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ENVIRONMENT
AGENCY

SECOND ANNUAL REVIEW
OF THE
LOWER BRISTOL AVON
CATCHMENT MANAGEMENT
PLAN
(1998)





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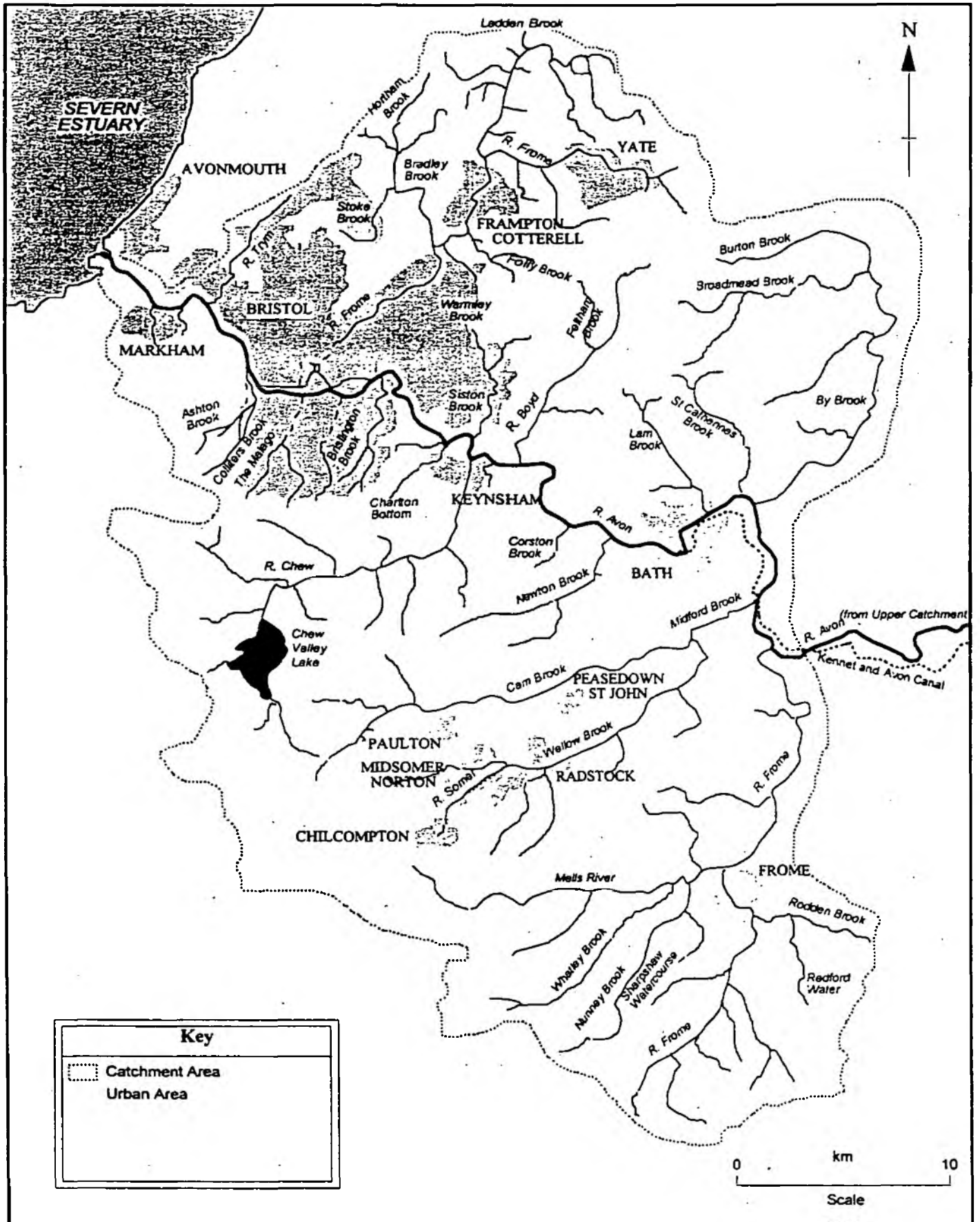
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Lower Bristol Avon Catchment



1. Introduction

This is the Second Annual Review of the Lower Bristol Avon Action Plan which was published in March 1996. It introduces the Environment Agency and summarises progress made with actions. Previous publications relating to this catchment contain more background detail, and this Review should be read in conjunction with these publications:

- Lower Bristol Avon Catchment Management Plan Consultation Report - March 1995
- Lower Bristol Avon Catchment Management Plan Action Plan - March 1996
- Lower Bristol Avon Catchment Management Plan First Annual Review - June 1997

This will be the last Annual Review for the Lower Bristol Avon Catchment Management Plan as we are working on a Bristol Avon LEAP Action Plan Consultation Draft for the combined catchment areas (Upper Bristol Avon and Lower Bristol Avon) for public consultation in February 1999.

1.1 The Environment Agency

The Environment Agency is a non-departmental public body established by the Environment Act 1995 and formed on 1 April 1996. We are sponsored by the Department of the Environment, Transport and the Regions (DETR) with policy links to the Welsh Office and the Ministry of Agriculture, Fisheries and Food (MAFF).

We have taken over the functions of our predecessors: the National Rivers Authority (NRA), Her Majesty's Inspectorate of Pollution (HMIP), the Waste Regulation Authorities (WRAs) and some parts of the DETR.

We provide a comprehensive approach to the protection of the environment by combining the regulation of air, land and water into a single organisation. We cannot work in isolation, but seek to educate and influence individuals, groups and industries to promote best environmental practice, and develop a wider public awareness of environmental issues.

Our Vision is:

- a better environment in England and Wales for present and future generations.

