

local environment agency plan

DART

3RD ANNUAL REVIEW

JULY 2001



**ENVIRONMENT
AGENCY**

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July 2001



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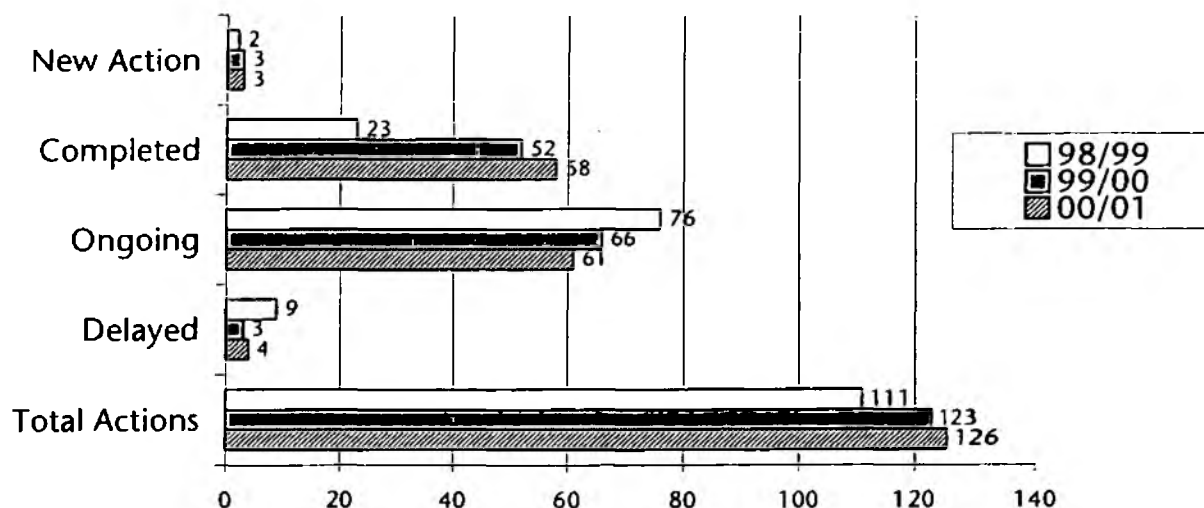
SUMMARY

The Dart LEAP aims to promote integrated environmental management in the area around the River Dart and the Dart Estuary. It seeks to develop partnerships with a wide range of organisations and individuals who have a role to play in the management of this area of Devon. It is vital that the needs of all aspects of the area, including flora and fauna, are balanced to ensure continued protection of these precious assets.

Since the publication of the Dart LEAP Action Plan in July 1998 we have made good progress on the actions. We have already completed 45% of the actions published in the plan and work is progressing on a further 49%, many through collaborative projects with other organisations. However, this leaves 5% of actions which we have not yet been able to progress. We will be looking at ways in which these can be progressed over the next year.

OFWAT have now agreed the funding and timetable for work to be carried out by South West Water Ltd (SWWL) under Asset Management Programme 3 (AMP3) and this will lead to improvements at 10 sewage treatment works within the LEAP area, improvements have already been completed at one site. In addition to this improvements will be made under AMP3 to a number of intermittent discharges, some of which may impact on shellfish waters in the estuary. (See Issue 1). We are also hoping that a number of private sewage discharges will be connected to the mains sewerage network.

DART LEAP PROGRESS CHART



1. INTRODUCTION

This is the Third Annual Review of the Dart LEAP Action Plan. It summarises progress made with actions and should be read in conjunction with the Dart LEAP Action Plan and previous Annual Reviews.

1.1 The Environment Agency

The Environment Agency has a wide range of duties and powers relating to different aspects of environmental management. These duties, together with those areas where we have an interest but have no powers to act, are described in more detail in Section 5. We are required and guided by the Government to use these duties and powers in order to help achieve the objective of sustainable development. Sustainable development has been defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

At the heart of sustainable development is the integration of human needs and the environment within which we live. The creation of the Agency was, in part, recognition of the need to take a more integrated and longer-term view of environmental management at a national level. We have to reflect this in the way we work and in the decisions we make.

Taking a long-term perspective requires us to anticipate risks and encourage precaution, particularly where impacts on the environment may have long-term effects, or when the effects are not reversible. We must also develop our role to educate and inform society as a whole, as well as carrying out our prevention and enforcement activities, to ensure continuing protection and enhancement of the environment.

One of the key outcomes of the United Nations "Earth Summit" held in Rio de Janeiro in 1992 was agreement by governments that, to solve global environmental problems, local action is crucial: we must all therefore think globally, but act locally.

An Environmental Vision, The Environment Agency's contribution to Sustainable Development. Our vision for the environment and a sustainable future '*a healthy, rich and diverse environment in England and Wales, for present and future generations*' was published in January 2001.

Nine themes have been identified to contribute to this long-term goal.

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

Long-term objectives have been set for each theme and progress towards these objectives will be measured using a set of key indicators. We will use this vision as a basis for co-operative projects with others, including those we regulate, to help protect the environment and to enhance its quality wherever we can.

We have consulted widely about the content and direction of the vision, and it therefore reflects views from across society, as well as from within the Agency.

1.2 Local Environment Agency Plans

We are committed to a programme of Local Environment Agency Plans (LEAPs) in order to help us to identify and assess, prioritise and solve local environmental issues related to our functions, taking into account the views of our local customers. The LEAP process involves several stages as outlined below.

Some issues can be resolved through our statutory and routine work programme, whilst others require action over and above our day-to-day business. Funding for the latter is not always certain. Usually, because of the short-term nature of our funding, we can only firmly commit ourselves to action in the current and next financial years. Our priorities, policies and budget may change, and these changes will be reflected at each Annual Review.

In most cases we show the anticipated cost to the Agency for an action. These are estimated costs to give the reader an idea of the relative size and resource implications for each action. Some issues require solutions beyond the scope of our existing budgets or technology – they are nevertheless valid issues and earn their place in this plan, in the hope that a solution may be found in the future.

The Consultation Report - The publication of the LEAP Consultation Report in June 1997 marked the start of a three-month period of formal consultation, which enabled external organisations and the public to work with us in planning the future of the local environment. At the end of the consultation period, we produced a Statement on Public Consultation that gave the results of the process.

