

E-A. Midlands LEAPS - Box 5
catchment management plan



**RIVER SEVERN
LOWER REACHES**
annual review
January 1997



ENVIRONMENT
AGENCY

Foreword

The Environment Agency is one of the largest and most powerful environmental regulators in Europe, responsible for regulating waste disposal to land, industrial releases to air and safeguarding and improving the natural water environment. Its creation on 1 April 1996 merged the expertise of the National River authority (NRA), Her Majesty's Inspectorate of Pollution (HMIP), the Waste Regulation Authorities (WRAs) and several smaller units from the Department of the Environment. This merger results in a more comprehensive approach to the protection and management of the environment by combining many aspects of the regulation of land, air and water. It also provides a single point of contact for its customers.

The process of catchment management planning was used by the former NRA to manage the water environment in an integrated way. Catchment Management Plans identified the uses, pressures and problems within the area and sought to resolve issues and conflicts. The objective being to balance the needs of all water users and to manage the area in an environmentally sustainable way. The Environment Agency is committed to continuing integrated planning as a principle means of achieving the overall objective of sustainable development. Local Environment Agency Plans will be the mechanism by which this will be achieved and are considered further on Page 3.

In May 1995, a Consultation Report for the River Severn Lower Reaches was launched in Gloucester. After extensive public consultation an Action Plan was produced in November 1995. This set out the work to be undertaken by the former NRA/ Environment Agency and other groups to improve the water environment over the next 5 years. This Annual Review reports on the progress made since November 1995.



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Area Manager, Lower Severn Area

Environment Agency
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ENVIRONMENT AGENCY



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Executive summary

The first year of the Action Plan has seen good progress with real improvements to the catchment. The Action Plan set 15 key objectives for the Agency and others to work towards. There has been clear progress towards all those objectives. The objectives have guided our actions and those of others in the catchment to help improve the environment in a co-ordinated way.

There were 37 issues highlighted in the Action Plan with a total of 135 actions over the 5 year plan. Of these a total of 11 have now been completed and 108 programmed specific actions are underway and on schedule. Progress has been made on all these actions. We have not progressed according to plan with 7 actions, but work will continue on them. There are 9 actions which are scheduled to start in the coming years and 1 new action has been added following consultation.

The plan will be reviewed again in January 1998.

Work on the development of a Local Environment Agency Plan will commence in April 1998 building upon the success of the Catchment Management Plan and will lead to further protection and improvement of the environment.

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Previous River Severn Lower Reaches CMP Documents

River Severn Lower Reaches Consultation Report - May 1995
River Severn Lower Reaches Summary Report - May 1995
River Severn Lower Reaches Action Plan - November 1995

Copies of the Summary Report and Action Plan are available free of charge.

If you wish to discuss any matters arising from this document or require copies of documents please contact:

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1. Vision for the catchment

In the Action Plan the former NRA set out its vision for the catchment as a series of key objectives. The Environment Agency believes that these objectives are still relevant and we are committed to working towards them through the actions set out in the CMP and through our routine work. In this review we will report on the progress towards these objectives in the last year and the steps we propose for the coming years.

- * Seeking additional safeguards to protect water supplies by submission of proposals to the Department of Environment that the River Severn and Gloucester - Sharpness Canal should be designated as Water Protection Zones.
- * Working in consultation with other authorities to manage mining activities in the Forest of Dean.
- * Ensuring that development or use of contaminated land in Cheltenham, Gloucester, the Forest of Dean and Avonmouth is accompanied by responsible remedial measures.
- * Upgrading the quality of the Rivers Chelt and Frome by sewage treatment works' improvements and enhancing the quality of the major tributary of the Severn - the Warwickshire Avon, by actions detailed in the Avon's Catchment Management Plan.
- * Seeking adequate rural sewerage systems to serve areas where pollution is evident. Support will be given to local schemes which will employ sensitive and sustainable methods of treatment.
- * Seeking a reduction of diffuse nitrate and phosphate pollution by assisting the Ministry of Agriculture Fisheries and Foods in managing Nitrate Vulnerable Zones and proposing to the Department of the Environment that the Gloucester-Sharpness Canal and the Rivers Severn and Leadon be designated as Eutrophic Sensitive Areas.
- * Managing the residual flow in the Severn at Gloucester to meet requirements for water supply, navigation and fish migration.
- * Restoring flow in the Glynn Brook in dry summers.
- * Establishing a flood management strategy with Gloucester City Council using a combination of new roadworks, redevelopment of flood plain fringes, removal of redundant structures and installation of new flood defences.
- * Providing flood alleviation works in Cheltenham in co-operation with Cheltenham Borough Council to give increased flood protection to more than 700 properties.

- * Assisting the restoration of the Stroudwater, Thames and Severn and Herefordshire & Gloucestershire Canals where this does not adversely affect other uses.
- * Seeking the return of otters to the catchment and protecting native stocks of brown trout, especially in the Forest of Dean, and crayfish in the Little Avon, from introduced species.
- * Analysing the potential of river corridors;
 - a) Promoting the use of buffer zones and targeting areas for their establishment.
 - b) Planning and implementing a programme for landscape appraisal and focusing on restoring floodplain landscape, including archaeological features.
- * Ensuring that development at Avonmouth does not reduce the present flood storage capacity or adversely affect wetland ecology by co-operation with Bristol and South Gloucestershire councils, the South Gloucestershire Internal Drainage Board and English Nature.
- * Enhancing consultation with local authorities, agencies and developers within the planning process. This includes participation in the formal planning system and via Water Level Management Plans, Coastal and Catchment Management Planning.

2. Introduction

2.1 Environment Planning

The Environment Agency has a statutory responsibility to contribute to sustainable development. As part of our contribution, we will produce non-statutory Local Environment Agency Plans (LEAPs) for the whole of England and Wales. LEAPs are integrated action plans to protect and improve the environment of an area, either by the direct actions of the Environment Agency or by the action of others. In partnership and consultation with others, we will use LEAPs to establish environmental objectives which will help to protect the resources of air, land, water, wildlife and heritage.

LEAPs will build on the strengths of CMPs and we will use LEAPs to integrate our action planning across all our areas of interest, to include air, land, water and wildlife and heritage.

The Environment Agency shares the regulation and management of the environment with others. Whilst LEAPs are the Environment Agency's Plans, their content and development will reflect these shared responsibilities. LEAPs are not statutory plans and will compliment rather than interfere with other organisations' plans such as Local Waste Plans and Local Air Management Plans.

We aim to work in partnership with local authorities, public bodies, regulated industries, interest groups and others. We will liaise with local authorities and other direct partners during the collection of information, setting of targets and development of actions. The Consultation Report will provide the focus for broader public participation and we will consult widely to ensure that every group is able to make their views known. We will publish a response to comments on the plan.

The former NRA planned to review the River Severn Lower Reaches CMP in 1999. The Agency has decided to produce a LEAP for the same area at the earliest opportunity and we will begin that process in April 1998. The development of a LEAP takes 18 months from the start to publication of the Action Plan. The timetable for the River Severn Lower Reaches LEAP is shown overleaf.

2.2 The Annual Review

An important part of the CMP process is to monitor the Action Plan to ensure that targets and actions are achieved and that the plan continues to address relevant and significant issues in the catchment in an appropriate manner. This report summarises the progress made since the publication of the Action Plan in November 1995. The Second Annual review will look at the progress made up to November 1997.

The activity tables have been reproduced as they appeared in the Action Plan. Notes on progress together with the name of an Environment Agency lead officer have been added. Issues which have been addressed and actions completed appear as *italic text*.

Timetable for the River Sever Lower Reaches LEAP

Development and production of the Consultation Report

April - December 1998

A multi-disciplinary Environment Agency working group:

- describes uses, activities and pressures
- identifies issues
- proposes a vision for the area
- suggests actions to protect and improve the environment.

During this time the Agency will work with key partners to develop ideas and share information.



Public consultation

January - March 1999

The Consultation Report will be circulated to relevant organisations and be made available to the public. The Agency will carefully consider and respond to all comments.



Action planning

April - September 1999

The Agency will work with partners to develop an integrated, costed and timetabled 5 year plan of action.



Implementation

1999 - 2004

The Agency and partners will deliver the actions set out in the plan. Progress will be reviewed annually and public reports produced. Interested parties and the general public can comment.

Annual Reviews will be published in February each year.

3. Summary of progress

3.1 Progress towards our key objectives

In the Action Plan we identified the following key objectives for the River Severn Lower Reaches for the 5 year plan period. These have guided our actions in the past year as the issues have been addressed. The following paragraphs show some of what we and others have done to progress towards these objectives. More detail is given in the activity tables in Section 4.

The objectives are highlighted in italics and examples of progress are shown as bullet points below. Many of the issues are inter-related but some are particularly relevant to specific objectives and these are listed in brackets after the progress.

