways are developing their own local Biodiversity Action Plan for the Kennet and Avon Canal.

Small populations of native crayfish are known to occur in some of the Avon tributaries but are under threat from the spread of crayfish plague carried by non-native signal crayfish. Water vole, which are in serious decline across the UK, are also found in some of the upper tributaries. There is evidence of otter in parts of the catchment, suggesting that the River Avon may in the future be an important corridor for their movement and colonisation of the area. The nationally rare Loddon pondweed occurs in the River Avon below Bradford-on-Avon. Two nationally rare species of dragonfly, the white-legged damselfly and scarce chaser, have also been recorded.

Issue 4.1: Maintaining and enhancing biodiversity

Action 4.1.1	**Progress D**
We will implement a five-year plan of priority sites for restoration.	At present we have no funds available to progress restoration of any of the priority sites.
Cost: -k p.a	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Conservation

Action 4.1.2	Progress S
We will implement SW Regional Biodiversity Action Plans (BAPs) for Rivers and Streams by working with others to maintain and restore the quality and biodiversity of rivers and streams.	As well as the South West Regional BAP, we are involved with Bristol City's BAP, Wiltshire BAP, Bath & North East Somerset (BANES) BAP and the forthcoming Avon BAP. Bristol have produced a Water Vole Action plan, to which we contributed. We are attending progress meetings on a regular basis to ensure we continue to be involved in the process. Wiltshire have produced a draft BAP which we have commented on and we have also been involved in the selection of biodiversity indicators in Wiltshire. In BANES we sit on the steering group for the BAP and have contributed to the selection of key habitats and species for the area. Sub-groups for various topic headings in the BAP will be formed to progress actions and an action plan is to be produced. The Avon BAP is still being formulated at present, though the Agency will be involved in promoting aquatic habitats and the species which we are contact for under the UK BAP.
Cost: 15k	**Time scale:** 2000-2004
Action by: Agency, BANES, Bristol City Council Wiltshire County Council, Mendip District Council, Farming and Wildlife Advisory Group (FWAG), Wiltshire Wildlife Trust and English Nature	**Contact:** Team Leader Conservation

Action 4.1.3	Progress S Unfunded Priority 1
Otters: We will provide suitable conditions, where appropriate, to enable natural colonisation of the catchment.	Otters seem to be spreading within the catchment area and there are lots of opportunities with our partnership work with the wildlife trusts and Avon Valley Partnership to create holts (otter homes) and carry out general habitat work to encourage otters. We are still keen for reports of sightings and dead otters to give us a clearer picture of their current range within the catchment.
Cost: 2k	**Time scale:** 2000-2004
Action by: Agency, Wildlife Trusts, riparian owners, FWAG	**Contact:** Team Leader Conservation

Action 4.1.4	Progress S
Water voles: We will increase knowledge of distribution and abundance, and work in partnership with others to provide habitat enhancements.	This year we hope to follow the success of last years Community training days with the Avon Valley Partnership, and hold a Riparian Mammals training day which will look at how to tell otters, water vole and mink are present. We have also given the Avon Wildlife Trust some money for a survey of the Feltham Brook. Some of this work has been delayed with Foot and Mouth, but a training day will be held later in the summer.
Cost: 1k	**Time scale:** 2000-2002
Action by: Agency, Wildlife Trusts, riparian owners, FWAG	**Contact:** Team Leader Conservation

Action 4.1.5	Progress D: Unfunded – Priority 1
Coastal and floodplain grazing marsh: We will seek opportunities to restore functional flood plains and wetlands in co-operation with riparian owners and wildlife trusts.	We need to establish where the possible resource is before we can target areas for creation of this habitat. A similar exercise has been carried out in North Somerset. Once areas have been identified it will be dependent on landowners and funding as to whether we can actually increase the amount of this habitat in the catchment.
Cost: 5k	**Time scale:** 2000-2004
Action by: Agency, Somerset Environmental Records Centre (SERC), FWAG, Wildlife Trusts	**Contact:** Team Leader Conservation

Action 4.1.6	Progress D: Unfunded – Priority 1
Tufa depositing springs: A survey has been completed to assess value of this habitat. The results of this will be used to develop a conservation strategy, particularly in the Mells Valley.	Somerset Environmental Records Centre (SERC) have completed the survey and have written the report. We are waiting for a copy of the latter. Until we have the report, there will be no further action.
Cost: 5k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Conservation

Action 4.1.7	Progress S: Unfunded – Priority 2
Headwater Streams: We will target headwater surveys towards chalk streams.	Some head waters sampled as part of General Quality Assessment 2000 survey. Will continue to monitor headwaters likely to be at significant risk (but resource dependent), in association with other monitoring programmes.
Cost: 5-10k	**Time scale:** 2000-2004
Action by: Agency, Wiltshire Wildlife Trusts	**Contact:** Team Leader Biology

Action 4.1.8	Progress S. Unfunded – Priority 2
Locally important species (Lodden pondweed, river water dropwort, white water lily, scarce chaser dragonfly and water crowfoot): We will establish distribution within the catchment by undertaking River Corridor Surveys (RCS).	These are part complete, but lower reaches still require work.
Cost: 4k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Conservation

Issue 4.2: The need for extra protection for key designated European nature conservation sites

Action 4.2.1	Progress S
Review all authorisations and actions as required by the Habitats Regulations.	Stage 1 of the review (listing permissions relevant to the sites) is under way, and implementation of stage 2 (assessing whether permissions are likely to significantly affect the sites) is being planned.
Cost: 5k (across North Wessex area)	**Time scale:** 2000 - 2004
Action by: Agency	**Contact:** Team Leader Conservation

Issue 4.3: The conservation of the native crayfish

Action 4.3.1	Progress C
We will map and monitor all known populations of crayfish.	We have established a database of known sites with crayfish and are continually updating this when new records come in.
Cost: 2k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Conservation

Action 4.3.2	Progress D. Unfunded – Priority 2
Native crayfish: We will assess the results of the survey on native populations and the spread of signal crayfish particularly within the Sherston Avon, Chew and By Brook catchments to formulate a conservation strategy.	No survey was undertaken on the Sherston Avon this year because of Foot and Mouth. The last survey undertaken in 1999 showed no immediate signs that the population was recovering from the synthetic pyrethroid pollution which nearly wiped it out. In the By Brook catchment, we are hoping to get a student to undertake survey work of the Broadmead Brook which will look at the native and signal crayfish populations and how they are interacting.
Cost: 5k	**Time scale:** 2000 - 2004
Action by: Agency, Wiltshire Wildlife Trust	**Contact:** Team Leader Conservation

Action 4.3.3	Progress S. Unfunded – Priority 2
We will identify further suitable sites for reintroduction of the native crayfish.	A possible introduction site has been found on the River Marden although this is subject to water quality issues.
Cost: 2k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Conservation

Action 4.3.4	Progress S
We will liaise nationally to establish the extent of the threat of the increasing use of synthetic pyrethroids to native crayfish and other invertebrates.	Although there has not been any formal liaison, the issue Is being discussed through informal networking.
Cost: 10k	**Time scale:** 2000 - 2001
Action by: Agency	**Contact:** Team Leader Environmental Protection – Upper Avon

5. Conserving the land

As part of regular farm visits we offer advice on best practice concerning agricultural drainage which, if not managed correctly, can cause or contribute to a number of problems including localised flooding. For more information please see our publication about silt pollution (Appendix 11.3).

Issue 5.1: The impact of new development on drainage

Action 5.1.1	Progress S
We will produce hydraulic models for identifying definitive floodplains for some local authority identified reaches for 1998/99.	All Local Authorities in Bristol Avon Leap area have had their hydraulic model studies (SIOSB) completed and delivered, apart from Bath and North East Somerset and Bristol City Council, who should get their deliverables summer 2001. No further direct actions anticipated as a result of deliverables. A new contract to re-model the Bristol Frome in South Gloucestershire Council has been let for 2001 No other contracts are scheduled for 2001.
Cost: 75k	**Time scale:** 2000 - 2001
Action by: Agency	**Contact:** Team Leader Development Control

Action 5.1.1 has been changed and now reads:

Action 5.1.1	Progress S
We will continue to produce hydraulic models on a priority basis to improve our flood plain mapping for the Bristol Avon catchment.	Some slippage has occurred due to the winter floods of 2000/01, and the Foot and Mouth crisis, but an annual programme of £70k is still the target.
Cost: 70k	**Time scale:** At least 2003, then to be reviewed.
Action by: Agency	**Contact:** Team Leader Flood Defence Strategic Planning

Action 5.1.2	Progress S
We will liaise with planning and highway authorities, consultants and contractors to ensure protection for the water environment before, during and after construction of developments.	This is taking place and will continue, bringing best practice and new policies into effect when appropriate. For example Sustainable Urban Drainage Systems for surface water drainage, which is heavily promoted by South Gloucestershire.
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency, local authorities, Highways Agency	**Contact:** Team Leader Development Control

Action 5.1.3	Progress S
We will liaise with the local planning authorities to ensure that appropriate policies are included in their Development Plans.	Liaison is taking place by correspondence, telephone and meetings. Meetings are infrequent and depend on what stage a development plan is at.
Cost: 20k	**Time scale:** 2000-2001
Action by: Agency, local authorities	**Contact:** Team Leader Planning Liaison

Issue 5.2 Soil erosion

Action 5.2.1	Progress S
We will contribute to research into the effects of land-use change on groundwater quality.	The report on this research will be completed in summer 2001.
Cost: 1k	**Time scale:** 2000 - 2001
Action by: Agency, Bristol Water	**Contact:** Team Leader Water Resources

Issue 5.3 Nitrate pollution

Action 5.3.1	Progress S
We will implement and enforce the Government Action Plan for agricultural nitrate limitation in the Egford Nitrate Vulnerable Zone.	A planned programme of site visits is underway to ensure that farmers are aware of their responsibilities and duties.
Cost: 20k	**Time scale:** 2000 - 2004
Action by: Agency	**Contact:** Team Leader Environment Protection

Action 5.3.2	Progress C
We will contribute to the four-yearly review process.	The 2001 review will introduce a new methodology for determination of Nitrate Vulnerable Zones. Whilst the development and application of the new methodology is largely the role of the Agency, actual implementation of the review outcome is the responsibility of DEFRA.
Cost: 10k	**Time scale:** 2001
Action by: Agency	**Contact:** Principal Regional Groundwater Protection

6. Waste

The Waste Strategy 2000 continues many of the principles of its predecessor 'Making Waste Work'. The overarching principle is that decisions regarding waste management should be consistent with the Best Practicable Environmental Option (BPEO). The Best Practicable Environmental Option considers the protection and preservation of the environment in the long and short terms and is likely to be different for each waste stream in each location.

The 'proximity principle' advocates that waste should be managed as close to the area of production as possible. This is sometimes considered to be the link between the Waste Hierarchy and the Best Practicable Environmental Option. Where the Best Practicable Environmental Option for a particular waste stream is towards the lower end of the Hierarchy, this could be due to any environmental impact of transporting waste to a more distant facility.

The Waste Strategy contains statutory targets for the recycling of household waste by local authorities: 25% by 2005, 30% by 2010 and 33% by 2015. An aspirational target to reduce landfilling of commercial and industrial waste to 85% of 1998 levels is also presented. The strategy also identifies the roles of interested parties in achieving these targets and includes Local Authorities, industry, non-government or community organisations and the Environment Agency. We are a member of the Environment Business Consortium, which works in partnership to deliver sustainable environmental improvement in local businesses. In particular the minimisation of waste.

The Producer Responsibility Obligations (Packaging Waste) Regulations place an obligation to recycle and recover certain amounts of packaging on those companies that supply more than 50 tonnes of packaging per annum and also have an annual turnover greater than £2 million. Proof of recycling and recovery is required by the Agency and can be provided by an Accredited Reprocessor (a company that voluntarily registered with the Agency and has had the process of packaging recycling and recovery checked by the Agency). Producer Responsibility will be extended in the next few years to include end of life vehicles, waste electrical and electronic equipment and batteries. The Waste Strategy includes the possibility of including junk mail.