The Action Plan - The Action Plan followed on from the Consultation Report, taking into account the results of the consultation. It included numerous actions identifying costs, timescales and partner organisations. Agreed actions are incorporated into our annual business plans.

The Annual Review - We monitor implementation of the Action Plan and report on the year's progress in a published Annual Review. The Annual Review also identifies any additional issues and actions needed to maintain progress in light of any changes within the LEAP area. **We invite people to contact us at any time to raise new issues or suggest new actions – this ensures the LEAP process is an active one, which evolves to meet the changing needs of the local environment.** After five years, we plan to carry out a major review of the progress we have made.

The following pages outline updates on the various issues, together with the relevant actions as set out in the Action Plan. A summary of progress is given for each action, together with target dates for future work, if applicable. We will review progress again in 2002 and publish the Fourth Annual Review of the Dart LEAP.

1.3 Devon Area Business Plan

The LEAP process defines our priorities, and together with our national and regional priorities form the Devon Area Business Plan. This plan sets out the activities which will be carried out in this area each year.

The Devon Area Business Plan provides a focus to our work and allows managers to ensure the delivery of the required work and to identify and allocate resources. It enables us to manage change, as tasks can be re-prioritised and resources re-allocated as needs arise.

1.4 The LEAP Steering Group

The LEAP Steering Group act as a communication link between ourselves, our committees and the local community. The members of the group represents a range of commercial, local authority, recreational and environmental interests. They commented upon the Consultation Report and Action Plan prior to public release, and monitor the implementation of the Action Plan, providing us with specific advice on the importance of issues within the LEAP area. They will help to promote and develop initiatives of benefit to the environment within the LEAP area. The Steering Group members are:

Name	Representing
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Mr G Attree	National Farmers Union / Local Farmers
Mr M Brabin	Dartmoor Preservation Society
Mr T Burnell	Dart Angling Association
Mr K Carter	South Hams District Council
Mr A Dutfeld	Industry / Buckfast Spinning
Mr I Edmonds	British Canoe Union
Ms S Goodfellow	Dartmoor National Park
Mr G Heywood	Local Conservation Interests

Mr R Humphrey	Dart Estuary Manager
Mr D Pakes	Dart Fisheries Association
Mr D Ramsden	Barn Owl Trust
Mr H Lloyd Jones	DEFRA (formerly FRCA/MAFF)
Mr R Scoble	Netsmen
Mr P Simpson	Riparian Owner
Mr P Smith	South Hams District Council / Heritage Coast
Mr C Sturmer	Duchy of Cornwall
Mrs M Tomlinson	Dartmouth Town Council
Mr M Wilson	Dartington Parish Council
Mr M Williams	South West Water Ltd

1.5 Working With Others

We can only deliver long-term environmental improvement by working with others, building partnerships with those who share common objectives, and developing links to the community.

Local Agenda 21 - This is the global action plan endorsed at the United Nations Conference on Development and the Environment in 1992. It is designed to achieve sustainable development within all levels of our society. Within the LEAP area, local authorities are assisting local communities to develop strategies and action plans for sustainable development.

Development Plans - These are produced by Local Authorities to guide the way in which land is developed. We have limited control over the development of land, but we provide advice and guidance to Local Authorities and work with them to develop policies that minimise the impact of development of the environment.

Non-Statutory Plans - We work with a number of other organisations to develop partnerships and collaborative projects. The LEAP is one of a number of separate, but related environmental initiatives that aim to protect and management the environment. Other non-statutory plans include:

- Devon Biodiversity and Earth Science Action Plan
- Dartmoor Biodiversity Action Plan
- Devon's Local Agenda 21 Network Issues Report
- Dart Estuary Management Plan

2. OVERVIEW OF THE LEAP AREA

Area	475 km²
Length of river monitored for classification purposes	210 km
Average annual rainfall	1760 mm approximately
Approximate population	31,000 (1991 census)
Main settlements	Totnes, Dartmouth, Buckfastleigh, Ashburton
Administrative areas	South Hams District Council, West Devon Borough Council, Teignbridge District Council, Torbay Council, Dartmoor National Park

This LEAP covers the catchment area of the River Dart, an area of approximately 475 km². The River Dart is formed from the East and West Dart Rivers that rise on South East Dartmoor.

Dartmoor is an upland granite mass that rises to over 600 m. It is an area of open moorland with high rainfall and acid, peaty soil. Much of it is used for extensive grazing by cattle, sheep and ponies. Many of the headwaters also provide valuable spawning grounds for salmonid fish.

The perimeter of Dartmoor is typified by steep, undulating land with many of the valley sides comprising deciduous woodland. The area surrounding the open moorland is typified by small enclosures and is mainly used for small-scale livestock farming. Field sizes become progressively larger away from the moorland.

The River Dart flows off Dartmoor under the A38 Devon Expressway, close to Buckfastleigh. This not only marks the edge of Dartmoor National Park, but also serves as an approximate boundary between the granite mass and the relatively low lying but undulating area known as the South Hams. This area is noted for its rich red soils which support more intensive livestock and arable farming. A number of watercourses (River Hems, River Wash, Bidwell Brook and Am Brook) have their source here. The River Dart continues through the South Hams to the Dart Estuary at Totnes. The steep valley sides of the estuary result in a minimal floodplain. Two major tributaries join the River Dart in its estuary; these are the River Hems and the Harbourne River.

Venford Reservoir is the only reservoir in the Dart Catchment. It is one of the smaller public water supply reservoirs operated by South West Water Ltd (SWWL). There is a second public water supply abstraction on the lower Dart at Littlehempston where SWWL abstracts water both directly from the River Dart and from a suite of 'radial collectors' in the vicinity.

2.1 Compliance with EC Directives

EC Shellfish Waters Directive¹ – The designated shellfish water near Waddeton was compliant with the standards of this Directive in 1999 and 2000.

EC Bathing Waters Directive² – We were unable to sample the bathing water at Dartmouth Castle and Sugary Cove in 2000 because the beach was closed due to the footpath down the cliffside being unsafe. We are still unable to sample the bathing water, but will commence sampling once the footpath is re-opened.