Objective: Seeking additional safeguards to protect water supplies by submission of proposals to the Department of Environment that the River Severn and Gloucester - Sharpness Canal should be designated as Water Protection Zones.

Progress:

- A contract has been let to develop hazardous materials inventories for the river Severn and Gloucester-Sharpness Canal and is due for completion in July 1997.

(Key issue: 3)

Objective: Working in consultation with other authorities to manage mining activities in the Forest of Dean.

Progress:

- The Agency is working with Forest Enterprise, Forestry Commission, Forest of Dean District Council and Gloucester County Council on drift mining proposals.

(Key issue: 13)

Objective: Ensuring that development or use of contaminated land in Cheltenham, Gloucester, the Forest of Dean and Avonmouth is accompanied by responsible remedial measures.

Progress:

- As part of river improvements at Cheltenham Gas Works site investigative work on contamination has been completed.
- Remediation plans are under discussion for the Gloucester Gas Works site.

- A report has been completed on historic land contamination in the Forest of Dean. Remedial action is underway at several sites with further investigations on priority sites are proposed.

(Key issue: 12)

Objective: *Upgrading the quality of the Rivers Chelt and Frome by sewage treatment works' improvements and enhancing the quality of the major tributary of the Severn - the Warwickshire Avon, by actions detailed in the Avon's Catchment Management Plan.*

Progress:

- The consent for Cheltenham Sewage Works has been agreed. Work at Stroud Sewage Works has been agreed.
- Good progress has been made with actions in the Warwickshire Avon CMP resulting in improvements in water quality.

(Key issues: 4, 5, 6)

Objective: *Seeking adequate rural sewerage systems to serve areas where pollution is evident. Support will be given to local schemes which will employ sensitive and sustainable methods of treatment.*

Progress:

- As a result of close liaison between the Agency and local authorities first time sewerage schemes are being promoted by local authorities in several parts of catchment.

(Key issue: 9)

Objective: *Seeking a reduction of diffuse nitrate and phosphate pollution by assisting the Ministry of Agriculture in managing Nitrate Vulnerable Zones and proposing to the Department of the Environment that the Gloucester-Sharpness Canal and the Rivers Severn and Leadon be designated as Eutrophic Sensitive Areas.*

Progress:

- The Agency has undertaken extensive monitoring projects to determine the levels of nutrients. The Agency are assessing the data for designation of Eutrophic Sensitive Areas
- A project is underway on the Gloucester-Sharpness Canal.

(Key issues: 3, 4, 11)

Objective: *Managing the residual flow in the Severn at Gloucester to meet requirements for water supply, navigation and fish migration.*

Progress:

- Feasibility studies of strategies to improve public water supply from the Gloucester - Sharpness canal are underway.
- A research project has begun to identify flows required for migratory fish.

(Key issue: 20)

Objective: *Restore flow in the Glynch Brook in dry summers.*

Progress:

- *Work with Severn Trent Water Ltd to amend licences to reduce abstractions.*
- *New gauging station installed to provide better monitoring data.*

(Key issues: 22)

Objective: *Establishing a flood management strategy with Gloucester City using a combination of new roadworks, redevelopment of flood plain fringes, removal of redundant structures and installation of new flood defences.*

Progress:

- The feasibility study of Gloucester has shown that a defence scheme is not viable in isolation, but we are working with Gloucester City Council to pursue other options through the Local Plan process.

(Key issues: 25)

Objective: *Providing flood alleviation works in Cheltenham in co-operation with Cheltenham Borough Council to give increased flood protection to more than 700 properties.*

Progress:

- A feasibility study of the flood alleviation works in Cheltenham is complete. A scheme has been included in our capital works programme costing an estimated £12 M.

(Key issues: 25)

Objective: *Assisting the restoration of the Stroudwater, Thames and Severn and Herefordshire & Gloucestershire Canals where this does not adversely affect other uses.*

Progress:

- Work to maintain flow in the Stroudwater Canal (Ryeford Sluices).
- The Agency has assisted with a water resources study for the Herefordshire & Gloucestershire Canal.

(Key issues: 31, 34)

Objective: *Seeking the return of otters to the catchment and protecting native stocks of brown trout, especially in the Forest of Dean, and crayfish in the Little Avon, from introduced species.*

Progress:

- Otters - new spraint sites found in several Gloucestershire locations indicating possible breeding sites. A Management Group has been set up with British Waterways to manage a site on the Gloucester - Sharpness Canal. Otter conservation issues now considered fully in the new 10 year Countryside Stewardship agreements.
- A National Brown Trout Strategy is under preparation.
- Policies have been agreed with MAFF to protect crayfish and areas where crayfish farms will not be permitted have been designated by MAFF.

(Key issues: 32)

Objective: *Analysing the potential of river corridors;*

- Promoting the use of buffer zones and targeting areas for their establishment.*
- Planning and implementing a programme for landscape appraisal and focusing on restoring floodplain landscape, including archaeological features.*

Progress:

- Landscape appraisal carried out on the rivers Frome and Cam and on Wicksters Brook to link with the existing river corridor surveys.
- Development of river restoration and rehabilitation strategy.
- Rehabilitation of wetland habitat and channel on the River Frome at Kingstanley.

(Key issue: 28)

Objective: *Ensuring that development at Avonmouth does not reduce the present flood storage capacity or adversely affect wetland ecology by co-operation with Bristol and Northavon Councils, the South Gloucestershire Internal Drainage Board and English Nature.*

Progress:

- A drainage strategy for Avonmouth has been developed and financial contributions for its implementation have been secured.

(Key issue: 25)

Objective: *Enhancing consultation with local authorities, agencies and developers within the planning process. This includes participation in the formal planning system and via Water Level Management Plans, Coastal and Catchment Management Planning.*

Progress:

- Water Level Management Plans are being prepared in co-operation with English Nature.
 - The Agency is working closely with local authorities and others on Shoreline Management Plans.
 - In partnership with others in the Severn Estuary Strategy Group the Agency has promoted integrated management of the estuary. In particular the Agency has led the production of the Issues Report which will be published in May 1997.
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4. Activities and actions

Section 5 from the River Severn Lower Reaches Action Plan has been reproduced here. There were 37 issues in the Action Plan. The Review reports on the successful completion of some of the actions, on those actions where there is progress and where progress is less than expected. The actions represent the non-routine investment by the Environment agency and others over the five year period.

Issues

The issues are presented with a number of actions, a target timetable and the identification of responsible parties. Where possible costs have been outlined for the period covered by the plan. This does not necessarily reflect the total cost of schemes. The Action Plan and this Annual Review is produced in good faith, recognising the current priorities of both the Environment agency and other organisations, and has been developed within existing economic political constraints. Progress will depend on the resources available and competing priorities; some Environment Agency costs have yet to receive full budgetary approval.

KEY

- > Greater than
- < Less than
- = Action in the year indicated (numeric entry given if costs are known)
- U Unknown at this time
- R No additional costs to the annual budgetary provision (recurring or routine)
- £K £1000s

Changes are highlighted in bold.

A number of actions will require feasibility studies and an appraisal of options prior to work commencing. In some cases, depending on the outcome of these studies, further action may not be required. The timescales for actions may vary depending on future political change and changes within the economy.

NOTES ON ABBREVIATIONS AND ACCRONYMS

ACC	Avon County Council
AMP	Asset Management Plan
BR	British Rail
BW	British Waterways
CC	County Council
CoCo	Countryside Commission
CPRE	Council for Protection of Rural England
DC	District Council
DoE	Department of the Environment
EA	Environment Agency
EN	English Nature
FA	Forestry Authority
FAS	Flood alleviation scheme
FE	Forestry Enterprise
FP	Floodplain
FWAG	Farming & Wildlife Advisory Group
GAP	Global Action Plan
GCC	Gloucestershire County Council
GHT	Gloucester Harvour Trustees
H&GCT	Herefordshire & Gloucestershire Canal Trust
HA	Hydro Action
HMIP	Her Majesty's Inspectorate of Pollution
H&WCC	Hereford & Worcester County Council
LA	Local authority
MAFF	Ministry of Agriculture Fisheries & Food
NRA	National Rivers Authority
NFU	National Farmers Union
NVZ	Nitrate Vulnerable Zone
RASE	Royal Agricultural Society of England
RSPB	Royal Society for the Protection of Birds
STP	Sewage treatment plant
STW	Severn Trent Water Ltd
UWWTD	Urban Waste Water Treatment Directive
WLMP	Water Level Management Plan
WRA	Waste Regulation Authority