As a requirement of Waste Management Licence conditions we receive data from site operators relating to the amount of waste each site has managed in a set period, usually quarterly. This data is amalgamated to provide statistics on how much waste is being managed at licensed sites within a particular area, district or country. This data, combined with data from the National Waste Production Survey, can then be used for planning purposes. In particular it can be used in the production of the Agency's own Strategic Waste Management Assessments (SWMA). These advise regional planning functions such as Regional Technical Advisory Bodies, and advise local authorities about the provision of land and resources for waste management, particularly regarding Waste Local Plans, but also other plans which include waste as a factor. The Agency's SouthWest Region Strategic Waste Management Assessment was published at the end of 2000.

Waste Local Plans are prepared by the Waste Planning Authority. These Authorities are Bristol City Council, South Gloucestershire Council, North Somerset Council, Bath and NorthEast Somerset Council and Wiltshire County Council. The Waste Local Plan sets out the proposals for managing the waste in the authority and policies by which other proposals will be judged. The Waste Local Plan is required to take into account relevant local, regional and national policy. This includes, for example, the National Waste

Strategy, Planning Policy Guidance Note 10 (both prepared by Government) and Regional Planning Guidance as prepared by the Regional Assembly.

Currently of the Waste Planning Authorities, South Gloucestershire has placed a Revised Minerals and Waste Local Plan on Deposit and is awaiting the result of a recent Public Local Inquiry into that Plan. BANES are going to include a chapter on waste management in their forthcoming Unitary Development Plan, due in late 2001. North Somerset has also placed a Revised Waste Local Plan on Deposit and awaits the Inspectors Report from an Inquiry. Wiltshire is expected to release a First Deposit Draft of their Waste Local Plan during 2001, having an Issues and Options document in November 1999.

Issue 6.1: Reduce landfilling of commercial and industrial wastes

Action 6.1.1	**Progress S: Unfunded – Priority 2**
We will promote waste minimisation partnerships as appropriate.	We are working with the non-governmental organisations Western Partnership for Sustainable Development, and Envolve, amongst others, to promote waste minimisation and the efficient use of natural resources through an Environment Consortium. The partners meet regularly to ensure the most effective service is delivered to businesses across the Bath and Bristol conurbation.
Cost: 1k p.a	**Time scale:** 2000-2004
Action by: Agency, WPSD, Envolve	**Contact:** Team Leader Tactical Planning

Issue 6.2: The need for a better informed and integrated Agency view on waste management

Action 6.2.1	**Progress C**
Contribute to strategic waste planning by producing a Strategic Waste Management Assessment covering the South West Regional Planning Conference Area.	The Strategic Waste Management Assessment was produced in October 2000 and can be used to inform regional and local authority waste management planning and development. Updates will be produced annually to assess progress against the Governments national strategy and targets.
Cost: 4k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Tactical Planning

Issue 6.3: The need to review waste management facility licences

Action 6.3.1	Progress S
We will review 18 waste management facility licences and identify sites requiring improvement to licence conditions.	Overall the review has been a success. The complexity of the cases and potential for impact has been greater than first thought resulting in a longer more involved process. By modernising these licences inherited from the former Local Authority Waste Regulation Authorities the level of environmental protection at these sites has been significantly improved. In some cases this has resulted in infrastructural improvements and in at least one case, the permanent cessation of operations. Of the eighteen cases only two remain outstanding. One relates to a complex chemical waste transfer station. This review has now been completed and we anticipate issuing the modified licence in the coming month. The other case has been treated as lower priority due to the nature of the site and the availability of Agency resources. We anticipate completion of this remaining case by the end of 2001. The Landfill Directive is likely to result in a major national review of landfill sites as new European standards are introduced. Further reviews by the Agency will not happen until this has taken place.
Cost: 5k	**Time scale:** 2001-2002
Action by: Agency	**Contact:** Team Leader Waste Licensing

Issue 6.4: Fly Tipping

Action 6.4.1	Progress S
We will encourage Wiltshire County Council to provide more Household Re-cycling Centres through their contractor (Hills).	The station Stanton St.Quentin CIA site is now licensed and operational. We have also recently received an application for a new site at Melksham.
Cost: 5k	**Time scale:** 2001-2002
Action by: Agency	**Contact:** Team Leader Waste Licensing

7. Integrated River-basin Management

Integrated river basin management is a way of looking at the river and its surrounding land as a whole. It not only looks at the quality and quantity of water in the river but also at its physical environment including landscape, recreational use, flood control works, wildlife in the river and its corridor.

There is major public water supply abstraction of groundwater in the Malmesbury area and of surface water lower down the catchment. We must maintain good water quality to protect this valuable resource. We monitor 674.2 km of rivers and canal in the Bristol Avon catchment. Chemical water quality is measured annually and biological quality is measured every five years.

Issue 7.1: The impact of sewage treatment works (STW) on water quality

Water Quality
A number of Wessex Water sewage discharges are known to cause or contribute to the exceedence of water quality targets. These discharges will be improved through the their investment programme.

The Water Companies' investment programme for the period 2000-2005 is known as Asset Management Plan 3 (AMP3). AMP3 has been developed along guidelines agreed between the Environment Agency, the Department for Environment, Food and Rural Affairs, Wessex Water and the Office of Water Services (OFWAT).

The Environment Agency has agreed with the Department for Environment, Food and Rural Affairs which sewage discharges require improvement during AMP3. The Office of Water Services has now completed a review of water prices which allows for this programme of environmental investment and enables the companies to make the environmental improvements by 2005. AMP3 is well underway and planned improvements under Asset Management Plan 4 (AMP4) which will take place in 2005-2010, are currently being considered.

Action 7.1.1	**Progress S**
We expect improvements to Urchfont Sewage Treatment Works to be carried out in AMP3 to protect downstream water quality	Currently at scheme appraisal stage on target for 2002 completion
Cost: 0k	**Time scale:** 2000-2002
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.2	**Progress C**
We expect improvements to Priston Sewage Treatment Works to be carried out in AMP3 to improve downstream water quality.	Completed March 2001. They involve improved secondary treatment, including a reed bed, to ensure river quality objectives are met.
Cost: 0k	**Time scale:** 2000-2005
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.3	**Progress S**
We expect improvements to Hillmarton Sewage Treatment Works to be carried out in AMP3 to improve downstream water quality.	Currently at planning stage on target for 2004 completion.
Cost: 0k	**Time scale:** 2000-2004
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.4	**Progress S**
We expect improvements to Westbury Sewage Treatment Work to be carried out in AMP3 to protect downstream water quality. In addition phosphate reduction may be required under the Urban Waste Water Treatment Directive as a result of the designation of the Bristol Avon as a Sensitive Area (Eutrophic).	Currently at appraisal stage on target for 2004 completion.
Cost: 0k	**Time scale:** 2000 - 2004
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.5	Progress S
We expect improvements to Devizes Sewage Treatment Works to be carried out under AMP3. In addition phosphate reduction may be required under the Urban Waste Water Treatment Directive as a result of the designation of the Bristol Avon as a Sensitive Area (Eutrophic).	Currently at appraisal stage on target for 2004 completion.
Cost: 0k	**Time scale:** 2000-2004
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.6	Progress S
We expect improvements to Marshfield Sewage Treatment Waste to be carried out in AMP3 to improve downstream water quality. In addition improvements to storm tanks are required.	Currently at appraisal stage on target for 2004 completion.
Cost: 0k	**Time scale:** 2000-2004
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.7	Progress S
We will undertake a desktop study and if necessary seek improvements to Compton Bassett Sewage Treatment Waste.	Part of ongoing assessment by Tactical Planning of potential AMP4 schemes.
Cost: 0k	**Time scale:** 2000-2005
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.8	Progress S
We will undertake a desk study. If necessary we will seek improvements to Stratton-on-the-Fosse Sewage Treatment Works.	See action 7.1.7
Cost: 0k	**Time scale:** 2000-2005
Action by: Agency	**Contact:** Team Leader Tactical Planning

Action 7.1.9	Progress S
Leigh-on-Mendip Sewage Treatment Works: We will undertake a desk study. If necessary we will seek improvements.	See action 7.1.7. Some data analysis and modelling is taking place.
Cost: 0k	**Time scale:** 2000-2005
Action by: Agency	**Contact:** Team Leader Tactical Planning

Action 7.1.10	Progress C
We expect improvements to Hullavington Sewage Treatment Works to be carried out in AMP3 to protect downstream water quality.	Completed March 2001
Cost: 0k	**Time scale:** 2000-2005
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.11	Progress S
We expect improvements to Frome STW to be carried out in AMP3 to protect downstream water quality. In addition phosphate reduction may be required under the Urban Waste Water Treatment Directive as a result of the designation of the Bristol Avon as a Sensitive Area (Eutrophic).	Currently at planning stage on target for 2004 completion. Phosphate reduction has been required, action has been taken by Wessex Water.
Cost: 0k	**Time scale:** 2000-2004
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.12	Progress C
We expect improvements to Lavington Sewage Treatment Works to be carried out in AMP3 to protect downstream water quality.	Completed March 2001, improvements include superior secondary treatment and tighter effluent consent, to ensure river quality objectives are met.
Cost: 0k	**Time scale:** 2000-2005
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.13	Progress S
We expect improvements to Malmesbury Sewage Treatment Works to be carried out in AMP3 to protect downstream water quality.	At planning stage on target for 2005 completion.
Cost: 0k	**Time scale:** 2000-2005
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.1.14	Progress C
We expect improvements to Rowde Sewage Treatment Works to be carried out in AMP3 to protect downstream water quality. In addition, improvements to storm tanks are required.	Completed March 2001.Improvements include superior secondary treatment, tighter effluent consent and increased treatment capacity as required under the Urban Waste Water Treatment Directive and to ensure river quality objectives are met. There have also been improvements to storm overflows at the works.
Cost: 0k	**Time scale:** 2000-2005
Action by: Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Issue 7.2 The impact of RAF Lyneham on water quality

Action 7.2.1	Progress S
We will ensure that discharges from the Lyneham sewerage system are investigated and dealt with appropriately.	Wessex Water took over operation of the sewage works in 1998 and have since greatly improved water quality by introducing a new sewerage system, two thirds of the pumping stations have been upgraded by Wessex Water.
Cost: 1k	**Time scale:** 2000-2002
Action by: Agency	**Contact:** Team Leader Environment Protection

Action 7.2.2	Progress S:
We will monitor surface water discharges from RAF Lyneham and continue to negotiate with the RAF to secure long-term improvements.	Monitoring is ongoing, partly funded by the RAF, possible solutions have been discussed and communication is continuing. The area in which de-icing takes place has been reduced to minimise surface water pollution.
Cost: 1k	**Time scale:** 2000-2002
Action by: Agency	**Contact:** Team Leader Environmental Protection

Issue 7.3: The impact of urbanisation on water quality

Action 7.3.1	Progress S: Unfunded – Priority 2
We will carry out trading estate pollution control campaigns to reduce drainage related pollution problems.	So far this year 36 trading estates in West Wiltshire have been visited. The campaigns have taken the form of pre-arranged and ad-hoc visits to discuss pollution prevention measures. The main aims are to raise awareness of pollution prevention and to reach agreements with the companies involved to carry out work. The focus has been on getting rid of one-off incidents. For more information on this action please see Section 3 page 10.
Cost: 12.5k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Environment Protection (Grtr Bristol, Mid Avon and Upper Avon)

Issue 7.4: Unknown causes of degraded water quality

Action 7.4.1	Progress S: Unfunded – Priority 2
Investigate cause of River Quality Objective failure on the By Brook, Brinkworth Brook, Hancocks Water, Somerset Frome, Avon, Boyd, Gauze Brook, Charlton Stream, Tetbury Avon, Luckington Brook, Salters Brook, Rodbourne Brook, Broadmead Brook, Worton Stream, Maiden Bradley Brook.	The Brinkworth Brook, Avon, Luckington Brook, Salters Brook, Rodbourne Brook and Maiden Bradley Brook are now compliant with River Quality Objectives (RQO's) and therefore no further action is planned. Following the results of a desk top review, further field investigations are planned or underway for the following, Hancocks Water, Somerset Frome, Boyd, Gauze Brook, Worton Stream and the Tetbury Avon. A review of the effects of Colerne Sewage Treatment Works on the By Brook will take place and farm visits are planned to address Charlton Stream RQO failure.
Cost: 10k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Environment Protection (Grtr Bristol, Mid Avon and Upper Avon)

