

EA - SOUTH WEST LEAPS BOX 8

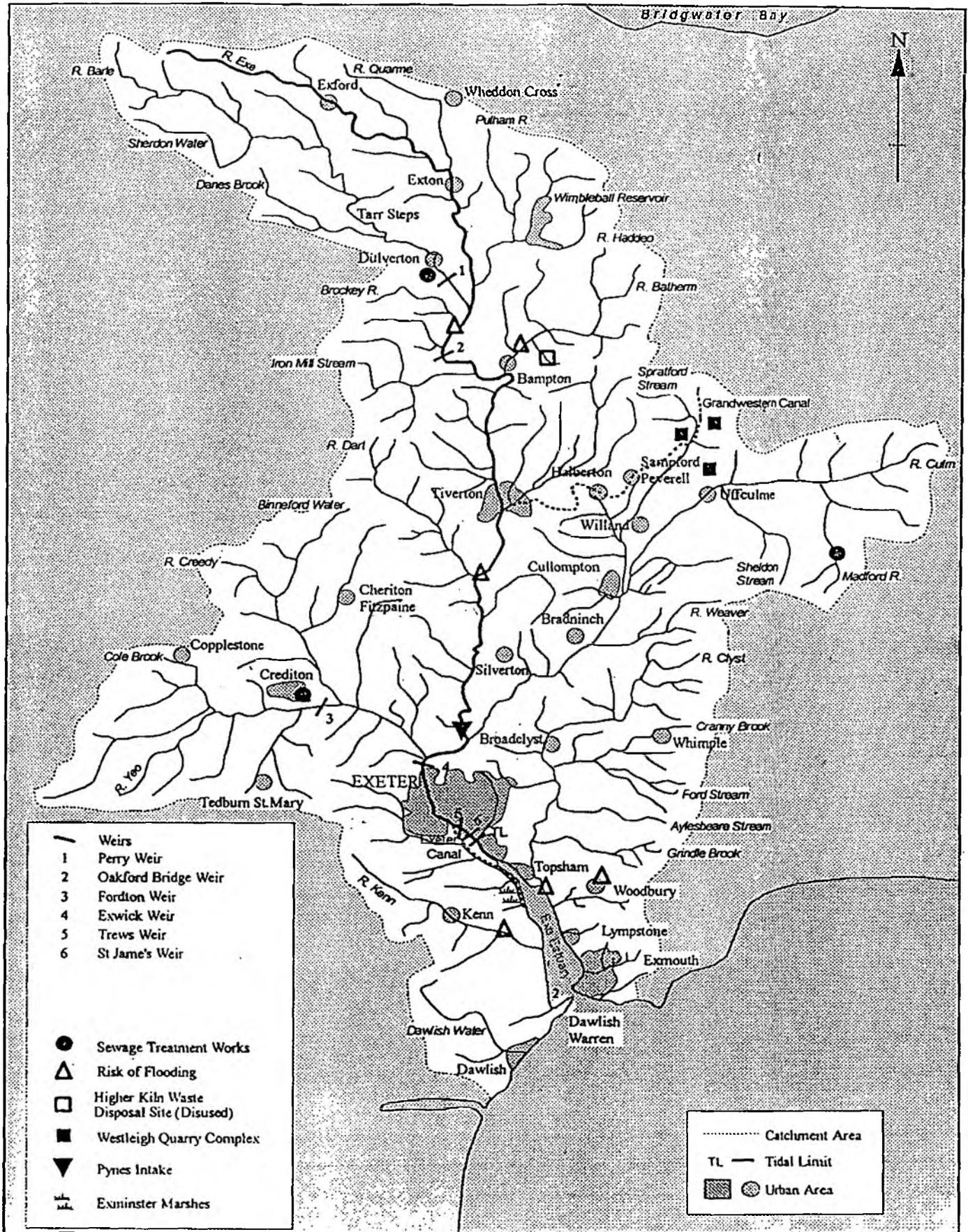


ENVIRONMENT
AGENCY

FIRST ANNUAL REVIEW
OF THE
RIVER EXE
CATCHMENT MANAGEMENT PLAN
(1997)



Key Sites Relating to Issues in the River Exe Annual Review



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ENVIRONMENT AGENCY



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River Exe Catchment Management Plan

Environment Agency South West Region

SOUTH WEST REGION

RIVER EXE CATCHMENT MANAGEMENT PLAN - ACTION PLAN - FIRST ANNUAL REVIEW

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Key to Tables:

n/a	Costs not attributed to the Agency
u/k	Costs to Agency are unknown
<1k	Costs to Agency will be under £1000
pa	Per Annum

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October 1997

CATCHMENT VISION

Our vision of the River Exe Catchment is of a healthy and diverse water environment, managed in an environmentally sustainable way, balancing the needs of all users.