Issues list

1. Achievement of water quality objectives.
2. Extension of designated fishery reaches.
3. Protection of water supplies from River Severn and Gloucester-Sharpness Canal and designations as Water Protection Zone.
4. Impacts of Urban Wastewater Treatment Directive and designation of Sensitive Areas (Eutrophic).
5. The impact of the River Chelt on the water quality of the River Severn.
6. Impact of investments and improvements at Netheridge Sewage Treatment Plant.
7. Sewage and industrial discharges.
8. Deleted.
9. Pollution from inadequate rural sewerage.
10. The impact of pesticides on water quality.
11. Farm pollution including the effects of ammonia and nitrate.
12. Pollution risks from contaminated land.
13. Pollution from mining and quarrying in the Forest of Dean.
14. Contact water sports and relevant water quality standards.
15. Impacts of marinas and oil pollution from boats.
16. River litter.
17. Seasonal effects of blue-green algae.
18. Hempsted Landfill Gloucester.
19. Deleted.
20. Maintenance of flows in the Severn for abstraction to the Gloucester-Sharpness Canal and other environmental uses.
21. Potential effects of a Severn-Thames transfer scheme.
22. Impacts of low flows in the Leadon, Forest of Dean, Frome and Cam/Little Avon.
23. Severn Exempt Area Order.
24. Local issues relating to fish farms.
25. Major flooding from the Rivers Severn and Chelt.
26. Flood warning.
27. Floodplain management.
28. Rehabilitation of river corridors.
29. Competing requirements of river engineering and other uses.
30. Deleted.
31. Development of recreational access.
32. Protection of vulnerable species.
33. The management of the salmon and elver fisheries.
34. Canal restoration.
35. Hydropower development.
36. Deleted.
37. Water Level Management.

SUMMARY OF ISSUES



ISSUE 1 Achievement of River Quality Objectives

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Pursue achievement of short term river quality class within timescale set, by pollution prevention, liaison with public and other bodies and enforcement of pollution legislation	EA	STW Farmers BW Industry WW	150	30	30	30	30	30		Keith Wagstaff
Progress See Table 1.1 on following pages.										
2. Establish reasons for non-compliance with all long term targets during period of Plan and pursue upgrading.	EA		50	10	10	10	10	10		Keith Wagstaff
Progress <i>See Table 1.2 on following pages. Stretches in this table will be targeted for investigation to determine reasons for non-compliance.</i>										

TABLE 1.1 Stretches which were failing to meet short term targets in 1994.

River	Stretch Description	Reach (km)	River Quality Objectives						Comments
			Quality		Objectives				
			1994	1995	Short Term		Long Term		
Pool Brook	B4209 Bridge, Hanley Swan to R. Severn	3.2	RE3	RE3	RE3	☺	RE2	☹	Does not meet long term RE2 target due to a marginal dissolved oxygen failure. Hanley Swan incinerator has now closed and the Malvern STW effluent has been diverted to the River Severn. These changes may result in improved water quality in Pool Brook.
Bushley Brook	0.5Km DS of Horse Bridge to Mill Brook	4.1	RE5	RE3	RE4(1995)	☺	RE2	☹	Fails to comply with long term RE2 objective due to a significant dissolved oxygen failure. Intermittent farm pollutions are being addressed through farm visits.
Bushley Brook	Confluence with Mill Brook to R. Severn	3.8	RE4	RE2	RE3(1995)	☺	RE2	☹	
Mill/Marlbank Brook	Sansome Farm to Trib DS Welland Court	2.4	RE5	RE3	RE4(1995)	☺	RE2	☹	Poor quality arising from farm pollutions is being targeted by farm pollution prevention visits.
Marlbank Brook	Trib DS Welland Court to Bushley Brook	4.0	RE3	RE2	RE3(1995)	☺	RE2	☹	
Ripple Brook	Bow Bridge to R. Severn	2.3	RE4	RE4	RE3(1995)	☹	RE2	☹	An Environment Agency project has been proposed to look at how enhancement of physical habitat of Ripple Brook may improve water quality.
River Chelt	M5 Culvert to FB near Becketts Farm	2.2	RE5	RE5	RE4(2000)	☹	RE4	☹	Funding has been allocated under the discretionary element of AMP2 for improvements at Hayden STW. This should allow the downstream quality to meet RE4 by the year 2000.
River Chelt	FB near Becketts Farm to R. Severn	5.0	RE5	RE5	RE4(2000)		RE4	☹	
Ashleworth Brook	Wick Ridge STP to R. Severn	3.0	RE4	RE3	RE3(1995)	☺	RE2	☹	A programme of pollution prevention work will continue to reduce the impact of intermittent pollution on water quality.
Leadon	US Evesbatch Pools to FB to Hill Farm	2.2	RE4	RE3	RE4(1995)	☺	RE2	☹	Farm pollution visits are ongoing. At present Ledbury STW is performing much better than required to by the Discharge Consent and this is reflected in the improved quality downstream. The effects of development on the quality of the River Leadon are being monitored. Improvements at Dymock STW have been reflected in improved downstream water quality.
Leadon	Ledbury STP to Siddington Farm	1.5	RE3	RE3	RE4(1995)	☺	RE3	☹	
Leadon	Siddington Farm to confluence with Preston Brook	4.0	RE3	RE3	RE4(1995)	☺	RE2	☹	

Key: ☺ = Quality meets objective
 ☹ = Quality does not meet objective

TABLE 1.1 Stretches which were failing to meet short term targets in 1994 (Continued).

River	Stretch Description	Reach (km)	River Quality Objectives						Comments
			Quality		Objectives				
			1994	1995	Short Term		Long Term		
Preston Brook	FB at Laddin Farm to R. Leaddon	6.0	RE5	RE3	RE5(1995)	⊕	RE1	⊕	Improvements in effluent quality from the Westons Cider works have resulted in improved downstream water quality. There have also been discussions with STW Ltd and the district council regarding a first time sewerage scheme of Much Marcle.
Kempley Brook	Whitlocks End to confluence with Preston Brook	5.0	RE4	RE4	RE4(1995)	⊕	RE1	⊕	Quality problems associated with high unionised ammonia concentrations are being addressed by farm pollution prevention visits.
Red Brook	Confluence with Huntley Brook to R. Leaddon	2.9	RE5	RE3	RE5(1995)	⊕	RE2	⊕	Historic farm problems have now been addressed. However, low summer flows adversely affect the dissolved oxygen concentrations in the brook.
Ley Brook	FB at Round Hill to R. Severn	5.0	RE4	RE3	RE2(1998)	⊕	RE2	⊕	
River Frome Frome (Southern Arm)	Confluence with Slad Brook to Ryford Ryford to Stanley Downton STP	3.5	RE2	RE1	RE2(1995)	⊕	RE1	⊕	Improvements to the sewerage system have reduced the number of sewer overflows operating. A programme of pollution prevention visits to industrial sites is ongoing.
		2.7	RE2	RE1	RE2(1995)	⊕	RE1	⊕	
Slad Brook	Above Uplands to Stroudwater Canal	2.0	RE2	RE2	RE2(1995)	⊕	RE1	⊕	There have been water quality problems arising from local development. The situation will continue to be monitored.
Nailsworth Stream	Avening STP to Nailsworth	3.0	RE2	RE1	RE2(1995)	⊕	RE1	⊕	Now complies with long term objective due to improvements at Avening STW. Historical problems from discharge in the upper reaches resulting in high nutrient concentrations will continue to be monitored.

Key: ⊕ = Quality meets objective
⊗ = Quality does not meet objective

TABLE 1.1 Stretches which were failing to meet short term targets in 1994 (Continued).

River	Stretch Description	Reach (km)	River Quality Objectives						Comments
			Quality		Objectives				
			1994	1995	Short Term		Long Term		
Horsley Stream	Kingscote Wood to Nailsworth Stream	4.0	RE2	RE2	RE2(1995)	☺	RE1	☹	Intermittent pollution has resulted in poor quality in the lower reaches of the stream. These are being addressed through a programme of pollution prevention visits and improvements have been recorded.
Cinderford	Bilson Green Estate to FB Stockwell Green	1.9	RE4	RE4	RE4(1995)	☺	RE3	☹	Water quality problems are thought to be due to the impact of Cinderford STW and low flows in the watercourse. This will continue to be monitored and will be considered for inclusion in AMP 3 discussions..
Birches Dingle	Source at the Birches to Cannop Brook	1.5	RE2	RE1	RE2(1995)	☺	RE1	☺	
Coaley Brook	Tickshill - Hydegate Bridge to River Cam	3.8	RE3	RE2	RE2(1995)	☺	RE1	☹	
Little Avon	Southwood Farm - B4060	2.8	RE3	RE3	RE2(1997)	☹	RE2	☹	Marginally fails to meet the short term objective due to farm pollution. This is being addressed by increasing farm inspections. Officers are advising on and monitoring farm effluent management schemes and disposal of waste to land.
Little Avon	B4060 - Confluence with Ozleworth Brook	1.7	RE3	RE2	RE2(1997)	☺	RE2	☺	
Little Avon	Confluence with Dovert Brook -Hook Street (estuary)	1.4	RE3	RE2	RE2(1997)	☺	RE2	☺	
Ozleworth Brook	Nind Farm - Gatehouse	1.1	RE3	RE2	RE2(1996)	☺	RE2	☺	