Issue 7.5: The impact of low flows on water quality

Action 7.5.1	Progress S: Unfunded - Priority 2
We will investigate River Quality Objective non-compliances that appear to be related to low flows, and develop plans appropriate to each case.	Please see action 7.4.1
Cost: 5k	**Time scale:** 2000-2002
Action by: Agency	**Contact:** Team Leader Environment Protection

Issue 7.6: The impact of sewerage and unsewered areas

Action 7.6.1	Progress C
We will carry out surveys at Beanacre to determine effect of septic tank discharges on the watercourse.	Completed early. Two properties had direct discharges, action was taken in conjunction with Environmental Health.
Cost: 2.4k	Time scale: 2000
Action by: Agency	**Contact:** Team Leader Environmental Protection

Action 7.6.2	Progress S: Unfunded - Priority 1
We will continue to participate in Operation Streamclean, funding for which has been secured until March 2000. Success of funding bids determines the amount of work done each year.	Funding is determined by the three partner organisations, Bristol City Council, Wessex Water and the Agency, on a year by year basis, but has been secured until March 2002. Work has been continuing at a number of priority outfalls and started at new ones in South Bristol [Headley Park on the Malago and Knowle on the Brislington Brook]. Since 1992 Operation Streamclean has identified 520 properties and 1,200 individual appliances illegally discharging foul sewage to watercourses in Bristol.
Cost: 40k	**Time scale:** 2000- 2002
Action by: Agency, Wessex Water, Bristol City Council	**Contact:** Team Leader Investigations

Action 7.6.3	Progress S
We will liaise with Wessex Water and relevant organisations to secure necessary improvements to the sewerage infrastructure in the Bath area and Bristol Frome catchment.	In Bath there has been frequent liaison between Wessex Water design engineers and Agency liaison officer to discuss the options. Wessex Water have committed up to £25 million in AMP3 for Bath sewerage and are working to a five year programme of evaluation, design and building which is currently on track. Improvements have been made to the Frome Valley sewer at Frampton Cotterell. These include closing down one Combined Sewer Overflow (CSO), improving and screening another one, and improving the operation of the tank sewer used for evening out storm surges. Possible further improvements are being discussed with Wessex Water, which would be undertaken under AMP 4. Further down the Frome, in the Fishponds Brook catchment, sewage infrastructure improvements have been completed under AMP 3. These include the closure of eight CSO's and the improvement of a further eight unsatisfactory CSO's, including the provision of storm surge storage capacity.
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency, Wessex Water	**Contact:** Team Leader Environment Protection

Issue 7.7: The impact of agriculture on water quality

Action 7.7.1	Progress S: Unfunded = Priority 2
We will carry out a campaign of farm visits on the Cowage Brook to inspect effluent disposal facilities and to encourage best practice.	Planning stage completed, few or no visits due to Foot and Mouth Disease.
Cost: 6k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Environment Protection

Action 7.7.2	Progress D: Unfunded = Priority 2
We will investigate the role of agricultural sources in the failure to comply with River Quality Objectives in the following sub-catchments: Nunney Brook and Broadmead Brook.	No progress, current level of resourcing prevents any pro-active work being undertaken. No immediate prospect of restarting.
Cost: 8k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Environment Protection

Action 7.7.3	Progress S: Unfunded – Priority 2
We will investigate the role of agricultural sources in the failure to comply with Long Term River Quality Objectives in the Rivers Brook.	Some visits have taken place but there have been delays due to Foot and Mouth disease.
Cost: 5.7k	**Time scale:** 2001
Action by: Agency	**Contact:** Team Leader Environment Protection

Action 7.7.4	Progress D: Unfunded – Priority 2
We will investigate the role of agricultural sources in the failure to comply with River Quality Objectives in the Brinkworth Brook.	There have been few or no visits due to Foot and Mouth disease.
Cost: 9.1k	**Time scale**: 2000- 2001
Action by: Agency	**Contact:** Team Leader Environment Protection

Action 7.7.5	Progress D: Unfunded – Priority 2
We will carry out a campaign of farm visits in the Somerset Frome catchment.	No progress, current level of resourcing prevents any pro-active work being undertaken. No immediate prospect of restarting.
Cost: 5.5k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Environment Protection

Action 7.7.6	Progress N
We will carry out farm visits in the Midford Brook, Wellow, Somer and Cam catchments to give advice on best practice for the management of land.	Farming and Wildlife Advisory Group have been commissioned to set up a farm advisory project in the Midford, Wellow and Cam brook.
Cost: 10k	**Time scale:** 2001-2002
Action by: Agency, Farming and Wildlife Advisory Group	**Contact:** Team Leader Environment Protection

Issue 7.8: The impact of nutrient pollution and nutrient enrichment

Action 7.8.1	Progress S
Ensure Urban Waste Water Treatment Directive Sensitive Areas (Eutrophic) compliance through AMP3 at the following STW discharges to the Avon and tributaries: Chippenham, Saltford, Keynsham, Melksham, Trowbridge, Bradford-on-Avon (direct discharges to the Avon), Calne, Frome, Radstock (indirect discharges).	Work is ongoing and on target for 2005 completion. Regular meetings are taking place with the water companies.
Cost: 5k	**Time scale:** 2000-2005
Action by: Agency, Department of Environment, Farming and Rural Affairs, Wessex Water Services Limited	**Contact:** Team Leader Tactical Planning

Action 7.8.2	Progress S: Unfunded – Priority 2
We will continue to assess the ecological impact of excess nutrients on the catchment.	Biological assessment has been carried out to assess nutrient levels. We will continue to assess nutrient levels using a variety of monitoring methods in association with other monitoring programmes.
Cost: 2k	**Time scale:** 2000-2001, 2003
Action by: Agency	**Contact:** Team Leader Biology

Action 7.8.3	Progress D: Unfunded – Priority 2
We will produce a nutrient budget model for the whole catchment, allowing the size of the input from diffuse sources to be evaluated.	The completion date for the model is March 2002. Work is anticipated to begin in Autumn 2001.
Cost: 5k	**Time scale:** 2001, 2004
Action by: Agency	**Contact:** Team Leader Biology

Action 7.8.4	Progress D: Unfunded – Priority 2
We will use the nutrient budget model to target investment if smaller point and diffuse sources are found to be significant.	Dependant on action 7.8.3.
Cost: unknown	**Time scale:** 2001
Action by: Agency	Contact: Team Leader Biology

Action 7.8.5	Progress S: Unfunded – Priority 3
We will undertake a joint investigation with British Waterways into the water quality/nutrient status of the Seend Feeder and its effect on the Kennet and Avon Canal.	Sampling and flow data is still being collected. A joint review is required.
Cost: 1.5k	**Time scale:** 2000-2001
Action by: Agency, British Waterways	Contact: Team Leader Environment Protection

Action 7.8.6	Progress S: Unfunded – Priority 1
We will promote the creation of buffer strips where appropriate.	Buffer strips are created by landowners in response to our advice for good practice. There are no Agency projects in the Bristol Avon to create buffer strips, although as part of the Avon Valley Partnership initiative we hope to see some created along the banks of the Avon between Bristol and Bath.
Cost: 25k	**Time scale:** 2000-2004
Action by: Agency, Farming and Wildlife Advisory Group, Department of Environment Farming and Rural Affairs, Wildlife Trusts	Contact: Team Leader Conservation

Action 7.8.7	Progress N
We will use the nutrient budget model to target investment if smaller point and diffuse sources are found to be significant.	New Action. Some progress has already been made. All sites receiving sewage sludge for spreading are being identified. Water quality, fisheries and biology data has been analysed to define the impact of diffuse pollution in the North Wessex Area, and will be used to draw up a list of area specific actions. Future action is likely to include identifying and mapping areas of nutrient enrichment of ground water and soils, soil erosion, compaction and fauna damage.
Cost: 0.5k across North Wessex Area	**Time scale:** 2001-2002
Action by: Agency	Contact: Team Leader Environmental Protection

Action 7.8.8	Progress N
Set up flow monitoring at all sites where required for load analysis of nutrients to address areas where we currently have insufficient information.	New Action. Implementation will depend on the outcome of work under action 7.8.7
Cost: 0.5k across North Wessex Area	**Time scale:** 2001-2002
Action by: Agency	Contact: Team Leader Environmental Protection

Issue 7.9: The need for groundwater quality measuring

Action 7.9.1	Progress S- Unfunded – Priority 2
We will consider the development of a more rigorous monitoring network, based where possible on existing supply boreholes, in line with the recommendations made by the British Geological Survey in 1994.	Work is underway to identify new sites across the region, and initial contact is being made with the Water Companies to discuss the use of their sources where appropriate. New monitoring sites will come into use as funds become available. Attention is focussed primarily on major aquifers in the first instance, and minor aquifers will then follow.
Cost: 5k	**Time scale:** 2000-2001
Action by: Agency, Water Companies	**Contact:** Team Leader Water Resources

Issue 7.10: The state of the Abberd Brook

Action 7.10.1	Progress C Unfunded Priority 2
We have identified actions to address the concerns about the Abberd Brook and have begun to carry them out.	Farms in the catchment were visited, the consents for discharges from the Aggregate Industries site are currently being reviewed. A comparison has been made between historic and recently obtained flow data. A supermarket trolley recovery scheme has been set up between supermarkets in Calne and Calne Town Council. For other items in the Abberd brook such as washing machines and chairs the Town Council contact the Agency and our Flood Defence team remove them to prevent possible flooding issues. The relationship works well with regular two way communication.
Cost: 10k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Environment Protection

Issue 7.12: Flood warning

Action 7.12.1	Progress S
As part of the regional study we will review Flood Warning and decide priorities for improvement in the Bristol Avon area.	Investigations into sites in the Upper and Lower Avon are ongoing, although some research has been hampered by Foot and Mouth. Due to last years floods additional work is taking place on flood warning plans and projects. New flood warning criteria will be introduced for the Upper Bristol Avon. These should provide earlier warnings for a number of locations including Malmesbury.
Cost: 1,000k p.a. for the South West Region	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Flood Warning

Issue 7.13: Major Incident Plans

Action 7.13.1	Progress C
Locations for Major Incident Plans in Wiltshire are being considered by the local authorities. Once locations are decided we will contribute to those plans.	Please see action 7.13.2 for locations of Major Incident Plans.
Cost: 2k	**Time scale:** 2000
Action by: Agency	**Contact:** Flood Defence Strategic Planning

New Action

Action 7.13.2	Progress S
We will continue to work with local authorities on the production of their Major Incident Plans.	With Agency input, local authorities are producing Major incident plans for Malmesbury, Chippenham, Melksham, Bradford on Avon, Trowbridge, Bath and Bristol. A multi-organisation exercise took place in 2000 for Chippenham's Major Incident Plan.
Cost: 2k	**Time scale:** 2001
Action by: Agency	**Contact:** Team Leader Flood Warning

Issue 7.14: River rehabilitation and channel management

Action 7.14.1	Progress D
We will develop a five-year plan of priority sites for river restoration	See action 4.1.1.
Cost: 10-20k p.a.	**Time scale:** 2000-2004
Action by: Agency,	**Contact:** Team Leader Conservation

Action 7.14.2	Progress C. Unfunded – Priority 1
With partners, we will continue to implement the Bristol Frome Action Plan (1994), as funds become available (Ladden Brook Phase 3).	No further work is planned by the partners so this action is now closed.
Cost: 20k	**Time scale:** 2000
Action by: Agency, local authority, Forest of Avon, Department of Environment Farming and Rural Affairs, Farming and Wildlife Advisory Group, Wildlife Trust and Forestry Authority	**Contact:** Team Leader Conservation

Action 7.14.3	Progress D
We will contribute to a collaborative project with Bristol City Council to implement Bristol City Frome Action Plan and River Trym and Hazel Brook enhancements. There are currently no funds available for this project.	These projects require considerable funds beyond the resources of the partners and are only likely to proceed if external funding is obtained. To date no bids are planned.
Cost: 2k	**Time scale:** 2000-2001
Action by: Agency, Bristol City Council, Forest of Avon Project, Farming and Wildlife Advisory Group	**Contact:** Team Leader Conservation