To realise the potential value and optimise the use of the water environment within this catchment, the Environment Agency will work in partnership with local authorities, environmental groups and other interested organisations. The River Exe Catchment Management Plan provides an important focus for this partnership. We look forward to a future for the catchment where there is:

- achievement of environmentally sustainable use of the water resource
- maintenance and, where appropriate, enhancement of biodiversity, particularly of aquatic features, habitats and species
- conservation of features of archaeological and historic interest within the aquatic environment and associated land
- continuing improvement to existing discharges to meet the most appropriate standards
- development of a sustainable agricultural, aquacultural and forestry system which reduces the risk of diffuse pollution and improves the physical habitat of the river system and wetlands for wildlife
- increasing enjoyment and appreciation of the water environment
- minimal risk to people and property from flooding
- maintenance of the natural hydrological cycle, including natural river and wetland functions and processes
- achievement of sustainable salmonid, freshwater, sea and shellfisheries within the catchment.

1. Introduction

1.1 The Environment Agency

The Environment Agency was formed on 1 April 1996, bringing together the National Rivers Authority (NRA), Her Majesty's Inspectorate of Pollution (HMIP), the Waste Regulation Authorities (WRAs) and some units of the Department of the Environment (DoE) dealing with the technical aspects of waste and contaminated land.

Our Principal Aim

Our aim, as set out in the Environment Act 1995, is to protect or enhance the environment, taken as a whole, in order to play our part in attaining the objective of sustainable development.

Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report).

Our Objectives

The Environment Agency works towards Sustainable Development through seven objectives, set by Ministers:

- An integrated approach to environmental protection and enhancement, considering the impact of all activities on natural resources;
- Delivery of environmental goals without imposing excessive costs on industry or society as a whole;
- Clear and effective procedures for serving its customers, including the development of single points of contact with the Agency;
- High professional standards, using the best possible information and analytical methods;
- Organisation of its own activities to reflect good environmental and management practice, and provision of value for money for those who pay its charges, and for taxpayers as a whole;
- Provision of clear and readily available advice and information on its work;
- Development of a close and responsive relationship with the public, including Local Authorities, other representatives of local communities and regulated organisations.

Our Role

Our work is divided into seven main functions:

- Flood Defence
- Water Resources
- Pollution Prevention and Control
- Navigation
- Fisheries
- Recreation
- Conservation

1.2 The Environment Planning Process

The environment is subject to a wide variety of uses which invariably interact with and sometimes conflict with each other. The process of Environment Planning helps to manage these interactions and conflicts for the overall benefit of the environment and its users. This planning process includes the production of two documents - a Consultation Report and an Action Plan. The Consultation Report identifies environmental problems, proposes actions to tackle them and acts as a focus for consultation between ourselves and other interested parties in the catchment. Following consultation, the Action Plan identifies actions to resolve the problems and issues. The Plans provide background data for Environment Agency responses to development plans and highlight our concerns about development. Achievement of the Action Plan is reported in Annual Reviews.

1.3 The Catchment Steering Group

Catchment Steering Groups represent a range of commercial, local authority and environmental 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 River Exe Catchment Management Plan Action Plan is reported to the members of the Exe Catchment Steering Group. The Catchment Steering Group Members are:

River Exe Catchment Steering Group:

Name	Representing
Mr R Bell	Industry (Devon Valley Industries Ltd)
Mr A Box	British Canoe Union
Mr D Boyce	Exmoor National Park
Mr J Carr	Exeter and District Angling Association
Mr R Hill	Devon County Council
Mr J Clark	Mid Devon District Council
Mr I Cook	Devon Fisheries Forum and Area Environment Group
Mr A Crang	National Farmers Union
Mr A Kilby	River Exe & Tributaries Association
Mr J Nott	Exeter City Council
Mr H Maund	Exe Valley Fishery and Trout Farmers
Mr E Newton	Industry (John Heathcoat & Company Ltd)
Ms P Parker	Council for the Protection of Rural England (Devon)
Mr R Retallick	Tiverton & District Angling Club
Mr M Robins	RSPB & South West Regional Flood Defence
Mr H Thresher	Crediton Fly Fishing
Mr I W Voysey	River Exe Netsmen Association
Mr M Williams	South West Water Services Ltd

PROGRESS TABLES

1. RIVER QUALITY OBJECTIVES

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Marginal failure of RQO targets at: Holly Water and River Creedy (Ashridge Bridge to Creedy Bridge); Upper River Kenn (also moderate macro-invertebrate quality)				
1ai	Conduct catchment inspection taking action where problems identified	Agency, Landowners, Dischargers	3k	Intensive catchment inspection carried out during winter of 96/97. Problem sites have been identified and remedial works undertaken to be completed by December 97.
1aii	Follow up previous investigation with further inspections, enforcing pollution control legislation where appropriate	Agency, Landowners, Dischargers	2k	Ongoing
Significant failure of RQO target at: Dunkeswell Stream				
1bi	Improve effluent treatment at Dunkeswell STW and relocate discharge to the Madford River by end of 1997	SWWSL	n/a	Numerical consent issued for Dunkeswell STW. Final effluent discharge to be relocated to Madford River by 1 May 1998.
Failure to meet long term RQO at: North Brook (and moderate macro-invertebrate quality); Aylesbeare Stream; River Culm				
1ci	Seek further improvements to water quality in North Brook.	Agency, Landowners, Dischargers	<1k pa	A litter clean up exercise was carried out earlier this year. There are no problems from leachate from Mincinglake tip.
1cii	Follow up previous investigation on Aylesbeare Stream with further inspections, enforcing pollution control legislation where appropriate	Agency, Landowners, Dischargers	2k	Ongoing
1ciii	Carry out water quality modelling on the River Culm to help identify further actions.	Agency	3k	Water quality modelling will be undertaken by April 1998, following this appropriate actions will be developed so that long term RQOs can be met.