Key: ☺ = Quality meets objective
☹ = Quality does not meet objective

Table 1.2: Stretches which are failing to meet their short or long term objectives in 1995.*

River	Stretch Description	Reach (km)	River Quality		
			Quality	Objectives	
			1995	Short Term	Long Term
Gloucester Sharpness Canal	River Frome to Sharpness Docks Conf. Daniels Bk to Conf. River Frome	12.5 12.5	RE3 RE3	RE3	RE2 RE3
Cannop Brook	Upstream Crompton to Jn of Cut and Cannop Bk	0.6	RE4	RE3(1995)	RE2
Westbury Brook	Longhope Bk to confluence with R. Severn	2.7	RE3	RE2(1995)	RE2
Longhope Brook	Longhope STW to Conf. with Westbury Brook	3.5	RE4	RE2(1995)	RE2
Frome (Southern Arm)	Stanley Downton STW to Conf. North Arm	2	RE4	RE2(2000)	RE3
River Leadon	Upleadon Road Bridge to River Severn FB to Hill Fm. To Conf. With Stoney Bk	12 5.6	RE3 RE3	RE2(1995) RE2(1995)	RE2 RE2
Red Brook	Taynton Court/Drews FB to Huntley Bk	2.4	RE3	RE2(1995)	RE2
Huntley (Tibberton Brook)	FB at Merrimans to Conf. with Red Bk	4.4	RE3	RE2(1995)	RE2
River Cam	Waterend Farm to Glow/Sharpness Canal Coaley STW Outfall to Waterend Farm Upstream Listers to Coaley STW Outfall Below Dingle Farm to Upstream Listers	3.6 1 5 4.5	RE4 RE4 RE2 RE2	RE3(1995) RE3(1995) RE1(1995) RE1(1995)	RE3 RE3 RE1 RE1
Daniel's Brook	US Brookthorpe to Glos/Sharpness Canal	5.1	RE3	RE2(1995)	RE2
River Twyver	Tredworth to Conf. with River Severn	5.5	RE4	RE2(1995)	RE2
Wooton Bk	Oxstalls Campus to Horsebere Bk. Below Trading Est to Cole Br Gloucester	2.6	RE3 RE3	RE2(1995) RE2(1995)	RE2 RE2
Hatherley Bk	Conf. Innesworth Bk to R. Severn Innesworth STW to Innesworth Bk Fiddlers Green Lane to Innesworth STW	2.5 1.5 6	RE6 RE3 RE3	- RE2(1995) RE2(1995)	RE5 RE2 RE2
Leigh Brook	Coombe Hill to R. Chelt	5	RE3	RE2(1995)	RE2
Pool Brook	Hanley Castle to B4209 Br Hanley Swan	1.8	RE3	RE2(1995)	RE2
Mere Brook **	Us of Gilberts End to Pool Brook	2.5	RE6	RE2(1995)	RE2
Madresfield Bk**	Rd Br at Madresfield to R. Severn	4.3	RE5	RE2(1995)	RE2

Notes: * Information based upon 3 years data up to and including 1995 which is the last whole year of data.

** Failures due to on-off pollution incidents.

ISSUE 2 Extension of designated fishery reaches

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
Review designations under the EC Freshwater Fish Directive to ensure that designated stretches reflect fishery use and resolve mis-matches between actual fishery status and water quality.	EA		6	3	3					Keith Wagstaff
Progress Several river stretches have been proposed for designation. They will be submitted to the Department of the Environment in 1997.										

ISSUE 3 Protection of water supplies from the River Severn and Gloucester - Sharpness Canal and designation as Water Protection Zone

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Feasibility study to consider designation of R. Severn and Gloucester-Sharpness Canal as Source Protection Zones	EA	DoE BW	43	3	40					Keith Wagstaff
Progress A contract has been let to consultants and the initial report will be available by July 1997.										
2. Install additional automatic water quality monitors at Kempsey and Slimbridge.	EA		100	----	----	(-----)				Keith Wagstaff
Progress Monitor installed at River Cam confluence with the Gloucester-Sharpness Canal at Slimbridge. The original site proposed for a monitor at Kempsey is no longer available. An alternative is being investigated and installation is likely in year 1997/98. The Agency is in discussion with British Waterways about sharing monitoring data. Good progress has also been made with installing a monitor at Pixley.										
3. Establish targeted programme of inspections of potentially polluting premises and act on deficiencies identified.	EA	Industry Farmers	30			10	10	10		Keith Wagstaff
Progress Key areas targeted include timber treatment processes alongside the Gloucester-Sharpness Canal. These have resulted in several improvements to pollution prevention measures. Main programme to follow from Action 1 and the identification of potentially polluting sites.										

ISSUE 3 Protection of water supplies from the River Severn and Gloucester - Sharpness Canal and designation as Water Protection Zone (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
4. Initiate targeted publicity campaigns to mobilise pollution prevention effort in Agriculture and Industry.	EA	Farmers Industry BW	20			10	5	5		Keith Wagstaff
Progress Initiative to begin in April 1997.										
5. Liaise with Planning Authorities and Developers to minimise pollution risk from development.	EA	LAs Developers STW	60 (estimate will be demand led)	12	12	12	12	12	Ongoing	Keith Wagstaff
Progress The Agency has successfully liaised with local authorities and developers to minimise pollution risk from development. However, some local authorities have permitted development where there is risk of pollution which we believe is too great but which they considered acceptable. We have produced a video on pollution prevention measures entitled "Nature's Way - designing for pollution prevention" which is available free of charge.										

ISSUE 4 Impacts of Urban Wastewater Treatment Directive and designation of Sensitive Areas (Eutrophic)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Monitor Severn Trent Water Ltd implementation of agreed capital programme of specified timetable	EA	STW	EA = R	-----	-----	-----	-----	-----		Keith Wagstaff
Progress Initial slippage on timetable owing to STW Ltd not submitting application for discharge consents. Efforts being made on both sides to remedy the situation.										
2. Review consents in line with agreed programme	EA	STW	10	2	2	2	2	2		Keith Wagstaff
Progress The Consent for Lydney STP has been reviewed and this will be issued shortly.										
3. Gather data to enable decisions to be made on proposed Sensitive Areas (Eutrophic)	EA		10	5	5					Keith Wagstaff
Progress Data is being assessed on the Rivers Severn and Leadon and the Gloucester-Sharpness Canal. Decision to be made by DoE late 1997.										
4. Carry out Eutrophication Project to assess impact and benefits of phosphorus removal from sewage works in Sensitive Areas (Eutrophic).	EA		U		-----	-----	-----			Keith Wagstaff
Progress Project on-going.										

ISSUE 5 The impact of the River Chelt on the water quality of the River Severn

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Liaise with Severn Trent Water plc to define optimum schemes to upgrade quality in line with AMP 2 commitments	EA	STW	STW = > 6,000 (cf Issue 4)	-----	-----	-----	-----	-----		Keith Wagstaff
Progress Revised consent for Hayden STP has been issued. Construction work proceeding, completion expected 1999										
2. Assess need for phosphorus removal at Cheltenham STP during 1995/6 for future review for proposed Sensitive Area (Eutrophic) designation for the River Severn and Gloucester-Sharpness Canal	EA		4	2	2					Keith Wagstaff
Progress The River Severn and Gloucester-Sharpness Canal will be proposed to DoE as a Sensitive Area (Eutrophic) under the European Community Urban Waste Water Treatment Directive.										

ISSUE 6 Impact of investments and improvements at Netheridge Sewage Treatment Plant

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Monitor completion of new works and improvements in effluent quality	EA	STW	R							Keith Wagstaff
Progress Work complete. Monitoring is part of our routine work. Tighter Consent Conditions in place from 1/1/96										
2. Continue to monitor effect of improvements to estuarine water quality	EA		R							Keith Wagstaff
Progress Monitoring of the Gloucester (Netheridge) sewage effluent shows that there is a significant improvement leading to a better estuary quality. Monitoring will continue.										
3. Assess effects on migratory fish	EA	Anglers Commercial Fishing	U	----	----	----	----	----		Alan Churchward
Progress Mortalities have reduced significantly and we believe that the few remaining mortalities are due to natural causes.										
4. Extra investment in water quality monitoring at Minsterworth	EA		20			20				Keith Wagstaff
Progress To be undertaken in 1997.										