We will:

- protect and improve the environment as a whole by effective regulation, by our own actions and by working with and influencing others
- operate openly and consult widely
- value our employees
- be efficient and businesslike in everything we do.

Our Aims are:

- to achieve significant and continuous improvement in the quality of air, land and water, actively encouraging the conservation of natural resources, flora and fauna
- to maximise the benefits of integrated pollution control and integrated river basin management
- to provide effective defence for people and property against flooding from rivers and the sea
- to provide adequate arrangements for flood forecasting and warning

- to achieve significant reductions in waste through minimisation, reuse and recycling and to improve standards of disposal
- to manage water resources to achieve the proper balance between the needs of the environment and those of abstractors and other water users
- to secure, with others, the remediation of contaminated land
- to improve and develop salmon and freshwater fisheries
- to conserve and enhance inland and coastal waters and their use for recreation
- to maintain and improve non-marine navigation
- to develop a better informed public through open debate, the provision of soundly based information and rigorous research
- to set priorities and propose solutions that do not impose excessive costs on society.

We do not cover all aspects of environmental legislation and service to the general public. Your local authority deals with all noise problems; air pollution arising from vehicles, household areas, small businesses and small industries; planning permission (they will contact us when necessary); contaminated land issues (in liaison with ourselves); and environmental health issues.

1.2 The Catchment Steering Group

Catchment Steering Groups represent a range of interests who endorse the Consultation Report and Action Plan prior to public release. They monitor the implementation of the Action Plan and provide the Agency with specific advice on the importance of issues within the catchment. They act as a communication link between the local community, the Agency and its committees and help to promote and develop initiatives of benefit to the environment within the catchment. This Annual Review of the Lower Bristol Avon Catchment Management Plan Action Plan is reported to the members of the Lower Bristol Avon Steering Group. The Steering Group Members are:

Name	Representing
Mr Paul Hodge	Bristol Water Company
Mr Robert Floyd	NFU/CLA
Mr E D T Pugh	Industry
Mrs Audrey Lennox	Sport and Recreation
Mr Martin Venning	Wessex Water plc
Ms Vanessa Collier	Community Action
Ms Kathy Derrick	Bristol City Council
Mr J S Parker	Local Fisheries Advisory Committee/Fishing Associations Representative
Miss J Nicholls	South Gloucestershire Council
Miss A Bartaby	South Gloucestershire Council
Mr L Kimberley	Mendip District Council
Mr B Greenwood	English Nature (Somerset & Avon)
Mr J Martin	Avon Wildlife Trust
Mr T E Turvey OBE	Bristol Avon Local Flood Defence Committee
Mr Hugh Lucas	Foster Yeoman Ltd
Mr P Hale	Minerals Planning Officer North Somerset

2. Overview of the catchment

The Bristol Avon fulfils a number of functions including conveying floodwater to the sea, as a water resource, the disposal of effluents, and recreation and amenity. The river corridor provides a valuable variety of wildlife habitats, is a major landscape feature and contains a number of structures of historical and archaeological importance.

The Kennet and Avon Canal, which is managed by British Waterways, closely follows the river from Bradford-on-Avon to the centre of Bath, where it joins the river. The Lower Bristol Avon catchment has three different geological areas which generate three distinct river types in terms of gradient, flow regime, bed material, clarity of water and communities of plants and animals. The Cotswolds to the north and east of Bath form an oolitic limestone escarpment with steep interlocking valleys. The Mendip Hills are carboniferous limestone which is harder than the soft oolite of the Cotswolds, with different landscape and steeper sided gorges. The remaining areas are mainly clays such as Keuper Marl, Oxford Clay, Lias Clay and Coal Measures which tend to form the softer lowlands.

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

Industry and employment in the area is diverse. Bath and Bristol are centres of tourism and Bristol is also an important financial centre. Quarrying and its associated industries are very important especially in the East Mendips.

3. Summary of progress

3.1 Conservation

We are continuing to seek opportunities for implementing the restoration plans for the Bristol Frome Action Plan and support the work of the Cotswold and By Brook Countryside Management Project. We have completed some water-vole surveys, however a phased survey of the catchment is planned. A survey of alder trees in the Lower Bristol Avon catchment has identified that a high proportion of these alder trees are infected with a fungal root disease called 'Phytophthora' especially on the River Avon between Bath and Bristol and we are seeking to establish the extent of this problem. These actions have been forwarded to the Bristol Avon Local Environment Agency Plan Draft Consultation Report. The Somerset Frome Action Plan has been produced and we will support the local authority and other interested groups in its implementation.

3.2 Development Pressures

To ensure the Agency fulfils its role in the land use planning and sustainable development debate we have issued all Local Planning Authorities (LPAs) with plans of indicative flood risk areas as part of our role as formal advisor to the LPAs on Development and Flood Risk (Section 105 Plans).

We have an ongoing programme of producing detailed flood mapping which is targeted at areas likely to be allocated for development within the current round of Local Plan Reviews to 2011.

In conjunction with the Section 105 programme the Agency also advises LPAs on appropriate planning policies to deal with flood risk and surface water disposal.

The Agency is also represented on various technical working groups such as the House Builders Federation advising on current best practice in flood risk mitigation and source control.

3.3 Fisheries

As part of the Agency's monitoring programme, the rivers within the North Wessex area are surveyed for their fish populations, currently within a 5-year rolling programme. Within the Lower Bristol Avon catchment no rivers were surveyed in the last year. The Bristol Frome is scheduled to be surveyed during 1998/99.

The catchment supports a very good coarse fishery in the main river with mixed coarse and game fisheries in the tributary rivers. Salmon are recorded in the lower part of the river. Although no specific fisheries issues are highlighted, fisheries interests are covered and taken account of when considering the impacts of quarrying, the impacts of abstraction on river flows, and the site specific water quality issues.