2. COMPLIANCE WITH EC DIRECTIVES

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Bacteriological pollution from discharges of storm sewage to Dawlish Water				
2ai	Negotiate for improvements to discharges of storm sewage to Dawlish Water to be carried out	Agency, SWWSL	<1k	Was due for completion during 1996, however, negotiations are still underway. SWWSL are investigating options for CSO improvement.
2aii	Investigate bacteriological source inputs to Dawlish Water	Agency	u/k	Area investigations have confirmed that the main source of inputs to be CSOs and some land runoff in wet weather. A dry weather survey has recently been undertaken. Conclusions and recommendations will be made shortly.
High copper concentrations in the River Barle downstream of Dulverton STW				
2bi	Continue to monitor as required under the EC Dangerous Substances Directive ¹ and investigate any further failures	Agency.	<1k pa	Initial investigation attributed high metal levels to the natural geology of the area and no action can be taken. However, the discharge from Dulverton Laundry which now discharges to the STW may contain some levels of copper. We will continue to monitor the site under the EC Dangerous Substances Directive.
Eutrophication in the River Creedy				
2ci	Install phosphorus removal at Crediton STW by the end of 1998	SWWSL	n/a	Due for completion in 1998.
2cii	Continue monitoring eutrophication in the River Creedy	Agency	<1k pa	Ongoing
Comprehensive studies required to demonstrate no impact from discharges to the HNDA at Dawlish				
2di	Carry out comprehensive study by Spring 1998	SWWSL	n/a	A survey was to have been carried out by SWWSL to support primary treatment at Dawlish, however, a comprehensive study is not now to take place as SWWSL have since opted for secondary treatment.
2dii	Audit study and determine status	Agency	<1k	See issue 2di
Risk of industrial pollution and high polyaromatic hydrocarbon (PAH) concentrations in the River Exe at Pynes Intake				
2ei	Work with site owners to ensure industrial sites upstream of Pynes intake identified during risk assessments take necessary remedial action. Enforcing pollution control legislation where necessary.	Agency, SWWSL, Industry	3k	Risk assessment has been carried out at Tiverton, Bampton, Exebridge and Dulverton and necessary remedial actions taken, including installation of interceptors, provision of oil bunding and redirection of surface water drains.

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
2eii	Continue monitoring for PAHs and investigate any failures	Agency	<1k pa	We are continuing to monitor this site. (There have been no failures since 1994. Investigation attributed road/surface runoff to be the most likely cause of non-compliance).
2eiii	Review results of national research on road runoff	Agency	<1k	The analytical method for PAH analysis has been improved, giving rise to fewer non-compliance's with directive standards. The National Project into road run-off and PAH non-compliance has, therefore, been reassessed as no longer required due to the fewer instances of non-compliances.
High nitrate concentrations in groundwater				
2f	Review Duckaller NVZ designations every 4 years in accordance with criteria specified by DoETR	DoETR, MAFF, Agency	5k	The current review is scheduled for completion in December. Recent monitoring data does not suggest any change to the designation of this source as vulnerable.

3. GRAND WESTERN CANAL

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Poor water quality and fish mortality risk in the Grand Western Canal				
3ai	Reinstate sluice at the canal basin in conjunction with increased pumping from Westleigh quarry and develop a plan for its operation	DCC, Agency	<1k pa	Sluice was reinstated during repairs to basin. Devon County Council still to connect to sewer. Operational plan under negotiation.
3aii	Identify an alternative water quality monitoring site for the Tiverton basin	Agency	<1k	Halberton Bridge was identified as an alternative site and monitoring has been taking place there since April 1996.
3aiii	Develop a weed control and dredging programme	DCC, Agency	<1k pa	Devon County Council are developing a management plan for the canal to include dredging and weed cutting.
3aiv	Take steps to reduce siltation and nutrient enrichment from runoff, eg. using buffer zones/silt traps	DCC, Agency	<1k pa	Devon County Council have installed silt traps on freshwater inputs at Whipcott in association with landowners. Negotiations at other sites are under way.
3av	Support the development of boating activity in a way which considers other interests	DCC	n/a	No progress to date.

4. MEASURING AND MANAGING RIVER FLOWS

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Need to reassess sites based on improved low flow identification techniques				
4ai	Produce a revised list of low flow sites	Agency	<1k	This is now due for completion by March 1998.
Low flows in the River Barle				
4bi	Carry out juvenile salmonid fish surveys under low flow conditions to assess impact	Agency	1k	The next routine survey is to be carried out during 1998.
Need for a gauging station to monitor flows of the River Exe at Trews Weir				
4ci	Continue with programme to construct a gauging station at Trews Weir	Agency	30k	An ultrasonic gauging station at Trews Weir has been constructed to timescale and budget.