EC Dangerous Substances Directive³ – There were no failures of this Directive in the Dart catchment for List I and List II substances in 1999 or for the List I substances in 2000. We have not assessed compliance for List II substances for 2000 yet. This will be reported in the fourth Annual Review.

EC Surface Water Abstraction Directive⁴ – In 2000, two sites failed to comply with the requirements of the Directive;

The River Dart at Littlehempston failed the standard for lead. A single elevated result was recorded in December 2000 following heavy rain on the previous day. The cause of the elevated result is thought to be metals leaching from the acidic soils. No action is proposed.

Venford Reservoir failed to comply with the coloration standard of the Directive in 2000. This is thought to be natural resulting from runoff from the surrounding moorland. A waiver is to be applied for and no further action is proposed.

EC Freshwater Fish Directive - There were been no failures of this Directive in the Dart catchment in 1999 or 2000.

EC Habitats Directive - This Directive means that we have to review all authorisations and other permissions which we have previously issued, as well as our own activities, to establish whether or not they are adversely affecting Special Protection Areas (SPAs – designated under the EC Birds Directive) or candidate Special Areas of Conservation (cSACs – to be designated under the EC Habitats Directive), collectively known as Natura 2000 sites. If existing authorisations are causing significant damage, we are required to modify or revoke them. We have embarked on a twelve-year programme (1998-2010) to carry out this review, consisting of a four stage process. We plan to complete stage 1 by September 2001. A moderation exercise has resulted in additional features and new sites being proposed for designation. We assess all new applications for their potential impact on Natura 2000 sites as part of our routine work.

2.2 1999 and 2000 Compliance with River Quality Objectives (RQOs)

We manage water quality by setting RQOs, which apply to 210 km of rivers in the Dart LEAP area. Map 2 shows where current water quality fails to meet its RQO. RQOs are set using a classification scheme known as the River Ecosystem (RE) Classification which comprises five hierarchical classes (see table below). These classes reflect the chemical quality needed by different types of river ecosystems. Where we are unable to identify solutions or resources to resolve water quality problems we have set a long-term RQO.

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

The RQO compliance assessment for 1999 and 2000 is shown on Map 2. There is not a separate map for each year as the RQO compliance assessment was the same for both years.

A comparison with the 1998 RQO compliance assessment used in the Dart First Annual Review (October 1999) shows that water quality improved in 1999 compared to 1998 in the stretch of the Blackbrook River from source to Dart confluence. This stretch was compliant with its RQO in both 1999 and 2000. Water quality of the Bidwell Brook from source to Tigley also improved as the stretch was a marginal failure in 1999 and 2000 compared to a significant failure in 1998.

Water quality deteriorated in four stretches in 1999 compared to 1998: The River Wash from source to normal tidal limit, River Hems from source to Portbridge, Am Brook from Collacombe Bridge to confluence with the River Hems and Harbourne River from Leigh Bridge to normal tidal limit. The RQO compliance for these stretches remained the same in 2000 compared to 1999.

Water quality has shown no improvement in the stretch of the Bidwell Brook from Tigley to confluence with the River Dart.

In certain circumstances we can set aside data, that is we will not take into account some or all of the results for a particular determinand when we assess compliance with an RQO. This provision has been used for five stretches in 1999 which all fail to meet their RQO as a result of low pH values. The low pH of the water is a natural phenomenon thought to be caused by the underlying granite rocks of Dartmoor which give rise to

very acidic soils and watercourses, but may be exacerbated by afforestation. The five stretches are; The East Dart River from source to Postbridge, River Swincombe from source to West Dart River confluence, Cherry Brook from source to West Dart River confluence, the Cowsic River from source to West Dart River confluence and the West Dart River from source to Two Bridges.

The River Hems from Source to Portbridge: This stretch marginally failed to comply with its long-term RQO of RE1 in 1999 as a result of elevated BOD. The water quality of this stretch may be impacted by the STW discharges at Landscope (Gullaford Farm) (see Issue 1). The elevated BOD results may also be the result of diffuse agricultural pollution (see Issue 7). This stretch was compliant with its long-term RQO in 2000. We will continue monitor the water quality of the stretch as part of our routine activities and consider further action should the stretch fail again in the future.

The Harbourne River from Leigh Bridge to Normal Tidal Limit: This stretch significantly failed to comply with its RQO of RE1 in 1999 and 2000 as a result of elevated Biochemical Oxygen Demand (BOD). The high BOD results were accompanied by high rainfall and the ammonia levels of the samples were also elevated. The cause of the high BOD levels is thought to be the storm discharges from Harbertonford STW. Improvements to Harbertonford STW are to be carried out in AMP3 (see Issue 1).

The River Wash from Source to Normal Tidal Limit: This stretch marginally failed to meet its RQO of RE1 in 1999 and 2000 as a result of elevated BOD. Two high results were recorded in 1999 and coincided with high rainfall. Ammonia levels of the samples were also slightly elevated. The cause of the poor water quality is unknown. We are proposing to investigate the cause of the failure this year (see Issue 21).

The Bidwell Brook from Source to Tigley: This stretch marginally failed its RQO of RE1 in 1999 and 2000 as a result of elevated BOD. An investigation in 1998 found that the most likely cause of the high BOD was diffuse agricultural pollution. The majority of high results in 1999 were associated with high rainfall and high ammonia levels so this supports the conclusion from the investigation. Work to address the farm related problems identified by the investigation is on-going but has been delayed due to the very wet weather and the foot and mouth crisis. **See Action 7h.**

The Bidwell Brook from Tigley to River Dart confluence: This stretch marginally failed to comply with its long-term RQO of RE1 in 1999 and 2000 as a result of elevated BOD. An investigation in 1998 identified that water quality in this stretch is affected by three principle factors (land runoff, poor water quality in the Shinnars Bridge tributary due to an agricultural discharge and the operation of the Dartington/Totnes combined main sewer overflows (CSO)). Work is on-going to improve the quality of the agricultural discharge to the Shinnars Bridge tributary. The CSOs which impact on water quality are in the AMP3 programme for improvement by January 2003 (**see Action 7h**). We also suspect that a septic tank which discharges to the stretch may be impacting on water quality and we are in liaison with the owners to improve the quality of the discharge.