ISSUE 7 Sewage and industrial discharges

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Recommend appropriate controls on new development in Ledbury and impose controls on Ledbury STP to minimise potential pollution.	EA	STW Developers Malvern Hills D C H&G CT	EA = 3	1	1	1				Keith Wagstaff
Progress We comment on planning applications and advise Malvern Hills DC on their potential to increase potential pollution. We have been monitoring discharges and are in discussions with STW Ltd. We are considering recommending Ledbury STP for inclusion in future investment programmes by STW.										
2. Assess need for phosphorus removal at Coaley STP during 1995/6 for future review of Sensitive Area (Eutrophic) designation for the Gloucester-Sharpness Canal	EA		2	1	1					Keith Wagstaff
Progress The Gloucester-Sharpness Canal will be proposed to the DoE as a Sensitive Area (Eutrophic) under the European Community Urban Waste Water Treatment Directive in 1997. The DoE will decide on whether the watercourse should be designated. The need for phosphorus removal will depend on the outcome of this. The need for phosphorus removal at Stanley Downton STP was also considered as part of this review.										

ISSUE 8 Upstream impacts on water quality in the River Severn

This issue was deleted from the Action Plan as it is covered in the River Severn Middle Reaches CMP and the Warwickshire Avon CMP

ISSUE 9 Pollution from inadequate rural sewerage

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Promote action by District Councils and others to provide first time sewerage	EA	LAs (DCs) STW	R	-----	-----	-----	-----	-----		Keith Wagstaff
Progress The Environment Act 1995 has changed the legislation on this matter and the Agency will be using this legislation to reduce pollution. Applications have been made to STW Ltd for provision of sewerage for Much Marcle, Deblin's Green, High Green and Green Street.										
2. Feasibility study by Stroud District Council at Claypits, Arlingham and Longney.	Stroud DC		10	-----	-----					Keith Wagstaff
Progress Stroud DC have completed the feasibility study. As a result they have applied to STW Ltd for sewerage to be provided under Section 101 A of the Water Industry Act.										
3. Explore feasibility of alternative sewage treatment methods e.g. reed-beds	EA	STW Developers DCs	R	-----	-----	-----	-----	-----		Keith Wagstaff
Progress Several reedbed and wetland water treatment systems have been installed or proposed in the catchment and their performance is being monitored.										

ISSUE 10 The impact of pesticides on water quality

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	PROGRESS
	LEAD	OTHER								
1. Target farm visits and inspections. Prosecute polluters when found	EA	Farmers ADAS STW	Cf. Issue 3 (3)	----	----	----	----	----		Keith Wagstaff
Progress Farm visits are undertaken as part of day to day pollution prevention work and farmers are advised on methods of reducing pollution risks from pesticides.										
2. Continued monitoring of eels in the catchment for Dieldrin etc.	EA	MAFF	2.5	0.5	0.5	0.5	0.5	0.5		Keith Wagstaff
Progress Existing programme maintained. Results indicate declining pesticide concentrations. A new initiative will begin in 1997/98..										

ISSUE 11 Farm pollution including the effects of ammonia and nitrate

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Maintain targeted farm inspections(including Effluent Management Plans) and identify remedial action needed	EA ADAS	Farmers	Cf. Issue 3 (3)	----	----	----	----	----		Keith Wagstaff
Progress Inspection programme maintained. There has been a substantial reduction in farm pollution incidents this year. A new initiative will begin in 1997/98.										
2. Serve Notices under 1991 Farm Waste Regulations to secure remedial action	EA	Farmers	R	----	----	----	----	----		Keith Wagstaff
Progress Notices have been served as part of day to day work.										
3. Prosecute identified polluters	EA		R	----	----	----	----	----	Ongoing	Keith Wagstaff
Progress The number of farm pollution incidents have declined but we still prosecute polluters and prosecutions have been brought in the last year.										
4. Monitor effectiveness of Nitrate Vulnerable Zones in reducing nitrate in local watercourses and groundwater	EA MAFF	STW	R	----	----	----	----	----	Study & review	Keith Wagstaff
Progress Data is being collected and will be used to monitor the effectiveness of the NVZ designation. A Nitrate Directive review will be carried out in 1997.										

ISSUE 12 Pollution risks from contaminated land

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Recommend planning conditions and secure associated Section 106 obligations on redevelopment of affected sites	EA	Developers LAs	R	----	----	----	----	----	Ongoing	Keith Wagstaff
Progress The Agency has been closely involved with proposals to redevelop contaminated land, resulting in improved designed and reduced pollution risks. Examples include Tommy Taylors' Tip at Cheltenham and Gloucester Gas Works.										
2. Encourage engineering and waste management solutions	EA	Land-owners Developers	R	----	----	----	----	----	Ongoing	Keith Wagstaff
Progress At the former Gloucester Gas Works site and sites in the Forest of Dean work has been undertaken by landowners to reduce pollution from contaminated land.										
4. Extend database of information on existing contaminated land sites	EA	LAs	2.5	0.5	0.5	0.5	0.5	0.5	Ongoing	Keith Wagstaff
Progress A project on contaminated land and its possible effects upon water quality is underway in the Forest of Dean.										

ISSUE 12 Pollution risks from contaminated land (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
5. Recommend environmental assessment and scope of study on significant planning applications concerning contaminated land	EA	LAs Developers	U	----	----	----	----	----	Ongoing	Keith Wagstaff
Progress Environmental Assessments have been recommended where appropriate.										
6. Implement water quality survey of rhines around Severnside	EA		22.4		----	----				Keith Wagstaff
Progress No progress to date. We are working to develop a joint strategy to address water quality and waste regulation issues.										

ISSUE 13 Pollution from mining and quarrying in the Forest of Dean

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Enforce legislation for discharges to controlled waters, including underground waters, where justified by available evidence	EA	Mining Companies Forestry Enterprise Landowners	R	-----	-----	-----	-----	-----	Ongoing	Keith Wagstaff
Progress See Issue 12 Action 4.										
2. Liaise with companies to secure improved pollution prevention measures	EA FE		Cf. Issue 3 (3)	-----	-----	-----	-----	-----		Keith Wagstaff
Progress Visits are undertaken as part of day to day pollution prevention work and companies are advised how to reduce pollution risks from chemicals.										
3. Assess possibility of remedial measures to the riverbed habitat, including removal of iron-contaminated substrate	EA	Mine Owners	U		-----					Keith Wagstaff
Progress Project being developed at Norchard's Drift.										
4. Support the clean up of pollution threat from illegal waste dumping in mine shafts at Sling.	Deputy Gaveller Los	EA LAs	U	-----	-----					Keith Wagstaff
Progress										

ISSUE 14 Water contact sports and relevant water quality standards

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Education on problems of contact sports in relation to water quality	LAs (Public Health)	Sports Council Recreational Groups (e.g. Canoe Union)	R	----	----	----	----	----	Ongoing	Keith Wagstaff
Progress District councils provide general and specific advice as required. No specific action by the Agency.										
2. Identify Water Quality standards for contact sports	EA									Keith Wagstaff
Progress There are national discussions about a review of the Bathing Water Directive <i>to include standards for contact sports.</i>										

ISSUE 15 Impacts of marinas and oil pollution from boats

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
Monitor impact of boat standards regarding oil storage and implementation of Waterways Act 1995.	EA BW GHT		2.5	0.5	0.5	0.5	0.5	0.5	Ongoing	Keith Wagstaff
Progress Boat standards are not yet fully implemented.										

ISSUE 16 River litter

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Better security at industrial sites to prevent vandalism	Site Owners		U	----	----	----	----	----		Keith Wagstaff
Progress Pollution prevention staff have advised site operators to improve security as part of pollution prevention visits. For example, by advising on fencing of drum storage areas to prevent them being thrown into the river.										
2. Educate and organise preventative action: a) site specific b) set up catchment forum to address problem.	EA LAs Tidy Britain Group	Police Local Groups BW	U R	----	----	----	----	----		
Progress We have undertaken litter clean-ups on numerous sites, including 2 lengths of the Stroud Canal and small fly-tipping sites adjacent to rivers and streams. We have encouraged supermarkets to introduce deposit systems for their trolleys to reduce the number thrown into watercourses. We are developing a monitoring programme to measure visual and smell pollution from litter. No progress has been made on the setting up of a forum.										
3. Change in legislation to clarify responsibilities	EA	LAs	R	----	----	----	----	----		
Progress New legislation has been introduced regarding producers' responsibility for packaging materials.										

ISSUE 17 Seasonal effects of blue-green algae

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Continue to monitor all reported occurrences and notify interested parties when reportable levels found	EA	Landowners LAs BW	R	----	----	----	----	----		Keith Wagstaff
Progress We respond to reports of Algae and have established liaison procedures with local authorities. We have produced a leaflet for the public.										

ISSUE 18 Hempsted Landfill Gloucester

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
<i>Continue to regulate the site to ensure compliance with appropriate standards.</i>	<i>EA</i>	<i>Site Owner</i>	<i>R</i>	-----	-----	-----	-----	-----		Paul Quinn Keith Wagstaff
Progress A treatment plant has now been installed to treat all leachate generated from the landfill prior to discharge to the Severn Estuary, regulated by a Discharge Consent under the Water Resources Act 1991.										