The fisheries department amongst its various duties carries out fishing licence and byelaw checks, provides fisheries management advice to angling clubs and fisheries owners, undertakes stock assessments and fish rescues on rivers and stillwaters within the area of this plan.

3.4 Flood Defence

The refurbishment of the structures at Stone Gates and Fosse Gates which protect the River Frome culverts under Bristol from the Floating Harbour commenced in March 1998.

The survey of Flood Defence Assets in Bristol Avon has been completed without any major defect previously unknown being identified. The results of the survey combined with previous work on Standards of Service will be combined in the Flood Defence Management System.

Major Incident Plans covering response to flood events that exceed existing defences have been discussed in draft with the relevant Unitary Authority for Bristol and Bath. A consultant has been appointed to carry out further work on the Bristol plan due to its complexity.

Work will begin in 1998 on Flood Warning Levels of Service. Work in Bristol Avon is programmed to be completed during the year 2000.

3.5 Water Quality

During 1997 the Agency underwent a major restructuring to improve the effectiveness of the way it regulates the environment. Part of this process involved reorganising the Water Quality, Waste Regulation and Integrated Pollution Control (IPC) functions into Environment Planning and Environment Protection. Some momentum was lost during this process as jobs and working areas were modified. This is reflected in the achievement of targets. Some planned visits, such as those to farms in the Nunney Brook catchment were delayed. On the other hand there have been significant developments with respect to some targets.

For example in the Midford/Wellow Brook catchment the formation of a specific action team of Agency officers and the availability of funds for partnership projects has produced the Wellow Brook Project, with the Agency funding the Avon Farming and Wildlife Advisory Group to visit farms and give advice on best land management practice. This is an experimental initiative which should influence diffuse sources of pollution and lead to habitat improvements in the catchment.

The Agency was involved in a successful partnership with Communities Organised for a Greater Bristol and local traders at the Avonmeads Retail Park in Bristol, which led to a reduction of litter in the river corridor. It is hoped that some of the lessons learned from this partnership can be used to assist in reducing litter and sewage debris in the River Avon between Bath and Bristol and the Bristol Frome downstream of Yate.

The Bristol Avon is affected by nutrient enrichment and the DETR is currently considering whether or not to designate it a "Sensitive Area" under the Urban Wastewater Treatment Directive (91/271/EEC).

3.6 Water Resources

In the summer 1997 long term trials to maintain rivers flows in Malmesbury and at Great Somerford continued. Wessex Water, with the agreement of the Environment Agency, added extra water to the Tetbury and Sherston Avon. This additional water was pumped from groundwater stream support boreholes at Tetbury, Luckington and Standbridge. Bristol Water, for the third year in succession, reduced their abstraction from groundwater sources at Long Newton and Shipton Moyne.

The 1997 stream support trials were a success with the target flows generally maintained. Groundwater levels recovered over the 1997/98 winter. However, the wet weather meant that the system was not as stressed as it has been in previous years. Therefore no further information has been obtained on whether there would be sufficient water in the Inferior Oolite aquifer to meet all the demands placed on it under very dry conditions.

On 12 June 1997 a public exhibition was held at Malmesbury Town Hall to inform on progress within the studies and proposals for future work.

In place for 1998 the stream support trials and related initiatives will be continued:

Bristol Water will continue with their reduced abstraction at Long Newnton and Shipton Moyne.

Wessex Water will continue to operate the increased stream support in order to meet the target flows in Malmesbury and at Great Somerford.

Wessex Water will switch abstraction from Cowbridge to Rodbourne. The effect of this switch on groundwater levels will be assessed with particular emphasis being paid to the area around Daniels Well in Malmesbury.

Various management options will be assessed using the updated and calibrated MIKE SHE computer model.

The Institute of Freshwater Ecology will complete the Angling Quality Survey.

3.7 Licensing

If in the future the Agency adopts a national policy approach for the assessment of groundwater and surface water licence issues in water resources, there may be a requirement for improvements/changes in the hydrometric network. Whilst it is too early to identify these improvements/changes at present, it has been suggested that a review of the existing hydrometric network should be undertaken. It would also be considered prudent to, where necessary, promote, cost and implement solutions to improve the network and achieve improved catchment control and monitoring.

The Government are currently undertaking a review of the licensing legislation. The direction, nature and impact of this will not be clear until the final papers are placed before Parliament. This is likely to be within 5 years. We will need to be reactive to whatever occurs, but can say no more than that at present.

ACTION PLAN MONITORING REPORT

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
1 Development pressure in the catchment..							
1.1. Liaise with the local planning authorities to ensure that appropriate policies are included in Developments Plans.	Agency, local authorities	•	•	•	•	£10k (96) £10k (97) £20k (98) £30k (99) £20k (00)	The Environment Agency is currently in consultation with all Unitary Authorities to ensure that relevant planning policies to cover flood risk and surface water disposal in accordance with sustainable development guidelines are incorporated within Local Plans to 2011. Large developments - The Agency is working in close partnership with LPAs and developers to ensure large developments in the catchment are environmentally neutral or contribute to enhancing some of the area's degraded watercourses.
1.2. Liaise with planning and highways authorities, consultants and contractors to ensure protection for the water environment before, during and after construction of road schemes.	Agency, local authorities, Highways Agency	•	•	•	•	£6k (96) £10k (97) £15k (98) £20k (99)	The Agency currently negotiates with all Highway Authorities concerning the requirements for dealing with flood risk and surface water disposal. The Agency consultation includes the route planning stage up to final construction and future maintenance stage.
2 Eutrophication....							
2.1. Nutrient enrichment studies - collect chemical and biological data for the Lower Bristol Avon (LBA).	Agency	•				£32k (96) £32k (97)	We are awaiting DETR's decision on whether part of the Bristol Avon will be designated a Sensitive Area or not.
2.2. Assess relative contribution of inputs from all sources.	Agency, WWSL						Depends on the outcome of 2.1.
2.3. Develop a National Strategy for the control of eutrophication.	Agency					£50k (96)	National Strategy document on eutrophication has been submitted to DETR and is still in draft format. Publication of the final document is expected in late 1998.
2.4. Implement the National Strategy within the LBA Catchment.	Agency					Unknown	Awaiting publication of the National Strategy.
3 Pollution on farms and farm land affecting water quality....							
Identify farms causing pollution and ensure steps are taken to eliminate the polluting discharges in the following stretches:							
3.1. Nunney Brook.	Agency, farmers	•	•			£2k (96) Nil (97)	No further visits carried out in 1997. Survey work planned for 1998.
3.2. Ladden Brook.	Agency, farmers	•	•			Nil (96)	No visits in 1997 but preparatory visits have started in 1998.