5. PUBLIC WATER SUPPLY

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Forecast deficit in supply in Wimbleball Supply Zone				
5ai	Complete operational management strategy to allocate resources created by Wimbleball Pumped Storage Scheme.	Agency	2k	The operational management strategy for Wimbleball Pumped Storage Scheme has been implemented and is currently working well.
Perceived over exploitation of the Duckallor/Vennbridge aquifer				
5bi	Review existing data	Agency	2k	Discussions continuing with SWWSL over possible licence variations to reduce direct impacts on streams in conjunction with variations to local spray irrigation licence.

6. REPORTED FALLING GROUNDWATER LEVELS AT DAWLISH WARREN

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Reported falling groundwater levels at Dawlish Warren				
6ai	Continue to contribute to 'The Sand Dunes Project' being carried out by Plymouth University.	EN, Agency, DCC, TDC, Plymouth University	<1k	A final report on 'The Sand Dunes Project' is expected by December 1997. When this is available the results will be made known.
6aii	The Agency will assist in the implementation of the management plan where appropriate	Agency, DCC, TDC, EN, Plymouth University	u/k	To date there has been no further progress on this action. It is dependant on issue 6ai
6aiii	Consider implications of Dawlish Warren groundwater levels study on sand crocus and encourage implementation of protective measures. Support further studies into decline of sand crocus.	EN, Plymouth University, Agency, DWT, DCC, TDC	u/k	To date there has been no further progress on this action. It is dependant on issue 6ai

7. LANDSCAPE, GEOLOGY AND ARCHAEOLOGY

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Adequate consideration is needed to be given to the conservation and enhancement of earth science features associated with the wetland environment (eg. river and floodplain forming processes)				
7ai	Support the identification and documentation of County Geological Sites	Agency, Devon & Som RIGS Group, LAs, EN	<1k pa	The Agency is actively involved with the Devon RIGs Group on the identification and documentation of County Geological Sites on an ongoing basis.
7aii	Promote measures to conserve, enhance or interpret earth science features linked to the water environment	Agency, Devon & Som RIGS Group, LAs, EN	<1k pa	The RIGS Group have identified a site at Topsham and are looking and other sites in East Devon and Teignbridge.
Absence of general assessment of archaeological/historic value of whole catchment				
7bi	Support production of document(s) covering entire area; investigate potential for collaboration	EH, DCC, DAS, Civic Society, Agency, University of Exeter, RCHME	<1k	A pilot study is currently being carried out in East Devon. If successful, similar studies will be carried out in other catchments including the Exe.

8. WILDLIFE CONSERVATION

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Need for conservation of key habitats				
8ai	Continue development and implementation of the Rivers and Wetlands BAP	DWT, Agency, EN, DCC, WERC	u/k	This will now form part of the Devon County Earth Sciences BAP which is currently being produced. The draft document is due in November 97.
8aia	Continue development of Devon Nature Conservation Strategy	DCC, Agency, DWT, EN, RSPB, DNP, ENP	<1k	To be combined with previous action (8ai)
8aiii	Clarify status of rivers within County Wildlife Site selection guidelines	Wildlife Trusts, Agency	u/k	This is still at an early stage. Initial discussions have been held with Devon Wildlife Trust.
8aiv	Continue production and updating of wildlife inventories	Wildlife Trusts, Agency, Planning Auths	u/k	Ongoing
8av	Attempt to identify main uses and activities affecting priority sites	DWT, Agency, EN, RSPB	u/k	Ongoing
8avi	Continue process of designating the River Barle SSSI and devising a conservation strategy	EN, Agency, ENP	3k	The River Barle has now been designated as a SSSI. A conservation strategy is currently being produced.
Rapid loss of Culm grassland and springline mires				
8bi	Total catchment resource to be entered into protective management schemes by 2005	MAFF, DWT, Agency, EN, RSPB, DCC, Blackdown Hills Officer	<1k pa	Ongoing
8bii	Produce list of priority sites for restoration by 1997	DWT, Agency, EN, RSPB, DCC, MAFF, NFU, Blackdown Hills Officer	<1k pa	Work has not yet been carried out on this action. To be carried forward to 1998.
Decline of marsh fritillary				
8ci	Contribute to appropriate management and work through the existing groups, eg. CGWG, Butterfly Conservation, EDDC, landowners, etc. to maintain and restore existing populations	Agency, EDDC, landowners, public, DWT	<1k	Projects have been proposed for this action in the Blackdown Hills area for 1997/98, but nothing started to date.