NOTE

This issue has been reworded as a result of the creation of the Environment Agency which includes the responsibilities of the former NRA and WRA identified in the original issue. A cross functional team has reviewed the existing working plan/ licence, and are now in negotiations with The Waste Co. (and their likely successors) to effect the production of a revised working plan and licence. The aim is to ensure that the working plan/ licence reflects current day best practice and standards such that the site can be operated so as to prevent pollution of the environment, harm to human health and serious detriment to the locality.

ISSUE 19 Impacts of large industrial plant. This issue will be dealt with in the Severn Estuary Action Plan

ISSUE 20 Maintenance of flows in the Severn for abstraction to the Gloucester - Sharpness Canal and other environmental uses

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
The actions in this issue aim to increase the flow to the upper estuary during periods of low flow, maintaining adequate water quality and flow for fish migration. This is a long term strategy with small incremental improvements. Associated with the aim is the better scientific understanding of the flows required.										
1. Review of operation of Llyn Clywedog and Shropshire Groundwater to provide required flows at Gloucester	EA	BW	30			----				Roger Wade
Progress This is now a regional initiative to compare options for maintaining flows. Project 1997/98.										
2. Feasibility study of options to include a) The use of Gloucester - Sharpness Canal to store water for use during periods when pumping at Gloucester is restricted b) Bankside storage equivalent to 5 days of the Purton abstraction and options for transfer from the River Frome. c) River storage in the River Severn by adjustment of weirs at either Maisemore, Llanthony, Upper Lode or a tidal exclusion barrier below Lower Parting	EA EA EA	BW Bristol Water LA LA GHT H&G CT LA	30	---- ----	---- ----	 ----	 ----	 ----	 ----	Roger Wade
Progress a) W S Atkins have completed a report on the use of the canal to store water, and an operation agreement has been reached. b) Included as preliminary feasibility in W S Atkins report. c) Joint report has been produced by Gloucester Harbour Trustees, Environment Agency, British Waterways, Bristol Water, Gloucester City Council, Hereford & Gloucester Canal Trust and other navigation interests. Further study by H R Wallingford due to commence 1997.										

**ISSUE 20 Maintenance of flows in the Severn for abstraction to the Gloucester - Sharpness Canal and other environmental uses
(continued)**

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
3. Installation of new flow monitoring site at Deerhurst	EA		214	-----					-----	Roger Wade
Progress Gauging station has now been installed.										
4. Identification of flows required to protect migratory fish.	EA		30	-----	-----					Roger Wade
Progress A R&D project is being undertaken to identify flows required for migratory fish. Report due June 1997.										
5. Calibration of estuary model	EA		20	10	10					Roger Wade
Progress A new model has been produced in the W S Atkins report.										
6. Investigate relationship of river levels to conservation meadow SSSIs.	EA		20			-----				Roger Wade
Progress On schedule for 1997/98.										

ISSUE 21 Potential effects of a Severn - Thames transfer

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Appraisal of environmental implications of the scheme for the Severn.	EA LAs	BW	20		----					Roger Wade
Progress Studies have been undertaken by Thames Region of the Agency.										
2. Investigations into Biology and Chemistry of Severn to assess impact on Thames	EA		R		----	----				Roger Wade
Progress See above.										
3. Promote best use of water resources	EA LAs GAP		20		----					Roger Wade
Progress A lower water use garden was created at the Three Counties Show this year. The Agency is also looking into the possibility of joining with the National Trust to create a similar small area of garden at one of their gardens which opens to the public in Gloucestershire area.										

ISSUE 22 Impact of low flows in the Leadon, Forest of Dean, Frome and Cam/ Little Avon

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Leadon (Glynch Brook) a) Provide compensation borehole b) Reduce licensed quantity in unit <i>c) Provide new flow measurement capacity to Glynch Brook</i>	EA STW		35	-----	-----	-----	-----	-----		Roger Wade
Progress a) and b) An advert has recently been made by Severn Trent Water Ltd to reduce their overall licence quantity and produce compensation flow to the Glynch Brook - the Agency are waiting to receive the application and will then proceed with the variations to the licences. c) Gauging station has now been installed.										
2. Forest of Dean a) Provide new flow measurement on River Lyd possibly in association with a hydropower scheme	EA		U			-----	-----			Roger Wade
Progress On target for 1998/99.										
3. Frome a) Investigation into perceived low flows in upper Frome b) Operating agreement with landowners to control flows to Canal and River.	EA EA Land-owners	BW CCT	EA = 25 EA = 30		-----		-----			Roger Wade
Progress a) Not due for completion until 1998/99 but may be brought forward as a number of complaints have been received and the canal study needs to be set up. This will also now incorporate a review of hydropower in the Frome Valley. (see Issue 35). b) Report commissioned and is due for completion at the end of 1997.										

ISSUE 22 Impact of low flows in the Leadon, Forest of Dean, Frome and Cam/ Little Avon (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
4. Little Avon										
a) Conduct seasonal flow monitoring investigations and compare with historical records:fish farm gauging and appraisal of historical data.	EA		5		----					Roger Wade
b) Ensure all licence abstractions operate within specified conditions	EA		R	----	----	----	----	----	Ongoing	
c) Conduct aerial surveys to check for non-licensed abstractors	EA		1		----	1				
Progress a) Gauging data obtained from fish farms in 1996 did not highlight any non compliance with abstraction/consent licences. This is consistent with historical data. Compensation flows at Nind Fish Farm have been significantly above minimum requirements when measured. The suitability of Berkeley flow measuring station in its current state is under review, report due for completion Feb. 97. Ozleworth Brook flow measuring station is also being checked for accuracy. b) Auditing is continuous as part of a rolling programme. All licences have now been visited in the catchment. c) Surveys completed for 1996 - no illegal abstractions identified. Repeat survey for 1997 requiring additional £1k.										

ISSUE 23
Severn Exempt Area Order

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. EA to review policy of exempt area to support proposals for legislative changes	EA		R		----					Roger Wade
Progress Report produced by Upper Severn Area which is currently under review.										

ISSUE 24
Local issues relating to fish farms

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Review of flow management practices - consents and field visits in Little Avon Catchment	EA		1		----					Roger Wade
Progress Flow audits on the 16 sites holding a consent to discharge where volumetric rates are >20m ³ /day have been undertaken. Site visits to STW Ltd have included checks to obtain storm overflow settings, flows to full treatment and population equivalent flow rates have been estimated to obtain current dry weather flow. Each site has complied with its consent. Investigations are continuing at a number of sites including Oldbury Power Station, Leyhill Prison and Wickwar Quarry.										
2. Chemical & Biological survey upstream & downstream of fish farms to determine any change in water quality Sites for Action: Ozleworth Brook	EA		3	----	----					Andy Gardner
Progress Routine chemical sampling of the Ozleworth Brook upstream and downstream of each fish farm, along with audit samples of the consented discharges have continued with early indications that the fish farms are complying with their consents and are having a minor impact upon the Brook										

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Complete investigation of possible flood alleviation works at: a) <i>Upton-upon-Severn</i> b) Kempsey	EA	GHT	20 630	----		£30K		----		Paul Bailey
Progress a) Scheme not financially viable. Public meeting held 1995 to explain outcome. b) A feasibility study is underway, considering the costs and benefits of the scheme. Estimated costs for work as shown.										
2. Investigate flood alleviation proposals for Gloucester	EA	LAs GHT	U	----						Paul Bailey
Progress Flood alleviation scheme not economically viable in isolation. Situation being kept under review in the context of the Gloucester City Local Plan and Planning applications.										
3. Complete Severn Tidal Defences Improvement Scheme in accordance with EA capital works programme agreed by Regional Flood Defence Committee	EA		11,000	----	----	----	----	----	Ongoing	Paul Bailey
Progress Pridings Phase 2 and Weir Green Schemes completed during 1995/96.										

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/2 000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
4. Complete designation of Chelt through Cheltenham as "main river"	EA	LAs MAFF	R	----	----					Paul Bailey
Progress Chelt designated Main River. No further action necessary.										
5. Develop flood alleviation scheme on River Chelt through Cheltenham	EA	Cheltenham DC	12,197	66 (8)	----	----	----	----	To 2006	Paul Bailey
Progress Feasibility study underway with public exhibition of options scheduled for Feb/March 1997. The schemes included in capital works programme. It will be carried out in five phases to 2006. Costs have been revised as a result of the on-going feasibility study.										
6. Protection of rhine system.	SGIDB		R	----	----	----	----	----	Ongoing	Paul Bailey
Progress SGIDB have developed a drainage strategy for Avonmouth and have secured financial contributions for its implementation.										
7. Protection of available storage capacity for flood waters in tide-lock conditions.	SGIDB		R	----	----	----	----	----	Ongoing	Paul Bailey
Progress See above.										