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
3.3. River Chew.	Agency, farmers					£2.8k (96) £0.6 (97)	Three re-visits in the Chewton Mendip area with improvement works completed at one farm.
Investigate the causes of non-compliance with RQOs and where farms are contributing, identify farms causing pollution and ensure steps are taken to eliminate the polluting discharges in the following stretches:							
3.4. Wellow Brook.	Agency	•	•	•		£1k (96)	The Agency has initiated a partnership project with Avon Farming and Wildlife Advisory Group (FWAG) and completed biological surveys within the catchment. FWAG will offer visits to farms to give advice on best management practice for land. This should influence diffuse inputs and improve habitat and land management in general. The Wellow Brook is the priority catchment for this initiative. Visits by Agency Officers to inspect effluent systems will follow in 1998/99.
3.5. Cam Brook.	Agency					£0.4k (96)	No farm visits in 1997. The FWAG project may be extended to these catchments. No specific farm inspections planned at this stage.
3.6. Snails Brook.	Agency					£0.4k (96)	No farm visits in 1997. The FWAG project may be extended to these catchments. No specific farm inspections planned at this stage.
3.7. Leigh-on-Mendip Watercourse.	Agency						No farm visits in 1997. It is not clear what activity is affecting water quality in this catchment. Investigative work is needed.
3.8. Somerset Frome.	Agency	•	•			£0.7k (96)	Three farm sites received first-time visits in 1997 and eight sites received follow-up visits.
3.9. Continue to investigate sources of pesticide inputs to river.	Agency, pesticide users	•	•			£1k (96)	The result of investigations into reportedly high isoproturon levels in the River Chew was that no significant amounts of this pesticide were found. Best management practice with respect to pesticide usage was promoted during farm visits in the catchment.
4 Impact of urbanisation on water quality....							
4.1. Work with planning authorities to ensure that adequate silt and oil traps are fitted on highway and industrial trading estate drainage.	Agency, planning authorities					£0.5k (96)	The formation of the working party with South Gloucestershire Council has given rise to two seminars, which have promoted best practice for sustainable urban drainage more widely. Best practice has been incorporated

ACTION PLAN MONITORING REPORT

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
							into the South Gloucestershire Local Plan and European funding has been applied for. The Agency is working on a national guidance note on the subject.
4.2. Target trading estates and industrial areas with pollution prevention visits or roadshows, followed up by enforcement activity where necessary (Yate, South Bristol, Norton/Radstock).	Agency	•	•			£1.5k (96) £1.5k (97)	All sites (20) at Mill Lane Trading Estate, Radstock and all sites (20-25) at Pucklechurch Trading Estate have received pollution prevention visits. No further action has been planned for the Norton Radstock conurbation although it is likely that a few ad-hoc visits will be undertaken during summer 1998. Regular liaison has been maintained at major industrial sites.
4.3. Implement Bristol Fringe Action Plan.	Agency, local authorities, riparian owners	•	•	•		£10k (97) £10k (98) £10k (99)	Progress as funds become available - channel enhancements/habitat creation on the Ladden Brook.
4.5. Review the future funding of 'Operation Streamclean' which was started in 1992 in collaboration with Bristol City Council and Wessex Water Services Ltd. This targets wrong connections and sewerage faults.	Agency, Bristol City Council, WWSL	•	•			£46k (96)	It is hoped that funding will be secured until at least March 1999 we are seeking funding for a similar operation in AMP3. Work is underway in parts of the Malago and Trym catchments.
4.6. Liaise with and encourage local action groups e.g. Agenda 21 Environmental Forum Groups.	Agency	•				£3k (96) £0.4k (97)	We continued to work with Communities Organised for a Greater Bristol (COGB) during 1997. Notice boards were erected at Avonmeads retail park/entertainment complex providing river corridor information.
5 Unsewered areas and sewerage infrastructure....							
5.1. Unsewered area, in particular Chewton Mendip/Litton - Agency to encourage local communities, district councils, water companies and OFWAT to seek solutions.	Agency, individuals, local authorities, OFWAT, WWSL	•	•			£13k (96)	First time rural sewerage for Chewton Mendip/Litton has been identified under AMP3 and a scheme has been appraised by Wessex Water.
5.2. Condition of sewerage infrastructure/combined sewer overflows (CSO) - Agency and Wessex Water Services Ltd to continue to consult over the timetabling of Drainage Area Plan (DAP) work to resolve the situation.	Agency, WWSL	•	•			£12k (96)	Following consultation with Wessex Water a priority list of problem CSOs has been proposed for AMP3 funding.
5.3. Problems have been identified at Bath, Yate, Bristol and on the Wellow Brook. Some CSOs have been improved in these areas and other schemes are on-going. Agency to continue liaison with WWSL to identify and prioritise CSOs requiring improvement.	Agency, WWSL	•	•			£30k (96)	Following consultation with Wessex Water a priority list of problem CSOs has been proposed for AMP3 funding. Wessex Water have recently completed a sewerage improvement scheme in the Norton Radstock conurbation which will reduce sewage discharges to the Wellow Brook.