Action 7.14.4	Progress S. Unfunded – Priority 1
We will continue to support the work of the Cotswold and By Brook Countryside Management Project.	We are continuing to support this project and are backing work on native crayfish populations and the impact of Signal crayfish in the By Brook.
Cost: 6k p.a.	**Time scale:** 2000-2004
Action by: Agency, Wiltshire Wildlife Trust, Department of Environment, Farming and Rural Affairs, North Wiltshire District Council, English nature	**Contact:** Team Leader Conservation

Action 7.14.5	Progress D: Unfunded – Priority 2
We will continue to enhance the fisheries, ecology and recreation value of Semington Brook.	There has been no funding for this project
Cost: unknown	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Conservation

Action 7.14.6	Progress S: Unfunded – Priority 2
We will identify river control structures for the feasibility of removal/redesign.	It is an ongoing practice through day to day consultations and referrals to consider fishery/river improvement options and opportunities. Recently habitat improvements works on a section of the Sherston Avon involved removing/lowering a weir and reinstating a pool and riffle regime to a previously impounded section of trout river. Spawning trout have already been seen using the newly created riffles and juvenile trout have been found in surveys.
Cost: 6k	**Time scale:** 2000-2001
Action by: Agency, riparian owners	**Contact:** Team Leader Fisheries

Action 7.14.7	Progress C
Cotswold and By Brook Countryside Management Project.	Please see action 7.14.4.
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency, Avon Wildlife Trust, Bristol Environment and Energy Trust, Allied Dominic and local industries	**Contact:** Team Leader Conservation

Issue 7.15: Phytopthora (Alder Disease)

Action 7.15.1	Progress C
To establish the extent of the problem, we will survey the Alders of the upper Bristol Avon catchment.	The Bristol Avon has an extensive Phytophthora problem, although the Avon only has a moderate alder population. In comparison to the River Avon, the Frome has a very large riparian alder population. The status of the disease is only 'present' in this area rather than extensive therefore this area would benefit from continued monitoring. The most useful option at the moment is the continued monitoring of the distribution and status of this disease to assess the possible long term impact.
Cost: 2.5k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Conservation

Actions 7.15.3 and 7.15.4 are being removed. Further actions will be developed for this issue when the results of the survey are known and other research has taken place.

Action 7.15.2	**Progress D: Unfunded – Priority 2**
We will review management options, once the outcome of research into disease transmission is known.	There has been no news on the research of Alder disease. Management should include the selective planting of native trees (e.g Willows) to replace dead Alders, maintain bank stability and provide additional wildlife habitat. We discourage the planting of Alders next to watercourses in the Bristol Avon catchment to prevent the disease spreading. No management programme is likely to be set up until the method of transmission of the disease is known and how it can be controlled.
Cost: unknown	**Time scale:** 2000-2004
Action by: Agency, Forestry Commission	**Contact:** Team Leader Conservation

Action 7.15.3	**Progress C: Unfunded – Priority 1**
We will formulate a management programme for bankside alders in partnership with others.	This action is being replaced by 7.15.2.
Cost: unknown	**Time scale:** 2000-2004
Action by: Agency, Forestry Commission, Forest of Avon, Farming and Wildlife Advisory Group, local authorities, Avon Valley Partnership and Wildlife Trusts	**Contact:** Team Leader Conservation

Action 7.15.4	**Progress C: Unfunded – Priority 2**
We will undertake remedial action where and when appropriate. (Against phytopthora)	This action is being replaced by 7.15.2
Cost: unknown	**Time scale:** 2000-2004
Action by: Agency, Forestry Commission	**Contact:** Team Leader Conservation

Issue 7.16: Invasive plants

Action 7.16.1	Progress C
We will carry out a status and distribution survey of alien invasive plants in the Upper Bristol Avon catchment and produce a report.	A report was produced in October 1998 which shows that Giant hogweed would not appear to be a particular problem as the plant has not been recorded in any of the River Corridor Survey, field surveys etc. However, as the plant is highly invasive continued vigilance is essential. Himalayan balsam has a fairly continuous distribution along the River Avon. The upstream limit would appear to be around the Great Somerford area with only a few occurrences of the plant on the smaller tributaries. There is a small fragmented population of Japanese knotweed within the upper Avon catchment. The distribution of the plant reveals a clear correlation with urban areas due to the plant's dispersal ability which is greatly assisted by human activity such as dumping and building activity.
Cost: 2.5k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Conservation

Action 7.16.2	Progress S, Unfunded – Priority 2
We will continue to monitor the distribution and status of invasive alien species.	We are not monitoring the invasive situation directly. We are however encouraging the public to report sightings to us and as part of the Avon Valley Partnership are conducting a training day in the identification of the plants so local people can monitor their own part of the Avon between Bristol and Bath.
Cost: 8k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Conservation

Action 7.16.3	Progress C, Unfunded – Priority 1
We will set up a management group for Japanese knotweed, to identify management options and control mechanisms.	This has not happened and is now unlikely to happen. Work took place in partnership with South Gloucestershire Council to help control Japanese knotweed in their area. No funds are available to do this via our workforce but South Gloucestershire are still carrying out some control.
Cost: 20k	**Time scale:** 2000-2004
Action by: Agency, English Nature, Local Authorities, Environmental Records Centre, Wildlife Trusts, British Trust for Conservation Volunteers(BCTV), Forest of Avon, Forestry Commission, Angling clubs	**Contact:** Team Leader Conservation

Issue 7.17: Recreation pressure and opportunity

There are many opportunities for recreation and amenity in the catchment. In addition to angling, the river is used for boating, particularly in the lower reaches, whilst in some places public footpaths and open spaces allow access to the banks for bird watching and walking. In Bath boat trips ply their trade. The stretch between Bath and Bristol is busy with a variety of boating activities and is linked to the Thames via the Kennet and Avon canal. Bristol Floating Harbour is a major leisure boating facility. A riverboat also operates from Temple Meads station. In recent years, local groups have set up projects as part of the Local Agenda 21initiative to enhance the environment and amenity of the river corridor.

In February 2001 the Environment Agency brought in a speed limit for boats along a stretch of the Avon in Bath. The seven kilometre stretch of river between Pulteney and Bathampton weirs is now subject to a speed limit of four knots. The limit was imposed to prevent further riverbank erosion caused by the wash of vessels and to protect the locally significant Lodden Pondweed.

Action 7.17.1	**Progress C: Unfunded – Priority 1**
We will support the work of North Wiltshire District Council in promoting the Chippenham River Green Project depending on funding availability.	The funding required for this project is in competition with other projects for our limited flood defence budget and to date has not risen high enough in priority to warrant funding. This action will be replaced by this action will be replaced by action 7.17.8.
Cost: 0.5k	**Time scale:** 2000-2002
Action by: Local authority, (North Wiltshire District Council), Cyclists Touring Club, Agency, Lottery, local business	**Contact:** Team Leader Conservation

Action 7.17.2	**Progress S: Unfunded – Priority 1**
We will continue our involvement with the Avon Valley Partnership.	We are continuing to support the Avon Valley Partnership and sit on both the Community Working Group and Avon Valley Walkway group as well as the core group. We have put in a bid for money to continue supporting the project - we are awaiting the result. This year 2001 we will be re-running training days for the community following last year's events. These will focus on invasive plants, riparian mammals and look at how riverbanks can be managed and enhanced to benefit wildlife. We contributed 0.5k to a survey of the Greater Dodder on the Avon Valley Walkway and 0.5k to assist in the application of a Farming and Wildlife Advisory Group project which will enable a landowner to create a riparian area of 'set aside' to benefit riparian wildlife.
Cost: 2k	**Time scale:** 2000-2004
Action by: BANES, Countryside Agency Bristol City Council, South Gloucestershire Council, Agency, Forest of Avon and Community groups	**Contact:** Team Leader Conservation

Action 7.17.3	Progress S
We will work with others to improve the footpath in the Bristol Frome Valley walkway.	We are working with various partners to encourage enhancements along the length of the Bristol Frome.
Cost: 5k	**Time scale:** 2000-2002
Action by: Agency, local authority, riparian interest and community groups and Forest of Avon, Friends of the River Frome.	**Contact:** Team Leader Conservation

Action 7.17.4	Progress D Unfunded = Priority 2
We will review recreational and educational potential of Agency land at Pulteney Weir.	We are awaiting the timetable for capital works.
Cost: 2k	**Time scale:** 2000-2002
Action by: Agency	**Contact:** Team Leader Conservation

Action 7.17.5	Progress S
We will liaise with local planning authorities to ensure appropriate policies are included in Local Development Plans and Community Plans.	There have been no Local Plans in the Bristol Avon catchment area to comment on so far, but we would make comments relating to the enhancement of water-related recreation where it does not conflict with our conservation duties.
Cost: 2k	**Time scale:** 2000-2004
Action by: Agency, local authorities	**Contact:** Team Leader Conservation

Action 7.17.6	Progress D
We will contribute to developing guiding principles for recreation and conservation issues in the Bristol Avon valley.	No progress
Cost: 10k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Conservation

Action 7.17.7	Progress D Unfunded = Priority 2
We will help to develop better mechanisms for sharing recreational and conservation information between interested bodies.	No regular liaison has been set up.
Cost: 0.4k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Conservation

Action 7.17.8	Progress N Unfunded = Priority 1
We will seek external funds to support the work of North Wiltshire District Council in promoting the Chippenham River Green Project.	
Cost: 0k	**Time scale:** 2001-2002
Action by: Agency	**Contact:** Team Leader LEAPs

Issue 7.18: Sewage debris, general debris and litter in the river corridor

Action 7.18:1	Progress S: Unfunded – Priority 2
We will liaise with local authorities, other organisations and local groups in the Bath Area, to explore possibilities for litter control.	No routine liaison, meetings with partners and Tidy Britain group were held in January 2001. Tidy Britain group may co-ordinate major initiative for Bath in forthcoming years
Cost: 6.5k	**Time scale:** 2000-2004
Action by: Agency, local authorities, local organisations and community groups	**Contact:** Team Leader Environment Protection Mid Avon

Action 7.18:2	Progress D
We will encourage Wessex Water and the local authorities to re-start the 'Bag it and Bin it' Campaign.	No progress to date.
Cost: 0.5k	**Time scale:** 2000-2004
Action by: Agency, Wessex Water, South Gloucestershire Council, B&NES	**Contact:** Team Leader LEAPs

Action 7.18:3	Progress C
We will liaise with Wessex Water and relevant organisations to secure necessary improvements to the sewerage infrastructure in the Bath area and Bristol Frome catchment.	Please see action 7.6.3 for progress on this issue.
Cost: -	**Time scale:**
Action by: Agency, Wessex Water	**Contact:** Team Leader Environment Protection Gtr Bristol and Avon

8. Major Industry

Integrated Pollution Prevention and Control

One of the Agency's key responsibilities is to prevent pollutants from major industrial processes being released into the environment. Where releases do occur, we try to make sure they are minimised and made harmless. Regulations identify industrial processes that use or produce potentially harmful substances in significant amounts, known as prescribed processes and substances. Broadly, these are the industrial processes with the greatest potential to cause pollution. Local authorities regulate smaller, less complex industrial processes.

The United Kingdom was one of the first countries in Europe to introduce an integrated regulatory system, and many individual processes have been authorised under Integrated Pollution Control (IPC). A similar approach is being introduced throughout the European Union under the new *Integrated Pollution Prevention and Control Directive* (IPPC). Integrated Pollution Prevention and Control came into force in the UK on 1st August 2000. This will apply to a broad range of industrial and commercial sectors, most subject to existing but separate authorisation schemes for their emissions to water, air and land. Sectors such as those involved in food and drink production and permits will regulate intensive agriculture for the first time.

We previously regulated discharges to water by sectors not covered by Integrated Pollution Control by issuing consents, which restrict the amount and type of pollutants

that can enter a watercourse. While existing sites will be phased into the new regime between now and 2007, any new sites under development will be subject to Integrated Pollution Prevention and Control with immediate effect.