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Need to retain/restore conservation value of floodplain wetlands				
8di	Develop formal Water Level Management Plan for Exe Estuary by April 1997	Agency, EN, RSPB	10k	A draft Water Level Management Plan has been produced.
8dii	Implement recommendations and monitor results of the Water Level Management Plan for Exminster Marshes	Agency, EN, RSPB	20k	This is dependant on issue 8di
8diii	Investigate extent of current and potential floodplain wetlands using S105 surveys	Agency	11k	S105 surveys have now been produced. There is possible interest for the restoration of wetlands on the Exe, Culm and Clyst floodplain.
8div	Produce list of priority sites for conservation management by 1998	Agency, DWT, RSPB	1k	No list of priority sites has yet been produced.
8dv	Produce management plans by 1998 for Agency land holdings (particularly the Lower Wear Reedbed and the nearby field to the south east of Countess Wear Bridge) to maximise conservation value, while fulfilling other requirements	Agency, EN	2k	A draft plan has been produced for the Lower Wear Reedbed with possible actions for 1997/98 to impede drainage and diversify habitat. Plans will be progressed in 1998 for the other site.
Need to maintain and enhance conservation value of estuary margin wetlands				
8ei	Contribute to production and implementation of management strategy for wetland habitats, eg. willow scrub	Agency, DWT, EN, RSPB, DBWPS	u/k	The RSPB have been contracted to develop a management strategy which will be completed in March 1998.
Need to maintain/enhance or protect/expand reedbed habitat				
8fi	Promote and implement, as appropriate, actions identified in Rivers and Wetlands BAP	DWT, Agency, EN, RSPB, DCC, WERG, MAFF, Blackdown Hills Officer	u/k	Ongoing, but definite sites have yet to be identified.
Need to retain/restore conservation value of estuarine habitats				
8gi	Support the development of a management statement for the Exe Estuary SPA ²	Agency, EN, DWT, RSPB	<1k	Awaiting production of statement on designation from English Nature.
8gii	Obtain data from WEBs counts	Agency	<1k	No data has yet been received.
8giii	Map Zostera beds in the estuary	EN, Agency, DWT	u/k	This action is now covered under the County Habitat Action Plan for Estuarine Habitats which is part of the Devon BAP.
8giv	Review existing statutory protection	EN	n/a	Ongoing
8gv	Establish as part of the proposed JNCC network of seagrass monitoring sites	EN	n/a	Ongoing

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
8gvi	Control exploitation of shellfishery	Devon Sea Fisheries, Agency, EN	<1k	Ongoing
Otter population below optimum level				
8hi	Promote and implement, as appropriate, actions identified in Rivers and Wetlands BAP	DWT, Agency, EN, DCC, WERG	u/k	There is a National Otter BAP and the Agency are to lead on this together with other wildlife trusts. So far relatively little has been done on the Exe, but populations of otter are expanding within the catchment.
Decline of water vole population				
8ii	Promote and implement, as appropriate, actions identified in Rivers and Wetlands BAP (specific actions will be added at the annual review stage)	DWT, Agency, EN, DCC, WERG	u/k	No specific actions yet agreed. Charwell Meadow, which is apparently a good water vole site, is to be designated as a local nature reserve.
Lack of current information on sand martin and kingfisher distribution				
8ji	Develop targets based on survey results	Agency, River Users	<1k	Results have only just been received. Once results have been assessed, targets can be developed.
8jii	Support Devon Bird Watching and Preservation Society's (DBWPS) proposed county-wide survey of kingfisher and sand martin nest sites during 1997.	DBWPS, Agency	u/k	A draft report on the situation for kingfishers has been received and the results look good. Actions will be taken based on this information.
8jiii	Raise awareness of field staff and encourage reports of presence. Work with interested parties, such as anglers, to encourage reports of sand martins	DWT, Agency, DBWPS, RSPB	u/k	This action forms part of previous action (8jii).
Need for protection of native crayfish				
8ki	Determine distribution and abundance of the River Creedy crayfish population	Agency	2k	Lack of resources has hampered production of a survey to determine the distribution and abundance of crayfish population. Currently unsure when survey will take place.
8kii	Survey sites previously known to support crayfish on River Culm.	Agency	<1k	No survey has yet been carried out and currently nothing is planned.
8kiii	Maintain records arising from biological or fisheries surveys	Agency, EN	<1k	Ongoing
8kiv	Implement no-go area recommendations through consenting process	MAFF, Agency	<1k	Ongoing
8kv	Seek to agree containment measures with owners/operators of sites containing non-native species outside no-go areas.	Agency	<1k	No sites containing non-native species have been identified.

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
8kvi	Attempt to identify water quality requirements for native crayfish, and set longer term RQOs on particular stretches should the need arise.	Agency	u/k	Information on water quality requirements is relatively sparse and mainly relates to calcium concentrations. However, 87% of crayfish are found in RE1 and RE2 stretches which would suggest these targets would offer some protection for the species. All sites within the Exe catchment have a long term RE classification of at least RE2.
8kvii	Support actions from the Rivers and Wetlands BAP	Agency	u/k	No progress yet on this action.
Need for a Management Plan for the Exeter Canal, including rare plant species				
8li	Encourage production of survey and mapping of canal flora	Agency, ECC, EN	<1k	This forms part of action 8lii
8lii	Develop Management and Business Plans for Exeter Canal	ECC	n/a	The criteria for the Management Plan for the Exeter Canal is being assessed and drafted.
Spread of invasive plant species				
8mi	Continue programme of surveys and consider need for control programmes	Agency	<2k	Surveys are continuing. A trial is being carried out in the Lyn catchment to control invasive species. Early indications are that it is effective, but costly.
Presence of root disease of alder				
8ni	Check alders for signs of disease	Agency, FA	<1k pa	Survey is continuing. Signs of disease have been found in parts of the Exe, Culm, Culvery and Yeo.
8nii	Raise awareness of riparian owners and others	Agency	<1k pa	A press release was sent out in August to raise awareness of the disease, and anyone sighting dead or unhealthy alders were asked to report back to either the Agency or Forestry Commission.
8niii	Produce regular updates on National Position	Agency	<1k pa	A new leaflet has been produced updating the position on the disease. Copies are available from the Agency and Forestry Commission