The Am Brook from Collacombe Bridge to River Hems Confluence: This stretch significantly failed to comply with its long-term RQO of RE1 in 1999 and 2000 as a result of elevated ammonia. The failing samples are associated with rainfall on the preceding day. A possible cause of the poor water quality is storm discharges from Ipplepen STW to a tributary of the Am Brook upstream of the sampling point. Ipplepen STW is to be improved under AMP3 (see Issue 1).

3. PROGRESS TABLES

The following pages give updates for the actions from the Dart LEAP for the year up to July 2001. The current status of each action is indicated in the left hand column as follows:

- × New Action
- Completed/Routine
- ▼ Started/Ongoing
- Delayed/No Progress

All actions which were noted as completed in the 1st and 2nd Annual Reviews are listed in section 4 on page 30.

Key to Tables:

n/a	Cost not applicable to the Agency	<1 k	Cost to Agency under £1000
u/k	Cost to Agency is unknown	p.a.	Per Annum

Issue 1: Impact of Effluent Discharges

We regulate the disposal of effluent to surface and groundwaters by issuing consents to control discharges, including treated sewage from water companies and private properties, industrial and farm wastes. Rivers and coastal waters can naturally render the main constituents of many effluents harmless and with proper controls over effluent disposal the environment will not be harmed.

We aim to maintain and, where appropriate, improve the quality of water and we achieve this by setting water quality targets for rivers based on River Quality Objectives (RQOs) to protect recognised uses, standards laid down in EC Directives and international commitments (see Section 2).

Sewage treatment improvement plans – The Water Companies' investment programme for the period 2000-2005 is known as Asset Management Plan 3 (AMP3). AMP3 has been developed along guidelines agreed between the Environment Agency, the Department of the Environment, Transport and the Regions (now the Department for the Environment, Food and Rural Affairs (DEFRA)), the water services companies and the Office of Water Services (OFWAT).

We have agreed with DETR (DEFRA) which sewage discharges require improvement during AMP3. OFWAT has now completed a review of water prices which allows for this programme of environmental investment and enables the companies to make the environmental improvements by 2005. Many of these schemes will be delivered before 2005.

South West Water Ltd will be carrying out improvements to the following STWs in the Dart LEAP area under AMP3 (2000-2005):

Discharge	Receiving Water	Required Treatment Level	Due By
Ashprington	River Dart	Improvements to storm tanks under the EC Urban Waste Water Treatment Directive	December 2005
Dartmouth & Kingswear	River Dart	Secondary treatment required under the EC Urban Waste Water Treatment Directive and UV disinfection required to meet the standards of the EC Shellfish Waters Directive and the guideline standards of the EC Bathing Waters Directive.	March 2002
Dittisham (Main & Riverside)	River Dart	Secondary treatment required under the EC Urban Waste Water Treatment Directive and UV disinfection required to meet the standards of the EC Shellfish Waters Directive.	August 2002
Galampton (Dart)	River Dart	UV disinfection required to meet the standards of the EC Shellfish Waters Directive.	August 2002

Discharge	Receiving Water	Required Treatment Level	Due By
Harbertonford	Harbourne River	Improvements to storm tank required under the EC Urban Waste Water Treatment Directive and further improvements required to protect downstream water quality.	December 2005
Ipplepen	Tributary of the Am Brook	Storm tank improvements required under the EC Urban Waste Water Treatment Directive and improvements to secondary treatment required to protect downstream water quality.	March 2005
Princetown	Blackbrook River	Secondary treatment required under the EC Urban Waste Water Treatment Directive and further improvements required to protect water quality downstream.	March 2001 (Completed on time)
Scorriton	Holybrook	Secondary treatment required under the EC Urban Waste Water Treatment Directive and further improvements required to protect water quality downstream.	March 2004
Stoke Gabriel	River Dart	Secondary treatment required under the EC Urban Waste Water Treatment Directive and UV disinfection required to meet the standards of the EC Shellfish Waters Directive.	August 2002
Totnes	River Dart	Improvements to secondary treatment required to protect downstream water quality and UV disinfection required to meet the standards of the EC Shellfish Waters Directive.	October 2002

In addition, a number of intermittent discharges in the Dart river catchment, some of which may impact on shellfish waters, will be improved under the AMP3 programme.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
1f ▼	Monitor effluent from Buckfastleigh (Kilbury) STW for organophosphate's and synthetic pyrethroids.	Agency	01/07/98	31/03/03	4k p.a.	We continue to monitor the final effluent from Buckfastleigh (Kilbury) STW for these substances as part of our routine work. We are not aware of any problems in 2000.
1h ▼	Investigate alternative options for disposal of solid wastes from scouring process at Buckfast Spinning.	Buckfast Spinning, Scourers Env. Network	01/07/98	31/03/03	n/a	Composting trials were carried out by a composting specialist on all sludge and wool dust from the process. These trials had to be discontinued in March 2001 due to foot and mouth. We understand that the trials will re-commence when the foot and mouth crisis is over.
1i ▼	Investigate impact of Landscope (Gulliford Farm) STW on water quality in the River Hems.	Agency	01/07/98	31/03/99	1k	Chemical monitoring shows that this discharge continues to have an impact on the receiving water. A formal biological assessment is currently being considered.
1j ▼	Review results of monitoring of the River Hems to see if RQO failures recur.	Agency	01/04/99	31/03/00	1k	The River Hems from source to Portbridge marginally failed to comply with its long-term RQO in 1999. The stretch was compliant with its long-term RQO in 2000.
1m	Object to further	Agency,	01/07/98	31/03/03	<1k	We are currently undertaking a