The Integrated Pollution Prevention and Control Directive requires member states to prevent or, where that is not possible, to reduce pollution from a range of industrial and other installations, by means of an integrated permitting process based on the application of 'best available techniques'. The integrated approach takes a wide range of environmental impacts into account such as emissions of pollutants (to air, water and land), energy efficiency, water efficiency, consumption of new materials, noise and site restoration. The aim is to achieve a high level of protection for the environment as a whole. Permits must take into account local environmental conditions at the site concerned, its technical characteristics and its geographical location. Conditions must be included to address any cross boundary pollution from an installation and also to ensure, where necessary, that any environmental quality standard laid down in European Community legislation is not breached.

Issue 8.1: The impact of quarrying and sand extraction on water and air quality

Action 8.1.1	**Progress S**
We will investigate the impact on water quality of mineral extraction sites and depending on the outcome, review and revise consents as necessary.	Visits to Halecombe Quarry, Leigh on Mendip have identified discrepancies between consent and site practices which are currently being determined between consent holder, Water Quality and Environmental Protection.
Cost: 1.2k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Environment Protection Mid Avon

Issue 8.2: The impact of industry

Action 8.2.1	**Progress S, Unfunded – Priority 2**
We will make regular pollution prevention visits to major industrial sites.	Partially achieved. Visits involve general inspection of sites and contact with resident companies.
Cost: 4k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Environment Protection Upper Avon

Action 8.2.2	**Progress S**
We will review the consent to discharge for Webbs Country Foods, Sutton Benger and if necessary revise it.	Work is progressing to obtain additional water quality and flow data to confirm the findings of the initial study which suggested that revision of the current consent standards for the discharge may not be required.
Cost: 1k	**Time scale:** 2000-2001
Action by: Agency	**Contact:** Team Leader Discharge Consenting

Action 8.2.3	Progress D: Unfunded - Priority 2
We are carrying out regular pollution prevention visits to reduce the risk of incidents.	No progress, current level of resourcing prevents any pro-active work being undertaken. No immediate prospect of restarting.
Cost: 0.8k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Environment Protection Mid Avon

Action 8.2.4	Progress C
We are considering taking formal action against the operator of the fertiliser plant at Urchfont and negotiating improvements to the fertiliser lagoon.	A notice requiring relining of the lagoon was served and complied with.
Cost: 1k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Environment Protection Upper Avon

Action 8.2.5	Progress S: Unfunded - Priority 2
We will investigate the causes of River Quality Objective failure in the Hancock's Water and take appropriate action.	Data search indicated that river quality has improved. However, a new monitoring point has been proposed to aid further assessments.
Cost: 1k	**Time scale:** 2000-2002
Action by: Agency	**Contact:** Team Leader Environment Protection Upper Avon

Issue 8.3: The impact of tyre burning at Blue Circle Cement, Westbury

A public meeting about the Blue Circle proposal to burn tyres was held on Monday July 2, 2001. At the meeting Agency officers outlined their consideration of the application and responded to issues raised during the consultation.

Action 8.3.1	Progress C
We will evaluate data from the third tyre burning trial and consult on and determine Blue Circle's application for tyre burning on a permanent basis once we have received it.	The Agency has varied Blue Circle's authorisation with effect from 30th August 2001 to allow tyre burning. The release limit for oxides of nitrogen has been tightened, and a number of new conditions have been included in the authorisation to ensure that the environmental impact of tyre burning is less than that for burning more conventional fuels.
Cost: 100k +	**Time scale:** July 2001
Action by: Agency	**Contact:** Team Leader Process Industry Regulation/ Radioactive Substances Regulation

Issue 8.4: The impact of Premiere Environmental Ltd site at the West Wiltshire Trading Estate, Westbury.

The Environment Agency began monitoring of the Premiere Environmental site following a number of incidents in recent years, which raised concerns about risks to human health and the environment. Following the serving of a number of notices to the

company during 2000 the company ceased trading in July 2000. The trading estate owners have taken responsibility for the clearance of chemicals abandoned at the site and this work is well advanced and expected to be completed during 2001. The Agency continues to inspect the site and participates in a multi-agency forum that aims to ensure that the operation is completed safely.

Action 8.4.1	Progress S
We will continue to regulate and monitor the site to ensure that human health is not harmed nor the environment polluted	Work was recently carried out to remove 10 large 55,000 litre tanks from the site, this work is part of the final phase of decommissioning works on the Premiere site.
Cost: 125k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Environment Protection Upper Avon

Action 8.4.2	Progress C
We will work with the company to ensure that new abatement equipment (thermal oxidiser) for the solvent solidification process is effective. We have engaged consultants to monitor emissions.	Completed early due to site closure.
Cost: 10k p.a.	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Environment Protection Upper Avon

9. Air Quality

In January 2000 the Government published its National Air Quality Strategy which set out:

- a framework of standards and objectives for the pollutants of most concern,
- a timetable for achieving objectives and the steps the government is taking,
- the measurements it expects others to take to see that objectives are met.

Responsibility lies with District Councils (or Unitary Authorities) to review and assess air quality, but County Councils are expected to work in partnership with the District Councils throughout the process of local air quality management.

We have been working with local authorities to help achieve the objectives, principally through our regulation of emissions from controlled (Part A) major industrial processes under Integrated Pollution Control. Local authorities are responsible for the regulation of smaller, less complex (Part B) industrial processes, and for reducing traffic pollution.

Issue 9.1: Poor air quality in towns and cities

Action 9.1.1	Progress S
We will work with local authorities, Government agencies and developers with the aim of ensuring that developments make use of transport options producing least pollutants.	A number of Local Authorities are looking at sustainable, low pollution transport options for example buses, cycle ways etc. In addition we have raised this point when considering development plans.
Cost: 0.5k	**Time scale:** 2000-2004
Action by: Agency	**Contact:** Team Leader Planning Liaison

Issue 9.2: The impact of emissions to air from heavy industry

Action 9.2.1	Progress S
We will work with Bristol City Council and South Gloucestershire Council to investigate the potential impact of increasing emissions of oxides of nitrogen from the proposed power stations.	Both Councils are proposing to designate Air Quality Management Areas to tackle potential breaches of the Nitrogen Dioxide Air Quality Objectives. Nitrogen Dioxide emissions are largely from transport sources, not industrial sources.
Cost: 0.5k	**Time scale:** 2001
Action by: Agency	**Contact:** Team Leader Process Industry regulation/ Radioactive substances Regulation

10. Climate Change

Flood Defence

Catchment Flood Management Plans (CFMP)

In October 2001, The Department for Environment, Food and Rural Affairs (DEFRA) will publish guidelines for the production of CFMP for the whole country by 2003.

A CFMP considers flood risks on a whole catchment basis, and identifies the processes that lead to those risks. It considers the impact of future changes, i.e. climate change, land use, on existing and possible future flood risks. It also considers the sensitivity of the flood risks to a series of possible scenarios including detention, improvement, embanking and flood warning. This results in a high level policy for flood warning to influence the planning process, and future investment in works and further studies to improve understanding of the processes.

The CFMP process includes periods of consultation. To aid in this, the Local Flood Defence Committee will set up a Steering Group of representatives of interested bodies.

Flood Warning

Absolute flood protection is not possible and so effective warnings are essential, especially where a flood defence scheme cannot be justified. We issue warnings through the media, the Agency's Floodline telephone service, and directly to people in some areas by telephone, fax or pager, or by local flood wardens or sirens.

During 1998 much of England and Wales were seriously hit by floods, both at Easter and again in October. An independent report was commissioned to look at how we dealt

with these floods; the result was the Bye Report, published on 1 October 1998. In response we published our own Easter Floods Action Plan. Findings from both these reports and consultation with the Government set new priorities to ensure the delivery of an improved Flood Warning Service i.e. "A seamless and integrated service of flood forecasting, warning and response."

One of the key developments resulting from the review of flood warning is the implementation of a new flood warning code system. The colour-based flood warning code system (yellow, amber, and red) has been replaced with a staged approach since September 2000. Under the new system there are four stages of warning:

- **All-clear:** No flood watches or warnings currently in force in the area; flood water levels receding; check all is safe to return; seek advice.
- **Flood watch:** Flooding is possible; be aware; be prepared; watch out.
- **Flood warning:** Flooding of homes, businesses and main roads is expected; act now.
- **Severe flood warning:** Severe flooding is expected; imminent danger to life and property; act now.

In September 2000 we mailed 843,000 homes and businesses in flood risk areas throughout England and Wales as part of Flood Action Week. **Floodline 0845 988 1188** was introduced in October 1999 and is an integral part of the new system. The service gives details 24 hours a day of flood warnings in force, and advisors can give callers advice to protect homes and property. Floodline received over 90,000 calls before October 2000, and over 500,000 calls during October and November alone following recent flood events. We aim whenever possible to give at least a two-hour warning, based on weather information and our own telemetry readings. The flood warning service is based on the principle that the better prepared people are, the better they will cope with the effects of flooding.

A further aspect of the Agency's Flood Warning Dissemination Project is the production of Major Incident Plans for urban areas protected by flood defences, in conjunction with local authorities and emergency services. The plans are funded by the Agency, but owned by the local authority.

Issue 10.1: Tidal defence and sea level rise

Action 10.1.1	**Progress S: Unfunded – Priority 1**
We will discuss flooding issues such as the A4 Portway with Bristol City Council.	A report on existing flood risk was sent to Bristol County Council following the December 1999 flood. Bristol Avon Catchment Flood Management Plan to be produced during 2001/02 will include assessment of climate change impact on flood risk, and effect of options for reduction in risk.
Cost: 20k	**Time scale:** 2000-2002
Action by: Agency, Bristol City Council.	**Contact:** Team Leader Flood Defence projects

New Action

Action 10.1.2	Progress S
We will consult widely, including all local authorities, on flood risks and possible future impacts on them as part of the Catchment Flood Management Plan process.	Consultation on the scoping document for the Bristol Avon CFMP is programmed for November 2001 to February 2002, and on the final draft document for November 2002 to February 2003. A Steering Group will be set up by November 2001.
Cost: 70k	**Time scale:** 2001-2003
Action by: Agency, all interested bodies.	**Contact:** Team Leader Flood Defence Strategic Planning.

Issue 10.2: The need for improved information on flood risk and development

Action 10.2.1	Progress C
We will produce detailed flood risk maps (S105) for land-use planning within Local Development Plans according to the timetable (published in the Action Plan).	We have successfully integrated floodplain maps and policies into emerging District Wide Local Plans via consultation with the various District, City and Unitary Authorities in Bristol Avon Leap area.
Cost: 75k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Development Control

Issue 10.3: Tidal defence and sea level rise

Action 10.3.1	Progress C
We will assess the need for improved methane control measures.	Reviews of priority landfill facilities in the catchment are complete (see action 6.3.1). Sites generating sufficient gas are now being closed as they have energy recovery potential. Compton Basset landfill now has planning permission for an energy recovery plant and drastic reductions in methane emissions are expected. Methane emission reduction is now a requirement of reviewed licences.
Cost: 2.5k	**Time scale:** 2000
Action by: Agency	**Contact:** Team Leader Waste Licensing

Issue 10.4: The impact of energy and fossil fuel use on climate

We have developed an Environmental Management System to monitor our own environmental performance. An Environmental Management System is a systematic way of managing the environmental impact of an organisation. A successful system will deliver a continual improvement in our environmental performance, and create potential for substantial cost savings.

The Agency will support continuous environmental improvement by the establishment of demanding but achievable and measurable environmental performance targets, determined and reviewed annually. These targets cover aspects of energy and resource use, waste minimisation and recycling.

Our targets for 2001/2002 are set out in Figure 5, and progress will be covered by a new action (10.4.4). The targets set are national targets to be achieved within a timescale of five years. Achievement of the targets will fulfil the Agency's commitments under the Greening Government Initiative and will also result in real business benefits.

Figure 5: Environmental Performance Targets 2001/2002

Aim: A greener business world

Target 1: Develop and externally certify the Environment Agency Management System to ISO9001/14001 by April 2002.