9. EXE ESTUARY MANAGEMENT PLAN

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Need for Implementation of Exe Estuary Management Plan				
9ai	Continue to work with other agencies and organisations to develop and implement an agreed Exe Estuary Management Plan	Estuary Manager <i>Exe Estuary Officers Working Group</i>	<1k pa	The Exe Estuary Management Plan has undergone final consultation and has now been approved by Devon County Councils Environment Committee for implementation.
Concern over the impact of sewage from boats and of water quality adequate to protect water sports				
9bi	Support actions in the Exe Estuary Management Plan	Agency, Estuary Manager, <i>Exe Estuary Officers Working Group</i>	<1k pa	Actions will be supported once identified

10. GREEN TOURISM INITIATIVES

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Need to accommodate a variety of recreation uses of river and coastal sites in a way which does not conflict with environmental interests				
10ai	Develop and implement agreed recommendations of the Exe Estuary Management Plan	Estuary Manager <i>Exe Estuary Officers Working Group, Agency, DCC, TDC, CPRE, Users</i>	u/k	The Exe Estuary Management Plan has undergone final consultation and has been approved for implementation.
10aai	Need for improved visitor management at Tarr Steps	ENP	n/a	Minor works have been carried out during 1997 to improve footpaths. Exmoor National Park are still negotiating over the purchase of woodland to further improve visitor management.
Need for access improvements in the Exe Valley				
10bi	Improve public access by foot along the Exe Valley Way	DCC, Agency	<1k	Ongoing
10bii	Establish cycle route within the Exe Valley, with off-road sections	DCC, Agency	<1k	Ongoing

11. CANOEING IN THE RIVER EXE CATCHMENT

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Limited access agreements for summer canoeing				
11ai	Encourage discussions between interested parties to investigate possibilities for extending access agreements, including limited summer access at appropriate locations.	Agency, BCU, RETA, LAs, landowners	<1k pa	To date there have been no discussions between interested parties and nothing is currently planned.
Poor access to river for canoeing particularly for less able canoeists				
11bi	Encourage discussions between interested parties to investigate the possibilities for improving access to the river.	Agency, BCU, DCC, LAs, Landowners	<1k pa	As above.
Lack of readily available information on canoeing conditions				
11ci	Review success of existing telephone or e-mail information lines and extend to River Exe if appropriate	Agency, BCU	<1k	The South West region are looking into the possibility of joining a National project on information for canoeists. Discussions have taken place with other interested parties within the Agency and the project is under consideration.

12. MANAGEMENT OF ENVIRONMENT AGENCY OWNED LAND

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Need for revision of recreation management of Exwick Flood Relief Channel				
12ai	Draw up management plan for recreation (and conservation)	Agency, Users	5k	A plan has been drafted, however, more work is required before this plan can be finalised.
Need for improved access to and from Agency owned land at Countess Wear				
12bi	Appraise options for new road crossing points	Agency, Users, ECC, Civic Society	<1k	This was due for completion during 1996, however, there has been no progress on this action due to significant cost implications.
Need for amenity improvements to Tiverton Flood Alleviation Scheme				
12ci	Review possibilities with other agencies, Mid Devon District Council (MDDC), for carrying out enhancements to scheme	MDDC, Agency, Landowners	<1k	Continuing. Discussions have been held with Mid Devon District Council and a bid for funding is about to be made. No information on amount of bid was available.

13. REVIEW OF FLOOD DEFENCE OPERATIONS

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Coastal management				
13ai	Preparation of a Shoreline Management Plan for the Lyme Bay and South Devon Coastline	Agency, TDC, WDDC, EDDC, SHDC, WPDC, TBC, PCC, DCC, DoCC	40k	WDDC are managing a consultancy contract to develop a draft plan. Meetings have been held to determine issues to be considered and the proposals of preliminary management objectives. The draft plan is to be prepared by December 1997, and the final document is anticipated during 1998 for subsequent adoption by South West Regional Flood Defence Committee.
13aii	Monitor managed retreat at Dawlish Warren	Agency, DWT, EN, TDC	<1k pa	Monitoring is in progress and is being carried out on a twice yearly basis.
Planning and flood risk				
13bi	Provide information (S105 Surveys) to planning authorities to prevent inappropriate development in the floodplain	Agency, Planning Auths	30k	Section 105 survey stage I complete. Presently being issued to Planning Authorities.
The efficiency and effectiveness of our flood defence work				
13ci	Implement the flood defence management system	Agency	70k	Training on the flood defence management system has been completed and completion of data entry expected in 1998.
Risk of flooding at Topsham, Bampton, Woodbury Salterton, Bickleigh, Exebridge and Powderham				
13di	Carry our feasibility study at: Topsham, Bampton and Woodbury Salterton	Agency, MAFF	835k 855k 28k	Feasibility studies have been completed <i>and works planned</i> : -- - Topsham 2000/2001 - Bampton 2000/2001 - Woodbury Salterton 2003/2004 - medium term plan as at September 1997.
13dii	Examine flood protection at Bickleigh, Exebridge and Powderham	Agency	6k	Examination of flood protection complete <i>and improvements planned</i> - Bickleigh 2002/2003 - Powderham 2001/2002 - medium term plan as at September 1997. - Exebridge - interim improvements complete - monitoring of improvements in progress.
Need to improve flood warning at some locations				
13ei	Complete the 'review of flood warning'	Agency	12k	'Ongoing