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Complete improvement of existing flood warning scheme	EA		R	----	----	----	----	----		Paul Bailey
Progress Improvements have been identified, but progress has been overtaken by the national flood warning project. The flood warning project in the remaining 4 years allows for both improvements and extensions.										
2. Investing etc. in extension of flood warning scheme to areas not currently covered	EA		R		----	----	----	----		Paul Bailey
Progress No progress yet - very few areas are likely to be identified.										
3. Develop new tidal flood warning scheme for estuary	EA		U	----	----	----	----	----		Paul Bailey
Progress A preliminary list of properties at risk has been prepared but progress has been delayed due to flood warning project. FLOODCALL is a recorded telephone system which informs people of flood conditions and other details including the general situation for tides and winds in the estuary.										
4. Revise dissemination system to take into account changing role of police in flood warning	EA	Police	U	----	----					Paul Bailey
Progress Revised dissemination arrangements came into force on 1 September 1996 including recorded message service FLOODCALL.										

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Accurate definition of the floodplain for River Frome	EA		118	----						Paul Bailey
Progress Survey and modelling completed. Definitive maps in preparation.										
2. Promotion of Buffer Zones particularly in areas of arable farming. Leadon, Ell Brook, Swilgate, Normans Brook, lower reaches of Cam, Chelt and Frome.	EA		U	----	----	----	----	----		Alan Churchward
a) Identify framework for action	EA	FWAG RASE	U	----	----					
b) Demonstration Project at Royal Agricultural Showground, Stoneleigh	EA		12	----						
c) Develop strategy for individual river corridors	EA	Los, MAFF CoCo, NFU FWAG, EN Wildlife Trusts	U	----	----					
Progress Forms part of the river rehabilitation work. See actions issue 28.										
3. Promote Managed Retreat.	EA MAFF Berkeley Estate EA	Land-owners Co Co EN IDBs	R	-----	(-----)					Paul Bailey
a) Conclude management agreement with Berkeley Estate.				-----	-----	(-----)	(-----)	(-----)		
b) Identify other potential sites.										
c) Implement where possible										
Progress a) Agreement in principle has been reached. Terms to be finalised on completion of reinstatement works. b) One other potential site identified. c) Implementation to follow as appropriate.										

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
4. Restore floodplain landscape:										Alan Churchward
a) Identify pressured habitats and locations e.g. saltmarsh, wet grassland, reedbed.	EA	MAFF EN IDBs	U	-----	-----					
b) Identify sites where floodplain landscape can be reinstated e.g. planting and drainage guidance and maintenance	EA	MAFF Landowners EN, CCs	U	-----	-----					
c) Increase awareness of the character and value of floodplain landscape, e.g. leaflet/publication	EA	CCs, LAs CPRE	U			-----	-----			
d) Implement landscape reinstatement projects on FP reaches of Cam, Frome, Chelt.	EA	Landowners LAs	U					-----		
Progress a) Areas identified through landscape appraisal, for example on the River Chelt. b) Part of the river rehabilitation project. See actions in issue 28. c) d) Future work.										
5. Investigate removal of redundant structures at Gloucester. (Cf Issue 25.2)	EA	Gloucs City & Councils, BR, Landowners	U	-----						Paul Bailey
Progress Some progress involving compensatory works connected with the proposed Gloucester South Western Bypass where it will cross the Severn flood plain. Study being prepared to investigate options using the physical model of the River Severn operated by H R Wallingford. The Agency and Gloucester City Council are promoting this jointly.										

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
Develop terms of reference in the following areas:										
1. Landscape/Visual Quality a) Plan Landscape Appraisal programmes b) Implement c) Consult with all relevant agencies and authorities, e.g. CC, LAs, FA to establish guidelines and policy relating to rehabilitation	EA	LAs Conservation Groups/ interested parties BW FA FWAG	EA =50	----	----					Alan Churchward
Progress: Detailed landscape appraisal carried out on Rivers Chelt, Cam, Frome and the Wicksters Brook and Ripple Brook. Consultation and implementation to follow.										
2. Habitat Value a) Carry out survey required additionally to River Corridor Survey b) Consult with expert bodies c) Devise habitat rehabilitation strategy	EA	EN CC Wildlife Groups LAs	U R R	----	----	----	----	----		Alan Churchward
Progress: River Corridor Surveys now completed. Process now superseded by nationally applied River Habitat Surveys. Habitat rehabilitation strategy is part of overall river rehabilitation strategy referred to in Action 6.										
3. Uses & Access a) Survey and baseline data b) Set up User Forum and consult c) Develop recreational strategy	EA EA EA/ User Group EA	BW	R+U R+U R	----	----	----				Alan Churchward
Progress: Survey of baseline data completed with publication expected shortly. Recreational development forms part of overall river rehabilitation strategy referred to in Action 6.										

ISSUE 28 Rehabilitation of river corridors (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
4. Cultural, historic and archaeological features a) Investigate and appraise main river (Severn Estuary Archaeological Study) b) Formulate collaborative strategy.	EA	County Archaeologist B&GAS EH	R	----	----	----	----			Alan Churchward
Progress Severn Estuary Archaeological Study Millennium Bid unsuccessful. Severn Estuary Database, which includes archaeological constraints, in process of being updated.										
5. Channel Geomorphology and Hydrology (a) Urban and (b) Rural i) Identify those reaches most in need of improvement (a & b) ii) Define strategy for recreating natural/improved channel (a&b) iii) Identify potential sites for de-culverting iv) Promote collaboration to open up urban river corridors, Cheltenham, Stroud, Gloucester (a)	EA	MAFF, CCs EN LAs Local Interest Groups Landowners		----	----	----	----	----		Alan Churchward
Progress Detailed examination of the River Chelt as part of Chelt FAS. Similar progress has been made on the urban part of the River Leadon through Ledbury.										

ISSUE 28 Rehabilitation of river corridors (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
6. River Rehabilitation Strategy (Synthesis of Actions 1-5) a) Analytical Study of data collected b) Pilot Scheme and Programme c) Produce strategy for phased rehabilitation.	EA	As above	U	-----	----- ----- -----	-----				Alan Churchward
Progress We are developing a river rehabilitation strategy which will be applied throughout the region. This includes a pilot study on the River Alne. The strategy will be completed during 1997/98.										

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Investigate the major sources of potential conflict	EA									Alan Churchward
a) Nature conservation: pressure on habitats.	EA									
Projects:										
i) Saltmarsh Monitoring		EN Wildlife Trusts	U	----	----	(-----)	(-----)	(-----)		
ii) <i>Breeding Wader Survey</i>	EA	RSPB	3	----						
b) Landscape: Landscape Appraisal Programme (Commencing with Chelt, Frome, Cam)	EA		U	----	----	----	----	----		
c) Cultural Heritage (Severn Estuary Archaeological Study)	EA	LAs Archaeologists & Trusts	U	----	----					
d) Recreation and Access: Seek opportunities to incorporate recreational facilities.	EA	User Groups Sports Council	U	----	----	----	----	----		
e) Consult with expert bodies, local groups and landowners (Three Monthly meeting with EN)	EA	EN MAFF Landowners	U	----	----					
Progress a)i) We have undertaken saltmarsh monitoring at 7 sites to study the recovery of saltmarsh following disturbance. a)ii) We assisted with the RSPB survey and supported a follow up seminar with the RSPB wetland grassland creation and management at Slimbridge. This was attended by conservation organisations, river engineers, farmers and landowners. b) Part of river rehabilitation project. See action 1 in issue 28. c) A bid to the Millennium Commission for funding for the project was unsuccessful. No further action proposed. d) Recreation and public amenity area alongside the Binn Wall under construction.										

ISSUE 29 Competing requirements of river engineering and other uses (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
2. Baseline data and accessibility of data a) Survey as required additionally b) Continue to update and develop Severn Estuary Study database	EA EA	BW	U 25	----- 5	----- 5	----- 5	----- 5	----- 5		Alan Churchward
Progress Severn Estuary database being updated.										
3. Evaluate data and consultation a) Produce Best Practice Guidelines for Operational Works Service Level Agreements and Regional Guidelines also apply. b) Develop Design Criteria to allow compromise between efficient flood water conveyance and natural structure of channel: Cam, Frome, Leadon	EA EA	 LAs Landowners	R	----- -----	----- -----	----- -----	----- -----	----- -----		Alan Churchward
Progress a) Rivers and Wetlands Best Practice Guidelines being developed for a wide range of activities. These are available as a set of leaflets. b) National database of rehabilitation schemes has been developed as a reference source. Work carried out on the River Chelt to develop criteria.										