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
							Phase 1A of the Bath sewerage improvement scheme was completed in 1996 and Phase 1B is presently under construction. Proposals and priorities for Phases 2 to 5 are presently being reviewed with Wessex Water.
5.4. Problem of offensive sewage debris resulting from sewerage system overflow. Promote sewage debris reduction measures such as 'Bag It and Bin It' campaign.	Agency, WWSL	•	•				The discharge of sewage debris into the River Avon downstream of Bath is still a problem during and following spates. We are continuing to work with Wessex Water to identify and prioritise CSOs requiring improvement and Wessex Water are currently carrying out phased improvements to the sewerage system in Bath which will lead to a reduction in the amount of sewage/sewage debris discharged during storm conditions.
6 Site specific water quality issues: non-compliance with RQOs in the following stretches - investigate causes and formulate Action Plans to remedy the problems....							
6.1. Priston Stream - Northfield to confluence with Conygre Brook. Recent impoundment upstream of monitoring point reducing dilution - Agency to investigate.	Agency, landowners, farmers, WWSL	•	•			£2k (96)	The reason for non-compliance with the RQO appears to be insufficient dilution for the effluent from Priston STW. Improvements to Priston STW are proposed under AMP3.
6.3. Doncombe Brook - Upstream Marshfield STW to downstream STW. Sampling point located to avoid mixing zone from Marshfield STW.	Agency, landowners, farmers, WWSL	•	•				Need to undertake a desk study and if necessary seek improvements to Marshfield STW.
6.4. Wellow Brook - Foxcote to Longbarrow, Longbarrow to Wellow, Wellow to confluence with Lyde Brook, Lyde Brook to confluence with Midford Brook.	Agency, landowners, farmers, WWSL					£1k (96)	The Wellow/Midford Brook Action Team met regularly during 1997 to review investigative work and formulate new actions. Twenty industrial sites were visited on the Mill Lane Trading Estate, Radstock and plans to fund Avon FWAG to promote best land management practice in the catchment were finalised and biological surveys were completed within the catchment. Modelling has shown that the present consent for Radstock STW should allow achievement of RE2 in the river if water quality upstream is improved.
6.5. Winford Brook - Winford to Littleton, Littleton to confluence with the Chew.	Agency, landowners, farmers, WWSL						No specific action to date.
6.6. River Chew - Litton to upstream Sherbourne Lake, upstream Sherbourne Lake to downstream Sherbourne Lake, downstream Sherbourne Lake to upstream Chew Valley Lake.	Agency, landowners, farmers, WWSL	•	•			£2.8k (96) £0.6k (97)	See 3.1.
6.7. Leigh-on-Mendip Watercourse - Tadhill to Halecombe Quarry.	Agency, landowners, farmers, WWSL	•	•				See 3.2.

ACTION PLAN MONITORING REPORT

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
6.8. Whatley Brook - Cranmore to Leighton, Leighton to Asham Wood.	Agency, landowners, farmers, WWSL						No farm visits carried out.
6.9. Nunney Brook - Wanstrow to Cloford, Cloford to Holwell, Holwell to Southfield House, Southfield House to confluence with Mells River.	Agency, landowners, farmers, WWSL	•	•			£2k (96)	See 3.1.
6.10. Somerset Frome - Innox Hill to confluence with Mells River. Improvements to Frome STW have been made by WWSL. River reach is impacted by urban runoff.	Agency, landowners, farmers, WWSL	•	•			£1k (96)	We are seeking further improvements to Frome STW in AMP3.
6.11. Bristol Frome - Yate to Algars Manor, confluence with Ladden Brook to confluence with Bradley Brook. Failure was partly due to sewerage problems which are being remedied by construction of the Frome Valley Relief Sewer by WWSL. Agency to investigate other causes of water problems, such as runoff from trading estates.	Agency, landowners, farmers, WWSL	•	•			£11.2k total	No programmed trading estate visits in 1997 but visits planned for 1998.
6.12. Ladden Brook - Bagstone to Sheephouse Farm, Sheephouse Farm to confluence with Bristol Frome.	Agency, landowners, farmers, WWSL	•	•			£7k total	See 3.1
6.13. Exceedence of the hydrocarbon standards of the EC Surface Water Abstraction Directive at Chew Valley Lake and Barrow Reservoir. Following guidance from the DoE, (now DETR) if necessary investigate the reason(s) for the exceedences and then take actions where possible.	Agency, DoE						Exceedences of the Directive Standards cannot always be attributed to polluting discharges, and the Agency suspects that some exceedences may be due to natural compounds resulting from the breakdown of vegetation. Following concerns about the suitability of the method for analysis of Dissolved and Emulsified Hydrocarbons the method was reviewed and improved, in September 1997, to one involving UV fluorescence.
Significant non-compliance with RQOs - we will continue to investigate the cause for the failure and implement plans to secure compliance in the following stretches:							
6.15. Leigh-on-Mendip Watercourse - Tadhil to Halecombe Quarry.	Agency	•	•				See 3.2
6.16. Priston Stream - Northfield to Confluence with Conygre Brook.	Agency	•	•				See 6.1.
Marginal non-compliance with RQOs - we will continue to investigate the cause for the failure and implement plans to secure compliance in the following stretches:							
6.17. Somerset Frome - West Barn Farms to Tytherington.	Agency						Three farms have been visited in this stretch.
6.18. Whatley Brook - Cranmore to Asham Wood.							No further progress.
6.19. Nunney Brook - Wanstrow to Confluence with Mells Brook.	Agency	•	•				See 3.1.