14. WASTE MANAGEMENT

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Pollution of groundwater around the disused Higher Kiln Waste Disposal site				
14ai	Develop a Restoration Plan with the owners for Higher Kiln Waste Disposal Site	Agency, CAMAS Restored Properties	u/k	Due for completion 1996. A restoration plan has been agreed with owners of site. Work commenced on restoration during summer of 1997.
14aii	Continue detailed groundwater monitoring and regularly review the data	Agency	<1k pa	Monitoring of groundwater continues. 1996/97 results continue to show improved quality. 1997/98 monitoring programme agreed.
Litter in River Exe corridor				
14bi	Investigate source of litter (eg. dumping from boats and riparian owners)	CSG, Agency, LAs, RETA, BMIF, Volunteer Groups	<1k	Forms for identifying locations and sources of litter were distributed through the Catchment Steering Group, however, only one has been returned to date. CSG have been asked to supply information in any format to make the process easier.
14bii	Provide information on sources of litter to responsible bodies to encourage clean up and preventative measures	Agency	<1k	This is dependant upon action 14bi.

15. FISHERIES

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Decline in spring runs of salmon				
15ai	Consider introduction of mandatory fishing effort controls.	Agency	u/k	No further restrictions deemed necessary following adoption of voluntary rod restrictions and agreement between SWWS and Netsmen in 1997. Agreement to be reviewed annually for ten years.
15aii	Promote conservation measures, e.g. bag limits for anglers and agreed restrictions on netting.	Agency, Anglers	u/k	Voluntary rod fishing measures agreed with RETA. Agreement reached that no netting was to take place prior to June 1st of each year.
15aiii	Investigate distribution, spawning activity and behaviour of spring salmon in the river to give us better information about their protection and enhancement.	Agency	2k	No action is currently planned on this issue. If investigations into distribution, spawning activity and behaviour are not carried out on the River Dart, attention may be turned to the River Exe for investigation.
15aiv	Work with MAFF to investigate the effect of reported fish diseases on fish stocks in the catchment.	Agency, MAFF	u/k	There has been limited occurrence of reported fish diseases in 1997. The Agency will send samples to CEFAS in Weymouth for analysis when they can be easily captured.
15av	Examine the possibility of introducing controls on the use of multi and mono filament and drift nets in the Exe Estuary.	Agency, DSFC, MAFF, Newtsmen, Anglers	35k	This is a new action and will be completed as funds and priorities allow.
Perceived decline of brown trout population				
15bi	Monitor stocks through routine survey.	Agency	5k	The River Exe catchment survey is planned for 1998.
15bii	Review existing data and advise on appropriateness of restocking.	Agency	<1k	Juvenile trout densities show no obvious decline. Further analysis following the 1997 survey is required. Restocking with farmed fish is to be discouraged unless absolutely necessary for angling purposes.
Capture of migratory fish in drift nets at sea				
15ci	Monitor drift net fishery closely.	Agency, DSFC	1.5k pa	Regular patrols in estuary and coastal waters are carried out.
15cii	Examine the possibility of introducing controls on the use of multi and mono filament and drift nets in the Exe Estuary. To be completed as funds and priorities allow.	Agency, DSFC, MAFF, Netsmen, Anglers	35k	This is a new action. Update on any progress will be reported at next annual review.
Perceived decline in the quality of fishing on the Exeter Canal				
15di	Survey to identify the problem.	Agency	2k	A major survey is scheduled for spring 1998.

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
15dii	Assist in the management of the fishery where appropriate.	Agency, ECC	1k pa	As part of the management programme, fish have been provided for restocking, health checks provided for other stocking and a sample of bream have been marked to enable movement recording, etc. The Agency participated in a liaison meeting between fishing clubs and Exeter City Council. The City Council are to formulate a Canal Management Plan.
The effect of fish-eating birds on game and coarse fish populations				
15ei	Co-operate with the licensing authority to progress further research into this issue.	Agency, MAFF, Landowners, Anglers	<1k	A National R & D project is looking into this issue which is being led by MAFF. The final report is due in 1998 and the Agency will consider implementation of any interim recommendations.
15eii	Continue to work positively with owners and anglers to establish the full facts in each situation.	Agency, MAFF, Landowners, Anglers	<1k	The Agency is unaware of any licence applications in Devon Area for the control of cormorants during 1997. However, applications for control have been made in the past, but refused.
Extensive gravel removal from the river-bed on the River Yeo at Yeaton Bridge				
15fi	Attempt to identify persons responsible and ensure that appropriate legislation is being complied with. (Notes: Legislation includes Salmon and Freshwater Fisheries Act 1975 and Waste Regulations)	Agency	<1k	To our knowledge there have been no further incidents of gravel removal at this site.
Smolt entrapment and escape of rainbow trout				
15gi	Remove escaped fish on a routine basis using electric fishing methods.	Agency, EN	3k pa	An operation was planned for 1997 in Exebridge/Highleigh area, but was postponed due to high flows. It is now expected that this operation will be carried out during 1998 if the need arises.
15gii	Ensure installation of effective screening of fish farms and abstraction intakes. (Notes: Screening will reduce both escape from fish farms and loss/damage of fish at intakes. The Environment Act 1995 requires that screening is in place by 1/1/99.	Agency, Fish Farmers, Abstractors	<1k pa	Initial discussions regarding screening requirements have taken place with several major abstractors.
Need for a comprehensive plan for salmon management in the catchment				
15hi	Develop Salmon Action Plan (Notes: Salmon fishery targets will be developed as part of this plan)	Agency	5k	Development of the Salmon Action Plan is planned for 1999/2000.