Aim: Limiting and adapting to climate change

Target 2: To reduce buildings energy consumption by 10% from a 1999/00 baseline by the end of March 2005:

- We will progress this through the achievement of site specific targets at 65% of sites by the end of March 2002.

Target 3: To purchase 6 million kWh of renewable generated electricity by the end of March 2005:

- We will progress towards this by purchasing an additional 1.2 million kWh from a baseline of 2000/01 by the end of March 2002.

Aim: Improve and protect inland and coastal waters

Target 4: To reduce buildings water consumption by 10% from a 1999/00 baseline by the end of March 2005:

- We will progress towards this through the achievement of site specific targets at 65% of sites by the end of March 2002.

Aim: Wiser, sustainable use of natural resources

Target 5: To reduce office waste by the end of March 2005 in the following areas:

- residual waste from offices by 20% (5% per annum) from a 1999/00 baseline
- reduce the purchase of paper by 10% (2.5% per annum) from a 1999/00 baseline

Aim: Cleaner air for everyone

Target 6: To reduce total vehicle emissions by 10% from a 1999/00 baseline by the end of March 2002, to include:

- 9% mileage reduction from a 1996/7 baseline focusing on office based staff and miles driven in private cars
- the purchase of an additional 40 alternatively fuelled badge vehicles

Action 10.4.1	**Progress C**
Reduce energy (electricity) consumption in our offices and depots by 20% compared to Energy Efficiency Office (EEO) typical, or 1991/92 consumption, whichever is lower.	The North Wessex area was between 3% and 14% better than the target.
Cost: Saving	**Time scale:** 2000
Action by: Agency	**Contact:** Area Business Services Manager

Action 10.4.2	Progress C
Reduce business mileage in the North Wessex Area by 5% and our overall fuel efficiency by 3 mpg on our 1996/97 figures.	Business mileage was 2% better than the target in North Wessex.
Cost: Saving	**Time scale:** 2000
Action by: Agency	**Contact:** Area Business Services Manager

Action 10.4.3	Progress S
Seek greenhouse gas reductions from heavy industrial processes by means of Pollution Prevention Control (PPC) permits.	The Integrated Pollution Prevention and Control (IPPC) Directive will be implemented from 2001 to 2007, energy efficiency will be a consideration when issuing PPC permits
Cost: 10k	**Time scale:** 2000-2002
Action by: Agency	**Contact:** Team Leader Process Industry Regulation/ Radioactive Substances Regulation

Action 10.4.4	Progress N
Contribute at area level to the achievement of national targets for improving the Agency's environmental performance (see figure 5 above).	
Cost: unknown	**Time scale:** 2000-2002
Action by: Agency	**Contact:** Area Business Services Manager

11. Appendices

1: River Quality Objectives

We manage water quality by setting targets called River Quality Objectives (RQO). They are intended to protect current water quality and future use, and we use them as a basis for setting consents for new discharges and planned future quality improvements. River Quality Objectives are assigned to all significantly sized rivers based on river flow.

River Quality Objectives are based on the River Ecosystem Classification Scheme that consists of five classes. It sets standards for dissolved oxygen, biochemical oxygen demand, total ammonia, free ammonia, pH, dissolved copper and total zinc. Class RE5 has lower limits and does not in any way denote the worst water quality possible.

Figure 6: River Ecosystem (RE) classification

River Quality Objective	Class Description
RE1	Water of very good quality suitable for all fish species
RE2	Water of good quality suitable for all fish species
RE3	Water of fair quality suitable for high class coarse fish populations
RE4	Water of fair quality suitable for coarse fish populations
RE5	Water of poor quality, which is likely to limit coarse fish populations

We show failures to achieve River Quality Objectives as significant and marginal failures. Significant failures are those where we are 95% certain that the river stretch has failed to meet its River Quality Objective. Marginal failures are those where we are less certain (between 50% and 95%) that the stretch has failed to meet its River Quality Objective.

Figure 7: River Quality Objective results for 1999 and 2000

Bristol Avon	Public stretch name	Stretch number	Length (km)	RQO 2000	2000 Compliance
AVON	Bath Central-Conf With Corston Bk	20	4.2	3	Compliant
AVON	Blackwell Hams-Conf With Bydemill Bk	8	5.6	3	Compliant
AVON	Conf With Biss-Turleigh	14	5.1	3	Compliant
AVON	Conf With Boyd-Conf With Siston Bk	23	3.5	3	Compliant
AVON	Conf With Brink Bk-Conf With Sutton Benger Bk	4	6.3	2	Compliant
AVON	Conf With By Bk-Conf With Lam Bk	18	2.7	2	Compliant
AVON	Conf With Bydemill Bk-Conf With Forest Bk	9	4.9	3	Compliant
AVON	Conf With Charlton Str-Conf With Gauze Bk	2	2.3	2	Compliant
AVON	Conf With Corston Bk-Swineford	21	1.8	3	Compliant

AVON	Conf With Forest Bk-Scotland Road	10	1.5		Compliant
AVON	Conf With Frome-Conf With Midford Bk	16	3	3	Compliant
AVON	Conf With Gauze Bk-Conf With Brink Bk	3	5.1	2	Compliant
AVON	Conf With Lam Bk-Bath Central	19	5.2	2	Compliant
AVON	Conf With Marden-Blackwell Hams	7	5	2	Compliant
AVON	Conf With Midford Bk-Conf With By Bk	17	5.4	3	Compliant
AVON	Conf With Semington Bk-Conf With Biss	13	5.1	2	Compliant
AVON	Conf With Sherston-Conf With Charlton Str	1	1.1	2	Compliant
AVON	Conf With Siston Bk-Conham	24	5.6	3	Compliant
AVON	Conf With South Bk-Conf With Semington	12	3.4	3	Compliant
AVON	Conf With Sutton Benger Bk-Malford	5	0.4	2	Compliant
AVON	Malford-Conf With Marden	6	6.8	2	Compliant
AVON	Scotland Road-Conf With South Bk	11	1.2	3	Compliant
AVON	Swineford-Conf With Boyd	22	3.7	3	Compliant
AVON	Turleigh-Conf With Frome	15	1.6	3	Compliant
SHERSTON AVON	Conf With Luckington Bk-Sherston Stw	170	1	2	Compliant
SHERSTON AVON	Crow Down Springs-Conf With Luckington Bk	169	1.9	2	Compliant
SHERSTON AVON	Sherston Stw-Twatley	171	6.1	2	Compliant
SHERSTON AVON	Twatley-Conf With Tetbury Avon	172	5.8	2	Compliant
TRYM	Source-Conf With Avon	25	7.5		Compliant
BRISTOL FROME	Conf With Bradley Bk-Broomhill	29	4.2	2	Compliant
BRISTOL FROME	Conf With Laddon Bk-Conf With Bradley Bk	28	6.2	2	Compliant
BRISTOL FROME	Old Sodbury-Yate	26	3.9	2	Compliant
BRISTOL FROME	Yate-Conf With Laddon Bk	27	7.7	2	Compliant
BRADLEY BROOK	Stoke Gifford-Conf With Bristol Avon	31	5.6	3	Compliant
LADDON BK	Bagstone-Conf With Bristol Frome	33	9	2	Compliant
LADDON BK	Sodbury Common-Bagstone	32	8.3	2	Compliant
BRISTOL FROME	Broomhill-Floating Harbour	30	6.9	2	Compliant
SISTON BK	Cadbury Heath-Conf With Avon	35	1.9	3	Compliant
SISTON BK	Warmley-Cadbury Heath	34	1.6	3	Compliant
CHEW	Chewton Mendip-Litton	36	2.1	4	Compliant
CHEW	Conf With Chew Stoke Str-Conf With Winford Bk	39	2	3	Compliant
CHEW	Conf With Winford Bk-Upper Stanton Drew	40	3.3	2	Compliant
CHEW	Litton-U/s Chew Valley Res	37	6.4	2	Compliant
CHEW	U/S Chew Valley Res-Conf With Chew	38	5.1	3	Marginal

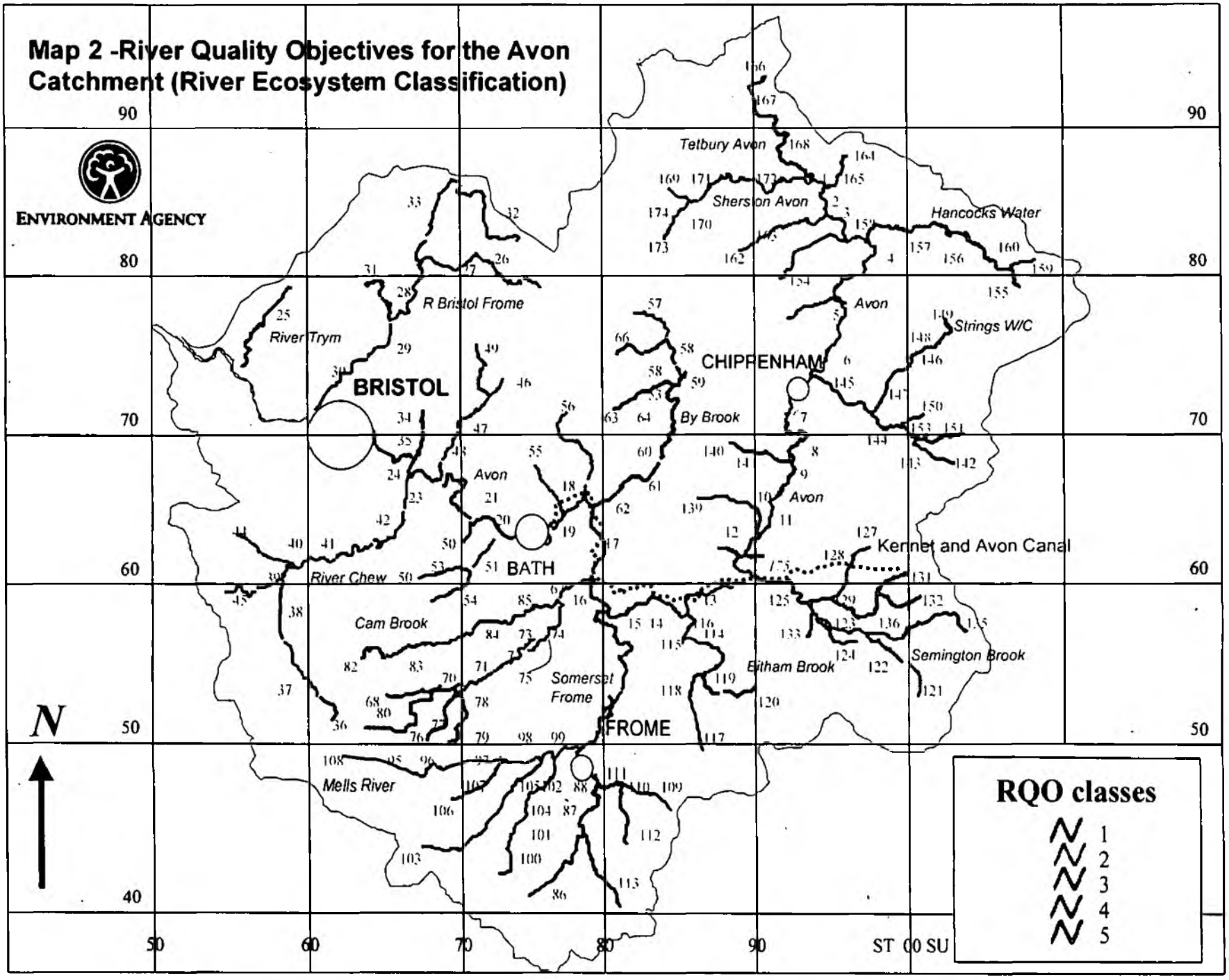
CHEW	Upper Stanton Drew-Woollard	41	4.3	2	Compliant
CHEW	Woollard-Conf With Avon	42	7.9	2	Compliant
SALTERS BROOK	Penford Stw-Conf With Chew	43	0.3		Compliant
WINFORD BK	Winford-Conf With Chew	44	4.3	2	Compliant
CHEW STOKE STR	Strode-Conf With Chew	45	4.8	2	Compliant
BOYD	Doynton-The Green	46	5.8	2	Compliant
BOYD	Golden Valley-Conf With Avon	48	2.4	3	Compliant
BOYD	The Green-Gold Valley	47	1.3	2	Compliant
FELTHAM BK	St Aldams Ash Fm-Conf With Boyd	49	3.9	3	Compliant
CORSTON BK	Newton Pk College-Conf With Avon	50	1.5	2	Compliant
NEWTON BK	Confluence with Conygre Bk-Confluence with Avon	51	5.2		Compliant
CONYGRE BK	Farmborough-U/s Castle Fm	53	0.8	-	Compliant
CONYGRE BK	U/S Castle Fm-Conf With Newton Bk	52	3.4		Compliant
PRISTON STR	Northfield-Conf With Conygre Bk	54	4.1	-	Compliant
KENNET AND AVON CANAL	Devizes-Conf With Avon(bath)	175	33.5	5	Significant Fail
LAM BK	Langridge-Conf With Avon	55	4.3	2	Compliant
ST CATHERINES BK	Source-Conf With Avon	56	8.3	2	Marginal
BY BK	Box Br-Conf With Avon	62	2.2	1	Compliant
BY BK	Burton-Conf With Broadmead Bk	57	4.1	2	Compliant
BY BK	Conf With Broadmead Bk-Rack Hill	58	2.1	1	Compliant
BY BK	Conf With Doncombe Bk-D/S Lid Bk	60	7.3	1	Compliant
BY BK	D/S Lid Bk-Box Br	61	5.7	1	Marginal
BY BK	Rack Hill-Conf With Doncombe Bk	59	2.7	1	Compliant
DONCOMBE BK	D/S Marshfield Stw-Conf With By Bk	65	4.7	1	Compliant
DONCOMBE BK	Fuddlebrook-U/s Marshfield Stw	63	0.7	2	Compliant
DONCOMBE BK	U/S Marshfield Stw-D/S Marshfield Stw	64	1.5	2	Compliant
BROADMEAD BK	West Kington-Conf With By Bk	66	4.4	1	Compliant
MIDFORD BK	Conf With Wellow Bk-Conf With Avon	67	3.2		Marginal
WELLOW BK	Conf With Somer-Tyning	70	2.2	3	Compliant
WELLOW BK	Foxecote-Long Barrow	72	3.5	2	Compliant
WELLOW BK	Long Barrow-Wellow	73	1.4	2	Compliant
WELLOW BK	Ston Easton-Welton	68	5.7	3	Compliant
WELLOW BK	Tyning-Foxcote	71	1.5	3	Compliant
WELLOW BK	Wellow-Conf With Midfofd Bk	74	4.3	2	Compliant
WELLOW BK	Welton-Conf With Somer	69	0.7	3	Compliant
CAM BK	Temple Cloud-Hallatrow	82	1.4	3	Compliant
CAM BK	Combe-Conf With Midford Bk	85	3.2	3	Compliant
CAM BK	Hallatrow-Hanham House	83	1.9	3	Compliant
CAM BK	Hanham House-Combe Hay	84	10.5	3	Compliant
CAM BK	Temple Cloud-Hallatrow	82	0.7	3	Compliant