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
6.20. Wellow Brook - Foxecote to Confluence with Midford Brook.	Agency	.					See 6.4.
6.21. By Brook - Box Brook to Confluence with Avon.	Agency						No progress. Investigation required.
6.22. Broadmead Brook - West Kington - Confluence with By Brook.	Agency						No progress. Investigation required.
6.23. Doncombe Brook - Downstream Marshfield STW to Confluence with By Brook.	Agency						Sampling procedures have been revised to ensure that valid data is collected. This data will be reviewed to determine what further action is necessary.
6.24. Conygre Brook - Farnborough to Upstream Castle Farm.	Agency						Investigation required.
6.25. Feltham Brook - St Aldams Ash Farm to Confluence with Boyd.	Agency						Investigation required.
6.26. Boyd - The Green to Golden Valley.	Agency						Investigation required.
6.27. Bristol Frome - Yate to Confluence with Ladden Brook.		.	.				See 6.11.
Non-compliance with long term RQOs we will continue to investigate the cause for the failure and implement plans to secure compliance in the following stretches:							
6.28. Somerset Frome - West Bam Farms to Tytherington.	Agency						See 6.17.
6.29. Wellow Brook - Confluence with Somer to Tynning.	Agency						Requires investigation.
6.30. Somerset Frome - Lullington to Confluence with Avon.	Agency						Requires investigation.
6.31. Wellow Brook - Welton to Confluence with Somer.	Agency						Requires investigation.
7 Impacts of quarrying on water resources....							
7.1. Investigate the cause of non-compliance and take action to resolve the problems if possible.	Agency, dischargers					£1k (96)	No known problems with water quality of groundwater. Surface water discharges monitored and action taken where necessary. The Agency continues to participate in the Mendip Quarries Environmental Monitoring Group.
7.2. The threat to the Brinsham Stream. Oppose plans to remove the stream bed by quarrying and press for a tunnel under the stream bed to join the adjacent sites.	Agency						The Agency will continue to act on a range of fronts to combat possible threats. The extensive network of observation boreholes and stream gaugings will continue to be monitored, and the data interpreted so that any impacts can be determined as soon as possible. The Agency will continue its extensive involvement in the Mineral Planning process, by this means we stand greatest chance of

ACTION PLAN MONITORING REPORT

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
							getting what we need to secure environmental protection. We will continue to use the Local Agenda 21 initiative as a vehicle for carrying the Agency's message to all stake holders in the local community, thereby aiding wider support for our aims and objectives.
7.3. Continue monitoring the Bath Hot Spring and water levels in the Mendips and other limestone aquifers.	SCC, LA, Agency, quarry producers	•	•	•	•	£25k (96)	Flow and temperature of the springs is monitored by the Agency and BANES. The results of the monitoring exercise are interpreted on a daily/weekly basis to ensure that the system is behaving with its normal range, any perturbations are investigated. A scheme exists whereby deviation from the norm can trigger investigation and possible corrective action.
8 Protecting groundwater in the catchment...							
8.2. Work with farmers on the Mendips to encourage them to produce waste management plans.	Agency	•	•	•	•	£1k (96)	See 3.1.
8.3. Encourage farmers to avoid intensively farming free-range pigs within source protection areas by education, and participation in relevant organisations.	Agency, MAFF, FWAG, Mendip Env. Forum	•	•	•	•	£4k (96)	A Bristol University research project, jointly funded by the NERC, Bristol Water and the Agency has started to look at land use and its impact on the Mendips.
8.4. Combe Down mine stabilisation infill. Continue to liaise re proposals for stabilisation of mines. Assess environmental impact statement and, as statutory consultee, comment on planning application. Monitor baseline water quality. Monitor water quality after any infilling takes place.	BANES, Agency, WWSL	•	•				No further progress.
9 Impacts of abstractions on river flows....							
9.1. Increased water abstraction for public water supply. Seek resolution to the problems associated with groundwater abstraction in the Upper Bristol Avon catchment, in conjunction with Wessex Water Services Ltd and Bristol Water (see also UBA Action Plan).	Agency, WWSL, Bristol Water	•	•	•	•		We have made proposals within the OFWAT Periodic Review for downward variation of abstraction licences that we consider necessary to resolve these problems in partnership with the water companies.
9.2. Continue liaison on the need for and timing of a detailed investigation of a pumped storage scheme for Chew Valley Lake.	Agency, Bristol Water	•	•	•	•		This is a subject that will become clearer through Bristol Water's Water Resources Plan which is under development for consideration by the Agency following a draft due for submission in June 1998.