No.	Action	Lead by / Other	Start Date	End Date	Cost	Progress
▼	development leading to increased sewage flows in Princetown, Landscope, Cornworthy, Dartmouth, Kingswear, Scorrison and Poundsgate; until improvements to STWs are carried out.	SWWL, TDC, SHDC, DNPA			p.a.	review of those settlements where we object to further development and will provide a further update in the next Annual Review.
1n ▼	Improvements to be carried out under Urban Waste Water Treatment Directive to STWs at: Princetown, Harbertonford, Broadhempston, Scorrison, Cornworthy, Ipplepen, Poundsgate, Dartmouth, Kingswear, Ashprington, Stoke Gabriel, Dittisham - By 2005.	SWWL	01/07/98	31/03/05	n/a	Under SWWL's AMP3 programme improvements to Princetown STW have been completed. Improvements to Harbertonford, Scorrison, Ipplepen, Dartmouth, Kingswear, Ashprington, Stoke Gabriel and Dittisham STWs will be carried out as part of AMP3 by the dates given in the table on pages 10 & 11. SWWL have carried out work to improve the quality of the final effluent from Cornworthy STW; this work has been funded from a separate programme. The improvements we proposed at Broadhempston and Poundsgate STWs were viewed as a lower priority by Government and will not be completed under AMP3.
1p ▼	Negotiate with private dischargers to ensure that improvements are made - By 2005.	Agency, Private Dischargers	01/07/98	31/03/05	u/k	We have recently written to 53 households in Dartmouth who are not connected to the mains sewer and who discharge untreated effluent to the Dart Estuary. We advised them of the improvements they need to make to their discharges so that the standards of the EC Bathing Waters Directive ² and the EC Shellfish Waters Directive ¹ will be met. We have advised them of the options available and are awaiting their decision.

Issue 2: Concerns over effluent discharges in the vicinity of the Dart Estuary Shellfishery

Actions relating to the EC Shellfish Waters Directive are now being progressed through actions in Issue 1.

Issue 3: Risk of Cryptosporidium entering Public Water Supply

Occasionally outbreaks of Cryptosporidiosis occur in human populations, and the public water supply is often implicated in these situations. The risk of *Cryptosporidium* entering the water supply is thought to be greatest where there is a direct river abstraction, particularly in an agricultural catchment. South West Water Ltd have a licence to abstract water for public supply from the River Dart.

Increasing awareness of the risk of Cryptosporidium entering groundwater and contaminating borehole water supplies has recently led to the need for risk assessment of potable groundwater sources. As part of a nation-wide initiative, SWWL have been required by the Drinking Water Inspectorate (DWI) to complete an assessment of the risk posed to their groundwater sources and identify corrective action to mitigate risk where required. Following on from this work, we have initiated a review of our own network of groundwater monitoring positions across the South West to ensure the potential risk of transmission of Cryptosporidium to groundwater is minimised.

There are currently no actions for this issue, however, should the need arise they will be added for future annual reviews.

Issue 4: Problems associated with Development

The **Contaminated Land Regulations** came into force on 1 April 2000. The full extent of Contaminated Land in the catchment is currently not known. This will be assessed by the District Councils, who are developing a strategy for dealing with Contaminated Land issues as part of the implementation of the new regime. The District Councils are responsible for holding the register of Contaminated Land sites. We are responsible for the regulation of Contaminated Land sites classified as 'Special Sites' and we will concentrate on these. **Action 4d i.**

We are keen to promote the reduction of waste at source and continue to support **business waste minimisation** groups. Groundwork EBS (formerly known as PAYBACK), a business environment association working in partnership with Business Link, local authorities and ourselves initiate schemes for businesses to reduce waste at source, as part of a wider initiative covering the whole county. The first South Devon Waste Minimisation Group ran a successful project in 1999 and repeated the success with a second group in winter 2000. Seven companies took part in the second project and as a result have set up a number of waste initiatives. The total potential savings identified by the companies were over £200,000. **Action 4j.**

The **Producer Responsibility Obligations (Packaging Waste) Regulations 1997** came into force in March 1997, and were amended in 1999, increasing the number of businesses obligated under the legislation. These require certain companies who handle packaging to ensure that a set proportion is recovered and recycled. Producer responsibility is likely to be applied to other waste streams in the future. We undertake site visits to ensure that obligated businesses are meeting the requirements of the Regulations. In the 2000/01 financial year, we undertook one visit to an obligated business in the Dart catchment.

The **1996 Special Waste Regulations** control the transfer and disposal of wastes which cause greatest environmental damage or are dangerous to human health (known as special wastes). We undertake site visits to ensure that the requirements of the Regulations are being met. In the 2000/01 financial year, we undertook three visits to companies in the Dart catchment who produce special waste to ensure that they are following the requirements of the Regulations.

Air pollution can damage flora, fauna and buildings and can have significant effects on soils and water. Sources of air pollution include traffic, industrial processes and power generation. These sources may be present within or outside the catchment. Ambient concentrations of air pollutants are generally lower in the South West of England than in other part of England and Wales, although local data is limited. Since December 1997, each local authority has been carrying out a review and assessment of air quality in their area, to ensure that national air quality objectives will be achieved. If the objectives are not likely to be achieved, they must declare an Air Quality Management Area at that site. South Hams District Council, Torbay Council and Teignbridge District Council have all completed their air quality reviews and they have concluded that there is no need to declare any air quality management areas in their districts.

Following the recent **flooding** incidents at Harbertonford, we carried out a number of small scale works to improve road drainage and surface water problems in the village. We are looking at possible options for a flood defence scheme for the village and studies have been underway for some time to ascertain the exact nature of the problem to enable us to come up with the best solution. **Action 4k.**

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
4b ▼	Improve knowledge of status of lichen communities sensitive to air pollution in the catchment.	DNPA, NT, Agency	01/07/98	31/03/01	u/k	Dartmoor National Park Authority have carried out an exercise to identify lichen on Dartmoor. They have also produced guidance notes on the Management of Trees with Lichen Communities. Copies of this guidance can be obtained from Dartmoor National Park Authority.
4d i ▼	Work with Local Authorities to achieve effective regulation of contaminated land sites in the catchment.	Agency, LA's	01/04/00	31/03/03	u/k	The District Councils are currently developing their strategies for dealing with Contaminated Land issues. Sites will be assessed once the strategies are complete.
4j ▼	Support PAYBACK(now known as Groundwork EBS)/Business Link initiative to reduce waste at source.	G'work, Business Link, Agency, DCC, SHDC, TC, TDC	01/07/98	31/03/01	5k	The South Devon Waste Minimisation Group ran successful projects in 1999 and 2000. Seven companies took part in the second project and initiated a wide range of waste minimisation schemes. The total potential savings identified by the companies were over £200,000.
NEW ACTION						
4k X	Seek solution to resolve problems of flooding at Harbertonford	Agency, LA's	01/04/01	T.B.A.	u/k	We are currently advising on a range of options for a flood defence scheme. Providing an economically and environmentally acceptable solution can be found, work should go ahead in 2001. We will provide an update on this for the fourth Annual Review.