16. BARRIERS TO FISH MIGRATION

ISSUE	ACTION	RESPONSIBLE LEAD / OTHER	COST TO AGENCY	PROGRESS TO DATE
Impeded fish migration on the Rivers Exe and Creedy				
16ai	Improve conditions for upstream migration of salmonids at: Perry Weir on the River Barle (also issue 4b); Oakford Bridge Weir on the River Exe by 1997; Fordton Weir on the River Yeo; Exwick Weir on the River Creedy	Agency, EN, Fishing Interests, Weir Owners	<1k	Improvements at Oakford Bridge Weir were carried out at the beginning of 1997 by the fish farmer, Mr Underhill. No progress has been made at other sites to date.
16aii	Easement of fish passage and incorporation of the structural facility for a fish counter at St James Weir	SWWSL, Agency	<1k	Outline designs have been prepared and a structural survey has been carried out. Works are expected to be completed during 1998.
Obstructions to fish passage on the River Culm				
16bi	Conduct observation survey for the River Culm and identify priority sites for improvements	Agency, Fishing Interests	<1k	A survey was carried out during 1997 and a number of sites identified where improvements are required. There is currently no timetable for any identified work and improvements are dependant upon availability of funds and contributions from relevant parties.
Need to modify current Wimbleball bank release strategy in light on Pumped Storage Scheme				
16ci	Revise current strategy	Agency, SWWSL, Fishing Interests	<1k	Releases were made during 1996 & 1997. Further releases are planned on an annual basis, each release will be monitored to find the best use of the fisheries water bank.

APPENDIX 1

GLOSSARY

Biodiversity	The variability among living organisms from all sources including, <i>inter alia</i> , terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (Article II of the Biodiversity Convention).
Culm Grassland	A habitat which comprises a characteristic mixture of marshy grassland, bog, wet heath and scrubby woodland which collectively supports a wide range of flora and fauna. The habitat is underlain by a geological formation of sandstones and shales.
Eutrophication	The enrichment of a water body with plant nutrients which alleviates a shortage of a limiting substrate and thereby causes the excessive growth of algae which results in a general decline in water quality.
Habitat	A certain type of location in which an organism prefers to live, and characteristic of it.
Macro-invertebrate	A large invertebrate, eg. jellyfish, snail, fly
Salmonid	Game fish of the salmon family, eg. salmon, trout and sea trout
Section 105 Surveys	Section 105 of the Water Resources Act 1991 allows for Standards of Service Assets and Flood Risk Surveys.
SPA	Special Area of Conservation. Area designated under EC Directives.

ABBREVIATIONS

BAP	Biodiversity Action Plan
BCU	British Canoe Union
BMIF	British Marine Industries Federation
CEFAS	Centre for Ecology, Fisheries and Science
CGWG	Culm Grassland and Wetland Group
CPRE	Council for the Protection of Rural England
CSG	Catchment Steering Group
CSO	Combined Sewer Overflow
DAS	Devon Archaeological Society
DBWPS	Devon Bird Watching and Preservation Society
DCC	Devon County Council
DoCC	Dorset County Council
DoETR	Department of the Environment, Transport and Regions
DSFAC	Devon Sea Fisheries Advisory Committee
DWT	Devon Wildlife Trust
ECC	Exeter City Council
EDDC	East Devon District Council
EN	English Nature
ENP	Exmoor National Park
FA	Forestry Authority

HNDA	High Natural Dispersion Area
JNCC	Joint Nature Conservation Committee
LA's	Local Authorities
LEAP	Local Environment Agency Plan
MAFF	Ministry of Agriculture, Fisheries and Food
MDDC	Mid Devon District Council
NFU	National Farmers Union
NVZ	Nitrate Vulnerable Zones
PAH	Polyaromatic Hydrocarbons
PCC	Plymouth City Council
RCHME	Royal Commission on the Historic Monuments of England
RETA	River Exe & Tributaries Association
RQO's	River Quality Objective
RSPB	Royal Society for the Protection of Birds
SHDC	South Hams District Council
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
SWWSL	South West Water Services Ltd
TBC	Torbay Borough Council
TDC	Teignbridge District Council
WEBS	Wetland Bird Survey
WERG	Wetland Ecosystem Research Group
WPDC	Weymouth and Portland District Council

REFERENCES

1. European Council Directive on Pollution Caused by the Discharge of Certain Dangerous Substances in to the Aquatic Environment (76/464/EEC). Official Journal of the European Communities No. L129.
2. European Directive on the Conservation of Natural Habitats and Wild Flora and Fauna (92/43/EEC).