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
9.4. Evaluate the potential for increasing the authorised abstraction from the Avon at Newton Meadows.	Agency, WWSL	•	•	•	•		Present indications are that no increased abstraction licence from the Avon at Newton Meadows will feature in Wessex Water's plan. The whole picture is however tied in with 9.1 and will be scrutinised following receipt of all water company Water Resources Plans in June 1998.
9.6. Improve the condition of the Long Pound to reduce leakage.	British Waterways	•	•	•			Programme of improvements to the Long Pound commence in the winter of 1998/99 funded from Heritage Lottery project.
9.7. Extend the back pumping arrangements to source the Long Pound from Claverton, near Bath.	British Waterways, Agency						The back pumping system to service the Caen Hill Lock at Devizes has been fully operational since Spring 1997.
9.8. The impact of perceived low flows in the St Catherines Brook. Evaluate the Phase 1 findings of the WWSL Report and consider further action.	WWSL, Agency						Wessex Water and the NRA undertook a scoping study of the perceived low flow problem. Historic data collection was completed with a report from Wessex Water's scientific section in November 1993. This was stage 1 of a proposed four-stage study. There has been little progress with this work since 1993. The need to progress this work is currently under review.
9.9. The public concern over perceived low flows in the By Brook catchment. The Agency will undertake a preliminary study with the co-operation of the Friends of the By Brook to define the nature of the problem and to make recommendations for further action as necessary. The Project aims to produce a By Brook Position Statement by the end of 1997.	Agency					£6k (97)	An independent preliminary study to define the nature of the problem and to make recommendations for further actions has been completed by consultants with the co-operation of the Friends of the By Brook. The report suggests there is a lack of data to allow a full evaluation of the catchment. Further data gathering is required on all elements of the study to further define the nature and impact of the low flow problem in the catchment. A programme of data collection is required including surface and groundwater monitoring, river macrophyte surveys and other ecological studies.
10 Improving flood defences....							
10.1. Introduce a national integrated Flood Defence Management System.	Agency	•	•				1998/99 target to justify 40% Regional Revenue expenditure using Flood Defence Management System. 1997/98 target of 20% achieved.

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Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
10.2. Undertake surveys to support flood risk advice to local planning authorities.	Agency, planning authorities	•	•	•	•	£45k (96) £85k (98) £100k (99) £75k (00)	Under the National Memorandum of Understanding the Agency is providing all LPAs with detailed flood maps to assist in the land use planning process. Stage 1, general flood maps have been provided and currently the Agency is carrying out detailed hot spot modelling of watercourses likely to be affected by future development.
11 River restoration and channel management...							
11.1. Together with our partners, continue work on the Bristol Frome Action Plan.	Various	•	•			£6k to 98, £10k (98)	Phase 2 has been completed (Ladden Brook technical studies on flood flows and decommissioning of pumping stations). Phase 3 has begun, this involves on the ground enhancements and discussions with land owners.
11.3. Distribute riparian owners guidance notes.	Agency, Parish Councils, Civic Trusts, NFU	•	•				New national guide produced. Distribution is on going.
11.4. Work with local planning authorities and others to produce enhancement schemes where opportunities arise.	LAs, Agency, Civic trusts, Wildlife Trusts, riparian owners	•	•	•	•	£5k (96) £12k (97)	Ongoing. We are working with Bristol City Council and consultants to produce action plans for the Hazel Brook/Lower Trym and Bristol City Frome. The action plans will be published in June 1998.
11.5. Work with MAFF to enable grant-aided schemes such as Countryside Stewardship and Water Fringe Options to be used to develop buffer strips.	MAFF, Agency, farmers, riparian owners					£7.5k (96)	The Agency does not promote agri-environmental schemes due to limited resources.
11.6. With partners, produce an Action Plan for the Somerset Frome.	Agency, LPA, riparian owners, Comm. Groups					£5k (96)	The Somerset Frome Action Plan has been produced and we will support the local authority and other interested groups in its implementation. Action completed.
12 Conserving river and wetland wildlife....							
12.1. Carry out desk studies of survey data on rare or threatened species.	Agency	•	•			£2.5k to date	Water-vole surveys are being carried out.
12.2. Set biodiversity targets.	EN, Agency, County Wildlife Trusts, LAs	•	•			£5k (96)	The South West Regional BAP has been produced. We will continue to contribute to local BAPS for BANES, South Gloucester, Bristol and North Somerset.
12.3. Complete River Corridor Survey of catchment and produce a map of alien species. Give advice on control measures to riparian owners and interest groups.	Agency	•	•			£2.5k to date	Study on the distribution of alien species has been completed at a cost of £2.5k. A bid has been made for Phase 2 of the survey and we are considering control measures.
12.4. Develop safe overland routes between catchments for otters.	Agency, Wildlife Trust	•	•	•			The overland route has been identified and some work has taken place.

Issues and Actions	Resp Body	97	98	99	00	Cost	Progress
13 Litter....							
13.1. Develop and implement strategy for dealing with litter on Agency owned land and property.	Agency					•	Complete except for Pulteney and Twerton sluice, part of Capital Schemes 2000/02.
13.2. Identify worst locations and liaise with local authorities to develop strategies for litter control.	Agency, LAs	•	•			£20k (97) £10k (98)	The Agency has continued to work with COGB to reduce the impact of litter in the River Avon corridor adjacent to the Avonmeads retail park/entertainment complex. Litter is still a problem on the River Avon downstream of Bath and in the Bristol Frome corridor after spates. Work is needed to develop strategies for its reduction with local authorities and others.
14 Recreational pressure....							
14.1. Liaise with local planning authorities to ensure appropriate policies are included in Local Plans.	Local authorities (LAs), Agency	•	•	•	•		Ongoing.
14.2. Continue to participate in the Lower Avon Users Consultative Committee.	Interest groups, riparian owners, LAs, Agency						Action completed. No further reporting required.
14.3. Review the recreational potential of Agency owned land within the catchment.	Agency	•	•	•	•		Ongoing.

5. APPENDICES

5.1 Integrated Pollution Control

We are the statutory authority in England and Wales for regulating the largest and most complex industrial processes which discharge potentially harmful substances to air, water and land. To do this we use a system known as Integrated Pollution Control (IPC).

We are required to ensure that the best available techniques not entailing excessive cost (BATNEEC) are used to prevent release of particular substances into the environment or where not practicable to minimise their release and render them harmless. Where a process is likely to involve releases into more than one medium, we ensure that this principle is used to ensure that the best practicable environmental option (BPEO) is adopted.

Under the Water Industry Act 1991, referrals of special category effluent for discharge to sewer from processes which are not subject to Integrated Pollution Control are managed by the Agency on behalf of the Secretary of State for the Environment.