Issue 5: Impact of Mineral Extraction

The only working quarry within the Dart LEAP catchment is Linhay Quarry at Ashburton. This quarry lies within the boundary of Dartmoor National Park and has a significant impact on the surrounding environment. The disposal of runoff from the site has historically been a problem, causing high levels of suspended solids in local watercourses. We have been working with the owners to ensure that improvements are made to the discharge from the site and these improvements have now been carried out.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
5d ▼	Promote and implement Devon BAP for Pits and Quarries and Caves and Mines.	DWT, RIGS, EN, DNPA, Agency	01/07/98	31/03/03	2k	Dartmoor National Park have carried out some work towards this action at two sites within the National Park area.

Issue 6: Impact of Abandoned Mines

Actions for this issue have been completed. See section 4.

Issue 7: Impact of Farming and Forestry on Rivers and Wetlands

The Dart catchment is predominantly rural with large areas used for agricultural and forestry purposes. Farmers throughout Devon have made great improvements in waste storage and disposal and this has resulted in a significant reduction in the number of point source pollution incidents, but work is still needed to solve the problems caused by diffuse pollution. As part of the Dart Biodiversity Project a number of sites have been targeted for buffer zone creation with a view to reducing the problems of diffuse pollution. Included in this work was the Dartmoor Prison farm (**action 7a**).

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
7a ▼	Work with Prison Authority to seek better farming practices and facilities to reduce the risk of diffuse pollution entering the Blackbrook.	Prison Farm, DNPA, Agency	01/07/98	31/03/00	<1k	The risk of diffuse pollution from the Prison Farm entering Blackbrook has recently reduced because the herd size supported by the farm was reduced (prior to foot and mouth). A buffer zone has been established along the Blackbrook. The Blackbrook was compliant with its RQO in 1999 and 2000. Routine pollution prevention work and monitoring will continue.
7b ▼	Encourage uptake of ESA agreements.	DEFRA, Agency, DNPA	01/07/98	31/03/03	<1k p.a.	This is carried out as part of our routine activities.
7c ▼	Work with MAFF (now DEFRA) to ensure agri-environment schemes have appropriate prescriptions and that payments are set at correct level.	Agency, DNPA, EN	01/07/98	31/03/03	<1k p.a.	This is carried out as part of our routine liaison work with DEFRA.
7d ▼	Consider establishing buffer zones alongside rivers to reduce damage to banks by stock, reduce soil erosion and reduce diffuse pollution.	Agency, DNPA, Landowners	01/07/98	31/03/03	u/k	Buffer zones have been established along the Blackbrook on the Prison Farm and on the West Webbern at Broadaford Farm as part of the Dart Biodiversity Project.
7e ▼	Facilitate the securing of funding for bankside fencing to reduce erosion, where appropriate.	Agency, Landowners	01/07/98	31/03/03	u/k	We expect sites by Lower Cherry Brook Bridge and along the Wallabrook to be fenced later this year. Further sites have been identified for fencing, but due to foot and mouth we have not yet been able to carry out this work.
7f	Continue gravel rehabilitation work to remove the build-up of silt to re-establish the gravel's for	Agency, DFA, DAA, Netting Interests	01/07/98	31/03/03	3k p.a.	Gravel works (pump/rake) have been carried out along the Wallabrook, Dury Brook, Blackbrook (prison grounds)

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
▼	salmonid spawning and monitor the effectiveness of this work.					and Cherry Brook downstream of Higher Bridge. Gravel rehabilitation (lift/drop with JCB) has been carried out at Bellever on the East Dart, downstream of Lower Bridge on the Cherry Brook and on the West Webburn, which included some coppicing.
7h ▼	Implement recommendations arising from investigations of the Bidwell Brook.	Agency	01/07/99	31/03/00	<1k	Work to address the farm related problems which were identified by the investigation is still ongoing. It has been delayed due to the very wet weather and foot and mouth. The Dartington to Totnes CSO's which impact on water quality in the lower stretch of the Bidwell Brook are due for improvement as part of the AMP3 programme. These improvements should be completed by January 2003.

Issue 8: Potential Eutrophication of the Dart Estuary

We collected chemical and biological data from the Dart Estuary between 1998 and 2000. This data has been analysed and compared against the criteria for eutrophication. A final report has been produced and is currently being evaluated by our National Panel as to whether the report should be submitted to DETR (now DEFRA) for their consideration regarding Sensitive Area or Polluted Water designation. The report concluded that the Dart Estuary is showing signs that it may be suffering from eutrophication and is at risk of becoming more eutrophic in the future.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
8 ▼	Conduct chemical and biological monitoring to investigate the nomination of the estuary as a Sensitive Area or Polluted Water.	Agency, DEFRA	01/07/98	31/03/02	25k	Data analysis has been completed and a final report produced. Our National Panel is evaluating whether the estuary should be submitted for consideration as a Sensitive Area or Polluted Water designation.

Issue 9: Concern over Low Flows

In the Dart Catchment low flows are only an issue in dry summers. There are concerns that these low flows have been exacerbated by changes in land use and drainage. The potential for water retention on the moor is thought to have declined, possibly resulting in a reduced retention time for water in the catchment as a whole.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
9a ▼	Conduct research into the effects of 'swaling' and changes to moorland vegetation on both catchment hydrology and nutrient leaching. Develop and implement appropriate actions following completion of research.	Plymouth University, Exeter University, EN, Agency, DNPA, DEFRA	01/07/98	31/03/02	2k p.a.	Field work has been successfully completed and the Phd is being written up. We expect a report on the findings later this year. As soon as we have received the report on the study we will be able to see what action needs to be taken.
9b ●	Develop and implement appropriate actions following completion of research.					This action has been merged with action 9a.
9c ▼	Support research into climate change and assess acceptable water flows in watercourses.	Agency	01/07/98	31/03/01	u/k	Work on this is ongoing.