LYDE BK	U/S Hassage Fm-Conf With Wellow Bk	75	4.1	2	Compliant
SNAILS BK	Hackmead Fm-Confluence with Wellow Bk	79	0.3	3	Compliant
SNAILS BK	Conf With Westfld Str-Conf With Kilm Str	77	1.7	3	Compliant
SNAILS BK	Stratton On The Fosse-Conf With Westfield Str	76	2.9	3	Compliant
KILMERSDON STR	Hackmead Fm-Confluence with Wellow Bk	79	4.3	3	Compliant
SOMER	B3355-Conf With Wellow Bk	81	1.7	3	Compliant
SOMER	Chilcompton-B3355	80	4.2	3	Compliant
SOM FROME	Conf With Henhamb Bk-Tellisford	92	4.1	2	Compliant
SOM FROME	Conf With Mells-Staplemead	89	2	3	Compliant
SOM FROME	Innox Hill-Conf With Mells	88	1.1	3	Compliant
SOM FROME	Lullington-Conf With Henhamb Bk	91	1.4	3	Compliant
SOM FROME	Pomperoy Fm-Conf With Avon	94	6.4	3	Compliant
SOM FROME	Staplemead-Lullington	90	1.7	3	Compliant
SOM FROME	Tellisford-Pomperoy Fm	93	1.6	3	Marginal
SOM FROME	Tytherington-Innox Hill	87	6.8	3	Compliant
SOM FROME	West Barn Fms-Tytherington	86	7.9	3	Significant Fail
MELLS	Blackers Hill-Nettlebridge	95	2.6		Compliant
MELLS	Edford-Conf With Leigh On Mendip W/c	97	6.6	2	Compliant
MELLS	Nettlebridge-Edford	96	2.9	2	Compliant
MELLS	Conf With Leigh-On-Mendip W/c-Conf With Whatley Bk	98	3.2	2	Marginal
MELLS	Conf With Whatley Bk-Conf With Frome	99	4.1	2	Marginal
MELLS TRIB	Gurney Slade Quarry-Conf With Mells	108	0.7		Compliant
NUNNEY BK	Holwell-Southfield House	101	2.1	2	Significant failure
NUNNEY BK	Southfield House-Conf With Mells Bk	102	3.8	2	Marginal
NUNNEY BK	Wanstrow-Holwell	100	4.5	2	Significant fail
WHATLEY BK	Asham Wood-Whatley Btm	104	2.6	2	Compliant
WHATLEY BK	Cranmore-Asham Wood	103	5.8	2	Compliant
WHATLEY BK	Whatley Bottom-Conf With Mells	105	2	2	Compliant
LEIGH ON MENDIP W/C	Halecombe Quarry-Conf With Mells	107	1.9	2	Compliant
LEIGH ON MENDIP W/C	Tadhill-Halecombe Quarry	106	2.7	2	Significant Fail
RODDEN BK	Cley Hill Fm-Corsley	109	2.6	2	Compliant
RODDEN BK	Conf With Redford Wtr-Conf With Frome	111	1.8	3	Compliant
RODDEN BK	Corsley-Conf With Redford Water	110	1.9	2	Compliant
REDFORD WTR	Longleat-Conf With Rodden Bk	112	4.4	3	Compliant
MAIDEN BRADLEY BK	Maiden Bradley-Conf With	113	6.3	3	Compliant

	Frome				
BISS	Conf With Bitham Bk-Conf With Lam Bk	114	5.9	3	Marginal
BISS	Conf With Lam Bk-Trowbridge	115	0.5	3	Compliant
BISS	Trowbridge-Conf With Avon	116	1.6	4	Compliant
BISS BK	Penknap-Westbury Trading Estate	117	5.2	2	Compliant
BISS BK	Westbury Trading Estate-Conf With Bit Bk	118	3.5	3	Compliant
BITHAM BK	Norleaze-Confluence with Biss	119	2	5	Compliant
BRIDEWELL WATERCOURSE	Heywood Ho-Norleaze	120	1	4	Compliant
SEMINGTON BK	Conf With Bulkington Drove W/c-Conf With Summerham Bk	124	1.5	2	Compliant
SEMINGTON BK	Conf With Sum Bk-U/s Semington	125	5	3	Compliant
SEMINGTON BK	Conf With Worton Str-Conf With Bulk W/c	123	4	2	Compliant
SEMINGTON BK	U/S Semington-Conf With Avon	126	2.8	2	Compliant
SEMINGTON BK	U/S Woodbridge Fm-Conf With Worton Str	122	2.6	3	Compliant
SEMINGTON BK	West Lavington-U/s Woodbridge Fm	121	4.7	2	Compliant
SUMMERHAM BK	Conf With Poulshot Str-Conf With Semington Bk	129	1.6	4	Compliant
SUMMERHAM BK	Rowde-Smithwick Fm	127	1.4	3	Compliant
SUMMERHAM BK	Smithwick Fm-Conf With Poulshot Str	128	3.6	3	Compliant
POULSHOT STR	Conf With Old Park W/c-Conf With Summerham Bk	130	3.8	4	Compliant
OLD PARK W/C	Devizes-Conf With Poulshot Str	132	3.8	4	Compliant
DREWSPOND W/C	Devizes-Conf With Poulshot Stream	131	3.6	4	Compliant
MILEBOURNE STR	Hurst Fms-Conf With Semington Bk	133	2.1	3	Compliant
WORTON STR	Cadley Fm-Conf With Semington Bk	136	3.1	4	Compliant
WORTON STR	Urchfont-Cadley Fm	135	6.5	4	Compliant
BULKINGTON DROVE W/C	Marston-Conf With Semington Bk	134	3.9	4	Compliant
CHALFIELD BK	Great Chalfield-Conf With Avon	137	0.9	4	Compliant
BERRYFIELD STR	U/S Bowerhill Stw-Conf With Avon	138	1.4	5	Compliant
SOUTH BK	Atworth-Conf With Avon	139	6.5		Marginal
BYDEMILL BK	Bydemill-Conf With Avon	141	4.6	4	Compliant
BYDEMILL BK	Corsham-Bydemill	140	0.3	2	Compliant
MARDEN	Blackland-Conf With Rivers Bk	143	1.6	2	Compliant
MARDEN	Conf With Cowage Bk-Conf With Avon	145	6	3	Marginal
MARDEN	Conf With Rivers Bk-Conf With Cowage Bk	144	4.8	3	Compliant
MARDEN	Ranscombe Bottom-Blackland	142	2.5	1	Compliant
COWAGE BK	Bremhill House-Conf With Marden	147	4.2	3	Compliant

	Marden				
COWAGE BK	Conf With Strings W/c-Bremhill House	146	4.8	4	Marginal
STRINGS W/C	Freegrove Fm-Conf With Cowage Bk	149	0.9	5	Significant Fail
STRINGS W/C	Lyneham-Freegrove Fm	148	0.1	4	Marginal
ABBERD BROOK	Calne Sandpit-Conf With Marden	150	1.5		Compliant
RIVERS BK	Cherhill-D/S Hayle Fm	151	3.1	1	Compliant
RIVERS BK	D/S Hayles Fm-Conf With Marden	152	0.8	3	Compliant
HONEYBALL W/C	D/S Hills Of Swindon-Conf With Rivers Bk	153	0.6	3	Marginal
SUTTON BENGER BK	Source-Conf With Avon	154	5.3	3	Compliant
BRINKWORTH BK	Brinkworth-Conf With Avon	158	5.3	3	Compliant
BRINKWORTH BK	Conf With Hancocks Water-Conf With Thunder Bk	156	6.5	3	Compliant
BRINKWORTH BK	Conf With Thunder Bk-Brinkworth	157	5.2	3	Compliant
BRINKWORTH BK	U/S Wootton Fields Fm-Conf With Hancocks Water	155	1.7	3	Compliant
HANCOCKS WTR	Source-Wootton Meadows	159	0.8	3	Compliant
HANCOCKS WTR	Wootton Meadows-Conf With Brink Bk	160	0.9	4	Significant Fail
RODBOURNE BK	Stanton St Quintin-Conf With Avon	161	7.5	2	Marginal
GAUZE BK	Bradfield Fm-Conf With Avon	163	4.7	2	Compliant
GAUZE BK	Hullavington-Bradfield Fm	162	1.4	2	Significant Fail
CHARLTON STR	Charlton-Lea	164	2.2	2	Compliant
CHARLTON STR	Lea-Conf With Avon	165	1.6	2	Marginal
TETBURY AVON	Fosseway-Conf With Sherston Avon	168	6.7	1	Compliant
TETBURY AVON	Slads Fm-Fosseway	167	5.3	3	Compliant
TETBURY AVON	Source-Slads Fm	166	2	2	Compliant
LUCKINGTON BK	Luckington Court-Conf With Sherston Avon	174	2.5	2	Compliant
LUCKINGTON BK	Luckington-Luckington Court	173	1	4	Compliant

Map 2 -River Quality Objectives for the Avon Catchment (River Ecosystem Classification)