5.2 Air quality

Air quality is an indicator of environmental quality; poor air quality can damage flora and fauna and buildings, and have significant effects on soils and water. Some pollutants, such as acidic gases, can also cause serious problems for those with asthma, bronchitis and other respiratory diseases.

We need to work closely with others if improvements are to be achieved. This is particularly important with regard to local air quality where we are only one of a number of regulatory bodies, with a role in helping to achieve the Government's air quality strategy.

We have set National targets to reduce emissions of sulphur dioxide and nitrogen oxides from Agency-regulated processes. These reductions will contribute to reducing impacts at a local level.

5.3 Radioactive substances

We are the principal regulator in England and Wales under the Radioactive Substances Act 1993. This statute is concerned with the storage, use and disposal of radioactive substances, and in particular, the regulation of radioactive waste.

We regulate the accumulation, keeping and use of radioactive materials, and its disposal, including that from licensed nuclear sites. Certificates of registration are issued for keeping and using radioactive materials and certificates of authorisation for the accumulation and disposal of radioactive waste.

5.4 Waste management

We enforce the majority of legislation which governs the management of waste generated from house-hold, commercial or industrial sources, and are also involved in ensuring that controlled wastes are transported in a proper manner by registering all carriers of waste. Wastes which are regarded as particularly hazardous are categorised as *special waste* and become the subject of a strict tracking procedure under the Special Waste Regulations 1996 to ensure that they are disposed of at an appropriate site.

We prevent pollution of the environment, harm to human health or serious detriment to the amenities of the locality from waste management activities. Sites are principally controlled by issuing waste management licences for the storage, treatment, handling and disposal of waste. Each licence contains conditions on the construction, maintenance and operation of sites, and stipulates monitoring requirements where we deem it necessary. The environment is protected by appropriate conditions which are agreed internally and circulated to external bodies as a consultation exercise prior to the issue of a licence. We actively enforce the conditions placed on a licence by regular inspection and monitoring visits to the wide range of sites, and we take action against illegal disposal activities like fly tipping.

The Department of the Environment White Paper *Making Waste Work* sets out the Government's policy framework for the management of waste. It sets out ways in which waste can be managed in a more sustainable way, and sets targets for achieving that aim.

This strategy is based on three key objectives: reducing the amount of waste that society produces, making the best use of the waste produced, and choosing waste management practices which minimise the risks of immediate and future harm to the environment and to human health.

The Producer Responsibility Regulations were introduced in 1997 to place responsibility on some businesses that handle packaging to recover and recycle certain proportions of packaging materials. This initiative will be a key tool for promoting the recovery of value from waste. It is designed to ensure that industry assumes an increased share of the responsibility for the waste arising from the disposal of its products. The target is to recover 50-65% of packaging waste by 2001.

We will play a lead role in implementing, monitoring and enforcing this legislation. Businesses will have to register with us and provide data by August 1997, start to meet interim recovery and recycling targets in 1998-99, meet an interim recycling target by 2000 and full targets by 2001. All businesses involved in the packaging chain will share the responsibility if they:

- have a turnover of more than £5 million and handle more than 50 tonnes of packaging each year during 1997-99
- have a turnover of more than £1 million and handle over 50 tonnes of packaging materials each year from the year 2000

5.5 River Quality Objectives

We manage water quality by setting River Quality Objectives which are intended to protect current water quality and future use. We use them as a basis for setting consents for new discharges and planning future water quality improvements. Our River Quality Objectives use a classification scheme known as River Ecosystem (RE) which was introduced in 1994.

RQO (RE Class)	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

The River Quality Objectives we set must be achievable and sustainable; we must be able to identify what needs to be done to meet them, and to ensure as far as practicable that water quality can be maintained at this level in the future.

Where we are unable to identify solutions or resources to resolve current water quality problems, we can also set a visionary or Long Term River Quality Objectives; we will use this visionary target as a basis for setting consents for new discharges. This will ensure that future developments will not hinder our efforts to improve water quality.

6. Glossary of Terms and Abbreviations

AMP	Asset Management Plan
AONB	Area of Outstanding Natural Beauty, designated by the Countryside Commission to conserve and enhance the natural beauty of the landscape, mainly through planning controls
BAP	Biodiversity Action Plan
BCU	British Canoe Union
CSO	Combined Sewer Overflow
DETR	Department of the Environment, Transport and the Regions
DLAP	Draft Local Action Plan
EC	European Community
EN	English Nature
ESA	Environmentally Sensitive Area
FDMS	Flood Defence Management System
FWAG	Farming and Wildlife Advisory Group
HMIP	Her Majesty's Inspectorate of Pollution, the former regulatory authority for IPC, and now part of the Environment Agency
IDB	Internal Drainage Board
IPC	Integrated Pollution Control, a system introduced to control pollution from industrial processes which could cause significant pollution to air, land and water
LEAP	Local Environment Agency Plan
LPA	Local Planning Authority
MAFF	Ministry of Agriculture, Fisheries and Food
NFU	National Farmers Union
NGO	Non Governmental Organisations
NRA	National Rivers Authority
OFWAT	Office of Water Services, the government regulatory agency for the water industry
R&D	Research and Development
RQO	River Quality Objective
RWLA	Raised Water Level Areas
SERC	Somerset Environmental Records Centre
SLA	Special Landscape Area
SSSI	Site of Special Scientific Interest of national importance designated under the Wildlife and Countryside Act 1981. Habitats, sites for individual species, geology and land forms may be designated
STW	Sewage Treatment Works
SWT	Somerset Wildlife Trust
WLMP	Water Level Management Plan
WRA	Waste Regulatory Authority, now part of the Environment Agency
WTW	Water Treatment Works
WWSL	Wessex Water Services Ltd

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