Issue 10: Barriers to Fish Migration

There are a number of weirs and other obstacles along the River Dart and its tributaries which are complete barriers to the migration of salmon and sea trout.

One weir which is causing particular concern to fishing interests is Kilbury Weir. This weir is falling into disrepair and one part of the structure, the right bank flank wall, is likely to collapse in the medium term. There are no flood defence concerns with this, but fisheries interests are concerned that it may lead to a lowering of the water level above the weir, which is an important fishing stretch. The weir can restrict the passage of migratory fish in low flow conditions. Should the flank wall collapse and a bypass be created around the weir, fish passage may improve.

There are also some safety concerns for recreational users, including canoeists and those taking part in the Dart Raft Race. The British Canoe Union (BCU) has recently been granted permission to carry out some safety improvements on the weir, involving the removal of metal obstructions. No effect on other interests is anticipated.

Kilbury Weir is privately owned and the owner does not intend to carry out any repairs. The lack of protection for such structures has been raised with both English Heritage and Devon County Council archaeologists. The problem has been acknowledged but there does not appear to be an easy solution. Certainly the Agency has no funds to allocate to carry out work on the structure, although we will continue to liaise with all interested parties. (The only realistic way that repairs could be funded would be if the weir were listed for its historical significance. An approach has been made to English Heritage and it seems this is very unlikely. We will continue to liaise with all parties over this issue, however it is unlikely we will be in a position to take any action.)

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
10b ▼	Following National Guidance on screening criteria; advise abstractors of the Agency's screening requirements and work towards implementation.	Agency, Abstractors	01/07/98	31/03/03	4k	Visits to problem sites are ongoing. Buckfast Abbey have taken advice on screening methods from consultants and are considering their options.
10c ▼	Identify remaining obstructions to migration and consider fish pass installation if appropriate.	Agency	01/07/98	31/03/03	u/k	Baffle fish pass completed at Strode Road. Some slight modifications are still required. This work is planned for summer 2001.

Issue 11: Risk of Over Exploitation of Salmon Fishery

Analysis of data from catch returns from rivers across the country has shown a marked decline in the numbers of salmon entering rivers between 1 January and 31 May and returns from the River Dart reflect this decline. With a view to controlling the level of exploitation Net Limitation Orders (NLO) have been brought in on a number of estuaries in Devon. We are consulting with fishing interests and the Regional Fisheries, Ecology and Recreation Advisory Committee on the NLO regulatory proposals for the Dart. We are seeking new measures for implementation for the 2002 season.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
11d	Produce Salmon Action Plan for the River Dart.	Agency	01/07/98	31/03/02	5k	Progress on the Dart SAP has been delayed until 2002/2003 due to grant-in-aid cuts.
11e	Carry out study to identify behaviour and spawning preferences for spring salmon, if funds available.	Agency, Others	01/04/99	31/03/01	15k p.a.	Limited number of spring salmon tagged by rods and nets. No tagged fish returns reported. Tagging to continue into 2001 season.
11g	Develop resistivity fish counter as funds become available (timescale depends on availability of funding).	Agency, WRT, Fisheries Interests	01/07/98	31/03/03	60k	A National Monitoring Review has identified that we will only place fish counters on key rivers - in the south west it will be the Tamar. There is no funding for counters on other rivers.

Issue 12: Additional threats to Fish Stocks

The upper reaches of the River Dart and its tributaries provide suitable habitats for brown trout, and are the main spawning areas for this species. Brown trout populations in the UK as a whole have declined over recent decades and the recent study into the species in Devon rivers aimed to establish whether the perceived declines in adult brown trout stocks were likely to be real. The River Dart was one of the rivers included in the study. The study found that on the upper Dart at Wooder Manor there has been a significant decline in adult wild trout, though trends were negative at all sampling sites and it was recommended that further investigative work was carried out in the upper Dart catchment. We have been able to carry out further work due the foot and mouth outbreak.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
12a	Carry out research into perceived decline instock of brown trout.	Agency	01/07/98	31/03/00	20k	Phase II completed and a number of factors which may be contributing to the decline have been identified. Some recommendations have been made to address these issues which will be implemented on the Cherry Brook in due course.
12b	Discourage stocking with fish other than those originating within the catchment.	Agency, Fishing Associations	01/07/98	31/03/03	<1k	Initial project to transfer Dart juvenile brown trout to a fish farm for on-growing was met with limited success. Final assessment of scheme viability to be made in due course.
12c	Promote habitat enhancement as a preferred method of improving stock	Agency, DEFRA	01/07/98	31/03/03	<1k	Habitat enhancement schemes undertaken at several locations across the catchment,

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
▼	levels.					including coppicing and gravel rehabilitation. See action 7f.
12e ▼	Continue to work positively with fishery owners and anglers to establish the full facts in each situation.	Agency, DEFRA, Landowners, Anglers	01/07/98	31/03/03	<1k	This is carried out as part of our routine work.
12f i ▼	Establish Agency approach to the issue of fish-eating birds following MAFF/DETR (now DEFRA) decision regarding government policy in the light of R&D findings. (This action supercedes 12f).	Agency, DEFRA	01/04/99	31/03/01	u/k	We are still awaiting the outcome of the discussions between DEFRA and other relevant organisations.

Issue 13: Acidification of Dartmoor

Moorland streams are typically acid due to the underlying geology and soils. The natural acidity of Dartmoor could be exacerbated by atmospheric acid deposition. The main components of acid deposition are sulphur dioxide and oxides of nitrogen. These components come mainly from the burning of fossil fuels, the principle sources being power stations, other industrial processes and traffic. Coniferous forests can also increase the level of acid deposition due to way the forest canopy 'scavenges' pollutants from the atmosphere, and the acidic compounds released when pine needles break down.

Whilst the Air Quality Review (see Issue 4) identified no major problems in the LEAP Area, there are concerns that air pollution may have an effect on sensitive species such as mosses and lichens. The National Environmental Research Council have instigated a research programme called Global Nitrogen Enrichment (GANE) to look at the problems of nitrogen deposition and its effect on sensitive species.