2. Duties, powers and interests of the Agency

The Environment Agency has a wide range of interests in the areas of water management, waste management and pollution prevention and control. Whilst many of these interests are supported by statutory duties and powers, much of the Agency's work is advisory, with the relevant powers resting with other bodies such as local planning authorities. The following table therefore summarises the Agency's duties, powers and interests and their relationship to land-use planning.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Water Resources The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.	• Grant or vary water abstraction and impoundment licences on application with appropriate conditions imposed to safeguard the needs of the environment whilst allowing reasonable and justified use of available and sustainable water resources – with the aim of achieving an equitable balance between competing demands. • Revoke or vary existing licences to reinstate flows or levels to surface waters or groundwater which have become depleted as a result of abstraction. Compensation may be payable if such powers are used. • Secure the proper use of water resources through its role in water resources planning, and the assessment of reasonable need for abstractions and the promotion of more efficient use of water resources. • Monitor and enforce abstraction and impoundment licence conditions. • Issue conservation notices to direct appropriate practices with regard to water resources issues associated with exempt de-watering activities.	• The more efficient use of water by water companies, developers, industry, agriculture and the public and the introduction of water efficiency measures and suitable design and layout of the infrastructure. • Protecting the water environment from any adverse impact due to proposed major developments.	• The Agency uses its position as a statutory consultee to the planning authorities to secure conditions and agreements that protect the water environment and that encourage water conservation measures. The Agency also seeks to influence planning decisions for new development by ensuring that planning authorities allow for any lead-time required for resource development. • The Agency is committed to water-demand management and will work closely with water companies, developers, local authorities, other relevant organisations and the public to promote the efficient use of water. • The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand management measures.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Flood Defence The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.	• Control, through Land Drainage consents, development within 8 m of main river (16 m for tidal Thames and tributaries) (Water Resources Act 1991, Section 109) or construction of a structure that would affect the flow of an ordinary watercourse (Land Drainage Act, 1991 Section 23). • Produce flood risk maps for all main rivers under S105 of Water Resources Act 1991. • Undertake works to main rivers using permissive powers. • Issue flood warnings relating to main river to the public, local authorities and the police. • Consent mineral working within 16 m of main rivers.	• Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by local planning authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Supervising the maintenance of ordinary watercourses which is a local authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance.	• As a statutory consultee on planning applications within main river floodplains the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts or proposed floodplain development. • The Agency will encourage best practice, including source control measures and common standards, among local authorities and riparian owners to protect and enhance the environment. The Agency works with the civil authorities to prepare flood warning dissemination plans and supports their endeavours to protect communities at risk.
Water Quality The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.	• Issue discharge consents to control pollution loads in controlled waters. • Regulate discharges to controlled waters in respect of water quality through the issue and enforcement of discharge consents. • Issue 'works notices' where action is required to reduce the risk of pollution. • Prosecute polluters and recover the costs of clean-up operations.	• The control of runoff from roads and highways. This is a Highways Agency duty. • The greater use of source control measures to reduce pollution by surface water runoff. • Prevention and education campaigns to reduce pollution incidents.	• The Agency will liaise with local authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source control measures. As a statutory consultee on planning applications, the Agency will advise local planning authorities on the water quality impact of proposed developments.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Air Quality The Agency has a duty to implement Part 1 of the Environment Protection Act 1990.	• Regulate the largest technically complex and potentially most polluting prescribed industrial processes such as refineries, chemical works and power stations including enforcement of, and guidance on, Best Available Technology Not Entailing Excessive Cost and Best Practicable Environmental Option. • Have regard to the government's National Air Quality Strategy when setting standards for the releases to air from industrial processes.	• The vast number of smaller industrial processes which are controlled by local authorities. • Control over vehicular emissions and transport planning.	• The Agency provides data on Integrated Pollution Control processes and advice on planning applications to local authorities. The Agency is willing to offer its technical experience to local authorities on the control of air pollution. The Agency wishes to liaise with local authorities in the production of their Air Quality Management Plans. The Agency will advise and contribute to the government's National Air Quality Strategy.
Waste Management The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to public health or detriment to local amenities.	• Vary waste management licence conditions. • Suspend and revoke licences. • Investigate and prosecute illegal waste management operations. • Regulate Producer Responsibility Regulations. • Grant licences subject to conditions. • Refuse licence applications in certain circumstances.	• The siting and granting of planning permission for waste management facilities. The waste industry and local planning authorities conduct this. The Agency, as a statutory consultee on planning applications, can advise on such matters.	• The Agency will work with waste producers, the waste management industry and local authorities to reduce the amount of waste produced, increase reuse and recycling and improve standards of disposal.
Contaminated Land The Agency has a duty to develop an integrated approach to the prevention and control of land contamination, ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment.	• Regulate the remediation of contaminated land designated as special sites. • Prevent future land contamination by means of its Integrated Pollution Control (IPPC), Water Quality and other statutory powers. • Report on the state of contaminated land.	• Securing with others, including local authorities, landowners and developers, the safe remediation of contaminated land.	• The Agency supports land remediation and will promote this with developers and local authorities and other stakeholders.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Conservation The Agency will further conservation, wherever possible, when carrying out water management functions; have regard to conservation when carrying out pollution control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.	• The Agency has no direct conservation powers but uses its powers with regard to water management and pollution control to exploit opportunities for furthering and promoting conservation.	• The conservation impacts of new development. These are controlled by local planning authorities. • Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to local authorities and developers to protect the integrity of such sites or species. • Implementation of the UK Biodiversity Action Plan for which it is the contact point for over forty species and four habitats.	• The Agency supports action to sustain or improve natural and man-made assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, local authorities, conservation bodies and landowners to conserve and enhance biodiversity.
Landscape The Agency will further landscape conservation and enhancement when carrying out water management functions; have regard to the landscape when carrying out pollution control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land.	• Further conservation and enhancement of natural beauty when exercising its water management powers and have regard to the landscape in exercising its pollution control powers.	• The landscape impact of new development, particularly within river corridors. Local planning authorities control this.	• The Agency produces River Landscape Assessments and Design Guidelines which it uses when working with local authorities and developers to conserve and enhance diverse river landscapes.
Archaeology The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	• Promote its archaeological objectives through the exercise of its water management and pollution control powers and duties.	• Direct protection or management of sites of archaeological or heritage interest. This is carried out by local planning authorities, County Archaeologists and English Heritage.	• The Agency will liaise with those organisations which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
Fisheries The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.	• Regulate fisheries by a system of licensing. • Make and enforce fisheries byelaws to prevent illegal fishing. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish entrainment in abstractions. • Promote its fisheries duty by means of land drainage consents, water abstraction applications and discharge applications.	• The determination of planning applications which could affect fisheries.	• Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers and local authorities to protect fisheries.
Recreation The Agency has a duty to promote rivers and water space for recreational use.	• The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management.	• Promotion of water sports. The Sports Council and other sports bodies carry this out.	• The Agency will work with the Countryside Agency, the Sports Council, British Waterways and other recreational and amenity organisations to optimise recreational use of the water environment.

3. Environment Agency leaflets and publications

Please tick the boxes next to the publications you require. To order, cut out this page, fill in your details overleaf, and return the whole page to:

Customer Contact, Environment Agency, Rivers House, East Quay, Bridgwater, Somerset TA6 4YS

- Abstraction Licensing and Water Resources - a guide for potential abstractors ☐
- Accessing Information - the Environment Agency's Pollution Inventory ☐
- Addressing Climate Change ☐
- Agreeing Access to Water for Canoeing ☐
- Agricultural Pesticides and Water ☐
- An Environmental Vision - the Environment Agency's contribution to sustainable development ☐
- Anglers and the Environment Agency ☐
- Angling and Wildlife - golden rules ☐
- Aquatic Eutrophication (leaflet) ☐
- Aquatic Eutrophication - a management strategy ☐
- Aquatic Weed Control - best practice guidelines ☐
- Are You Doing Your Bit for the Environment? ☐
- Blue-green Algae ☐
- Buyer Beware - handling and purchase of wild salmon and sea trout ☐
- Charging for Information ☐
- Chemical Pollution - how to avoid it ☐
- Classification of Special Waste ☐
- Coarse Fisheries Strategy ☐
- Conservation Designations in England and Wales ☐
- Contaminated Land Remediation ☐
- Customer Charter - a guide to our services and standards ☐
- Disposal of Cut Vegetation - best practice guidelines ☐
- Education Resources for Schools ☐
- Enjoy Your Garden - care for our environment ☐
- Environment Agency and Land Contamination ☐
- Environment Agency and the use of Licences to Prevent Pollution ☐
- Environment of England and Wales - a snapshot ☐
- Environmental Prospectus for South West England ☐
- Farm Waste Minimisation ☐
- Farm Pollution - how to avoid it ☐
- Farm Waste Regulations ☐
- Flood Warning Information - what to do if your property is at risk ☐
- Freshwater Fisheries and Wildlife Conservation - good practice guide ☐
- Garden with Care and Protect the Environment ☐
- General Guide to the Prevention of Water Pollution ☐
- Genetic Modification and Sustainability ☐
- Groundwater Protection Policy ☐
- Groundwater Protection Zones ☐
- Groundwater Regulations ☐
- Guidance for the Control of Invasive Plants near Watercourses ☐
- Guidance Notes for Riparian Owners ☐
- Guide to Good Environmental Practice for Trading Estates and Business Parks ☐
- Habitats Directive - what it means for us and you ☐
- Have Fun, Have a Care - information for river canoeists ☐
- Home Pollution - how to avoid it ☐
- How to Reduce Water Use ☐
- Identifying Freshwater Crayfish in Britain and Ireland ☐
- Identifying Freshwater Invertebrate Life ☐
- Integrated Pollution Control - introductory guide ☐
- Landfill Directive ☐
- Lessons Learned - the autumn 2000 floods ☐

Living on the Edge - a guide for riverside owners	☐
Local Agenda 21	☐
Make Your Own Compost	☐
Making the Right Connection - avoiding water pollution	☐
Making Your Home and Garden More Water Efficient	☐
Managing Maize - environment protection with profit	☐
Managing Water Abstraction - the Catchment Abstraction Management Plan process	☐
Mink	☐
Mobile Sheep Dipping - a guide to reducing pollution risks	☐
National Eel Management Strategy	☐
Nature's Way - a guide to surface water best management practices	☐
New Packaging Regulations - how do they affect you?	☐
North Wessex Area Industrial and Commercial Waste Minimisation and Recycling Directory	☐
Oil Care Code	☐
Phytophthora Disease of Alder	☐
Policy and Practice for the Protection of Groundwater	☐
Policy and Practice for the Protection of Floodplains	☐
Ponds and Conservation	☐
Pond Heaven- how to create your own wildlife pond	☐
Preventing the Spread of Crayfish Plague in the South West	☐
Producer Responsibility Obligations - guidance	☐
Protection through Partnership - North Wessex	☐
Recovering the Cost of Pollution	☐
Safe Storage and Disposal of Used Oils	☐
Saving Water - on the right track	☐
Sheep Dipping	☐
Silage Pollution - how to avoid it	☐
Silt Pollution - how to avoid it	☐
Special Waste Regulations - technical assessment of waste	☐
Spray Irrigation - information for potential irrigators	☐
Stocking Fish - a guide for fishery owners and anglers	☐
Sustainable Urban Drainage - a guide	☐
Waste Minimisation - an environmental good practice guide for industry	☐
Water Plants - their function and management	☐
Water Pollution Incidents in England and Wales	☐
Water Resources for the Future - a strategy for South West Region	☐
What a Waste	☐
Will you be affected by the Landfill Directive?	☐
Understanding Buffer Strips	☐
Understanding Riverbank Erosion	☐
Useful Information for Angling Clubs	☐

Name.....

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Please note: The above list is a selection of Environment Agency publications, subject to availability. If you are interested in an area of our work which is not covered, please phone our Customer Contact Team on **01278 457333**.

In addition **Floods in the South West – The Story of Winter 2000**, a free 30 page colour booklet covering the South West with photographs, personal accounts of life saving rescues and factual information has just been published. Copies are available from Public Relations, The Environment Agency, Manley House, Kestrel Way, Exeter, EX2 7LQ. Tel: 01392 444000.

Further information is also available on our website: **www.environment-agency.gov.uk**.

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