ISSUE 29 Competing requirements of river engineering and other uses (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
4. Public Interest Consultation via Environmental Statements(where appropriate)/Press releases/notice boards/etc.	EA	All	R	----	----	----	----	----	----	Alan Churchward
Progress Environmental Statements, Assessments, Issues or Scoping Reports published on Chelt, Cone Pill, Rodley and Oakle Street flood defence schemes. Public notices regularly updated and displayed during construction phases of works at Priding.										
5.Promote better liaison between EA and all interested parties.	EA	All	U	----	----	----	----	----		Alan Churchward
Progress During Chelt FAS feasibility stage all potentially affected property owners were contacted and consulted. See also 29.4										

ISSUE 30 was deleted in the Action Plan and amalgamated into Issues 29 and 31.

ISSUE 31 Development of recreational access

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA issue leader
	LEAD	OTHER								
1. Collaborative projects within Tewkesbury, Upton and other potential sites e.g. Hereford and Worcester CC Millennium Bid "H2000"	EA	BW Landowners	U	----	----	----	----	----	Alan Churchward	
	H&W CC		U	----	----					
Progress Hereford and Worcester Millennium Bid in process of revision.										
2. Continuation of Severn Way Project	EA	BW Landowners	R	----	----				Alan Churchward	
Progress No progress.										
3. Investigation of potential cycle tracks	Sports Council Sustrans	EA	U	----	----				Alan Churchward	
Progress No progress.										
4. Analysis of recreational use and development of nodal points with facilities such as parking, interpretation, etc.	BW LAs EA Police		R	----	----	----	----	----	Alan Churchward	
Progress The sustainable transport charity SUSTRANS have undertaken a project to identify the route of a National Cycle Network which includes stretches in this plan area.										

ISSUE 31 Development of recreational access (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
5. Promote access to or along all rivers within catchment where appropriate and where opportunities arise: a) Increased availability, where practical, for disabled access. b) Additional 6 mooring sites between Worcester and Gloucester.	EA BW		R	----	----	----	----	----		Alan Churchward
	EA BW		R	----	----	----	----	----		
	BW		U	----	----					
Progress No progress.										
6. Liaise with FA to examine the role of water in recreational aspects of the Forest of Dean.	FA		U	----	----	----	----	----		Alan Churchward
Progress No progress.										
7. Revision of Avon Users Handbook to include Lower Severn	EA	Sports Council		----	----					Alan Churchward
Progress No progress. A joint booklet will be produced when supplies of Avon Users booklet have been exhausted.										

ISSUE 32 Protection of vulnerable species

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1. Shad a) Preparation and adoption of Shad Conservation Strategy to include e.g identification and protection of spawning habitat, provision and assessment of use of fish passes b) Advise anglers on best practices for catch and return to reduce Shad deaths as a result of accidental catches.	EA	EN	5		----					Alan Churchward
	EA	S&T	U	----	----					
Progress a) Species Action Plan in preparation due early Spring 1997 b) This will form part of the strategy above.										
2. Crayfish a) Identify rivers in catchment where crayfish farms should be refused b) Liaise with MAFF to formulate agreed policy for introductions of crayfish under Wildlife & Countryside Act	EA MAFF		1		----					Alan Churchward
	EA		R			----				
Progress a) 'No go' areas now designated by MAFF. b) Policy has been agreed.										

ISSUE 32 Protection of vulnerable species (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
3. Brown Trout a) As above for Shad	EA	EN	5		----	----	----			Alan Churchward
Progress National Brown Trout Strategy in preparation. Expected 1998/99										
4. Otter Development of otter habitats via the Severn Otter Project (cf. Issue 29)	EA Worcs Wildlife Trust BW	Others	65 (EA): 25 (Other Partners)	18	18	18	18	18		Alan Churchward
Progress Otter spraint noted at new site in Lower Severn. Management Group set up by River Severn Otter Project and British Waterways to manage appropriate new sites.										
5. Water Voles Contribute to the implementation of the EN Species Action Plan.	EA EN	Wildlife Trusts			----	----	----	----		Alan Churchward
Progress New action added as a result of consultation.										

ISSUE 33 The management of the salmon and elver fisheries

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
ELVERS 1. Increased patrol work and prosecution of boat owners contravening the navigation legislation	BW		R	-----	-----	-----	-----	-----	Ongoing	Alan Churchward
Progress Successful prosecution of boat fishermen following extensive joint boat patrols with Police. Seizure of boats and illegal nets.										
2. <i>Provision of eel & elver passes on weirs and sluices in the catchment: Upper Lode Weir</i>	EA		5	-----						Alan Churchward
Progress Completed										
SALMON 1. Prepare Salmon Management plan in liaison with Environment Agency Upper Severn area and other Environment Agency Regions (Re: Severn Estuary CMP)	EA	2	-----	-----						Alan Churchward
2. Cf Issue 20(7)	EA	30	-----	-----						
Progress In preparation to be completed Spring 1997.										

ISSUE 34 Canal restoration

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	PROGRESS
	LEAD	OTHER								
FROME 1. Restoration of Cotswold Canals	CCT	BW EA GCC MOD	4604	----	----	----	----	----		Julie Everard
Progress Engineering work undertaken to maintain flow in the Stroudwater Canal (Ryeford Sluices).										
2. Review of status of old connections and use of existing channels	EA		25				----			Roger Wade
Progress Project due 1998/99										
3. Appraisal of the impact of increased recreational use on nature conservation/ hydropower.	CCT EN BW Wildlife Trusts Landowners	EA EN	U	----	----	----	----	----		Alan Churchward
Progress No progress.										

ISSUE 34 Canal restoration (continued)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
HEREFORDSHIRE & GLOUCESTERSHIRE CANAL 1. Restoration 2. Investigate use of river channels	H&G CT GHT EA		U 1.5 (EA)	-----	----- 1.5	-----	-----	-----	Ongoing	Roger Wade
Progress The canal restoration project is at an early stage and a full feasibility study has not yet been undertaken. Before this full study could progress it was necessary to consider whether there is sufficient water for the canal. The agency promoted this study in conjunction with the Canal Trust and Birmingham University and the report was published in June. A brief follow up report has just been produced by Ian Walker Associates, Internal Navigation consultants on the operational requirements for water resources.										

ISSUE 35 Hydropower development

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	EA ISSUE LEADER
	LEAD	OTHER								
1.River Cam Protect flows and resources in the River Cam via operating agreements with hydropower users and millowners.	EA		U			----				Roger Wade & Paul Bailey
Progress Scheduled for next year.										
2.River Frome Appraisal of 14 potential hydropower sites.	EA		U	----	----					Roger Wade & Paul Bailey
Progress Sites have been identified and presented to Hydro Action Group.										
3. Implement hydropower scheme at 1 site in catchment . Implement 3 further sites.	HA	EA	U U		----					Roger Wade & Paul Bailey
Progress Ebley Mill site has been agreed and the Agency has aided the implementation of the scheme and planning permission has been granted. One further site has been suggested for further investigation.										
4. Feasibility of hydropower to be considered for all capital schemes.	EA		U	----	----	----	----	----		Paul Bailey
Progress Where capital schemes involve a structure that maintains or produces a head of water in the channel hydropower is considered within the options.										

ISSUE 36 This was replaced by the Land Use Statement in Section 4 of the Action Plan.

ISSUE 37 Water Level Management Plans (WLMP)

ACTIONS	RESPONSIBILITY		TOTAL COST £K	1995 /96	1996 /97	1997 /98	1998 /99	1999/ 2000	FUTURE	PROGRESS
	LEAD	OTHER								
1. Produce WLMPs: programme as agreed: a) Chaceley Meadows b) Coombe Hill Canal c) Old River Severn d) Severn Ham e) Upton Ham f) Walmore Common j) Upper Severn Estuary	EA West Glos IDB South Gloucs IDB	EN EN Landowners	R	----- ----- ----- ----- ----- ----- ----- ----- -----	----- ----- ----- ----- ----- ----- ----- ----- -----	-----				Paul Bailey
Progress b) c) d) e) Interim Management Statements (IMS) have been completed for these. Final WLMP will be completed in 1997.										

5. Future reviews

Progress will continue to be monitored and the Second Annual Review of the River Severn Lower Reaches will be published in January 1998. The Consultation Report will be revised in 1998 when it will take the form of a new Local Environment Agency Plan (LEAP).

A LEAP will be a new planning tool for the Agency. The Plan will look at the environment of an area in a more holistic way. Britain is committed to sustainable development and bio-diversity and the government has produced national strategies for both. LEAPs will be important tools for managing the environment, helping to realise at a more local level, sustainable development and bio-diversity, through the actions of the EA and others.

As with CMPs, LEAPs will only be successful with the support and co-operation of all those with an interest in the environment and the Agency will seek to work in partnership with all relevant agencies, representative organisations and individuals.