Acid deposition across much of Dartmoor is estimated to be at a level at which harmful effects may occur. The moorland ecosystem is particularly sensitive to acid deposition as the soils have little capacity to neutralise acidity. Currently there is no evidence to suggest that pH levels experienced in the Dart are influencing juvenile salmonid stocks. There are concerns that valley mire and blanket bog habitats could be affected.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
13d ▼	Conduct research to improve understanding of acidification of Dartmoor and its effects.	Universities, CEH, Agency, DNPA	01/07/98	31/03/03	u/k	The Centre for Ecology and Hydrology (formerly IFE) have been undertaking national project and the latest progress report has been completed. (We expect a copy shortly)
13e ▼	Assess impact of any proposals for afforestation >10 ha within the acid sensitive area.	Agency, FC	01/07/98	31/03/03	<1k p.a.	This is carried out as part of our routine activities.

Issue 14: Biodiversity and Earth Science

The Countryside and Rights of Way Act 2000, which came into force on 30 January 2001, provides a statutory basis for biodiversity conservation. Until now this work has been undertaken purely as a matter of policy. However, Government Departments now have a duty to have regard to biodiversity conservation. Procedures associated with the notification, protection and management of SSSIs have been improved, and threatened species have been given stronger legal protection. Management of Areas of Outstanding Natural Beauty has also been improved.

We have produced 'Focus on Biodiversity' which summarises our contribution to the national Biodiversity Action Plan (BAP) process. National and County targets for habitats and species have been set and we are progressively adapting them on a catchment scale.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14a ▼	Support the Dart Valley Biodiversity Project.	Agency, DNPA, Duchy, EN Leader II	01/07/98	31/03/01	5k p.a.	We continue to support the work of the Dart Biodiversity Project.

Wet Woodland

Wet Woodland is a habitat dominated by willow and alder and occurs on land with poor or impeded drainage, land which is often difficult to farm. These woodlands are a characteristic feature of the Devon landscape and are commonly found around springs or meandering watercourses. This habitat is often associated with a diverse ground flora as well as a rich community of lichen, mosses and invertebrates. The full extent of this habitat is currently unknown.

Target:

14c: Determine extent of resource and creation opportunities and prioritise conservation action by the end of 2000, with the initial aim of creating 5ha by 2005.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14c ▼	Implement actions from Devon BAP for Wet Woodland by identifying key sites and supporting invertebrate surveys.	Agency	01/07/98	31/03/03	u/k	A seminar held at Slapton Ley Field Centre during 2000 raised awareness of the conservation value of wet woodland. This was a joint venture between the South Hams Woodland Campaign, Slapton Ley Field Centre and the Biodiversity Project of Devon Wildlife Trust.

Reedbeds

Reedbeds are an important habitat supporting a distinctive complement of many rare breeding bird species and in many circumstances, large populations of amphibians and invertebrates. It is a habitat which is not particularly common in Devon. In addition to their wildlife value, reedbeds also represent a sustainable method of water treatment and we are keen to promote reedbed creation where it can produce wildlife/water quality benefits.

Target:

14f: Ensure no net loss of habitat and create 1ha of new reedbed by 2010

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14f ▼	Implement actions from Devon BAP for Reedbeds - including encouragement of creation of new reedbeds and conservation management of existing areas.	Agency, EN	01/07/98	31/03/03	2k	There has been no further progress on this action.

Blanket Bog

The Moorland Fire Liaison Group has made good progress on mapping proposed burns on commons and English Nature have issued a policy statement on moorland burning. A review of consents under the Habitats Directive for Dartmoor candidate Special Area of Conservation will have to be extended due to the inclusion in the notification of further interest features, including; Northern Atlantic wet heaths, European dry heaths, old sessile oak woods, southern damselfly, otter and salmon, as well as blanket bog.

Target:

- 14g: i) Achieve 90% of total resources in catchment on Dartmoor in favourable management (with particular attention given to hydrologically linked sites and the effects of water abstraction) by 2005 and favourable conditions by 2010.
ii) Increase both golden plover and dunlin populations to 15 pairs breeding on Dartmoor by 2010.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14g	Implement actions from Dartmoor BAP for Blanket bog - includes prevention of uncontrolled burning to protect hydrology.	DNPA, Agency, RSPB, DBWPS, EN	01/07/98	31/03/03	2k	The Moorland Fire Liaison group has made progress on mapping burns and English Nature have issued a policy statement on moorland burning. Review of consents under the Habitats Directive for Dartmoor cSAC will have to be extended due to the inclusion of salmon in the features interest. The Dartmoor BAP includes objectives for golden plover and dunlin, which have been used to set the above target.

Valley Mire

Valley mire is a wetland habitat which occurs where waterlogged peats are found in valley bottoms. Unlike blanket bog, peat formation is continuing in the mires on Dartmoor which are of particularly high quality, supporting a number of key dragonfly species. Mires are at risk from drainage which not only disturbs the habitat generally, but may also affect the particular needs of associated species. Valley mire is also vulnerable to acidification.

Targets:

- 14h: Ensure all located valley mires are maintained or restored to a favourable management condition (e.g. In terms of hydrology) by 2005.
14h i: Increase numbers of breeding curlew in catchment by 25% from 1998 levels (less than 20 pairs on Dartmoor) by 2010.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14h	Implement actions from Dartmoor BAP for Valley mire - includes possible research into hydrology and water quality	Agency, Universities	01/07/98	31/03/03	2k	Research by Plymouth University into the impact of grazing and burning on the hydrology of a small Dartmoor catchment continues. The project is due to be completed in November 2001 and we hope to be able to provide an update on this research in the

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
▼						next Annual Review.
14h i	Implement actions from Devon BAP for Curlew - includes control of disturbance (see also estuaries).	DNPA, Agency, RSPB, DBWPS	01/07/98	31/03/03	2k	A survey programme is underway looking at known breeding sites to assess habitat and behaviour and a joint DBWPS and Environment Agency leaflet has been produced aimed at landowners and land-managers.
▼						

Rhôs Pasture

Rhôs pasture (also known as Culm Grasslands in parts of Devon) is an internationally important species-rich wet grassland comprising a mixture of marshy grassland, bog, wet heath and scrubby woodland. The climate and soils of Devon provide the right conditions for the development of this habitat, though its true extent in the county is difficult to assess. It is a habitat which is of particular importance to the marsh fritillary, curlew and barn owl.

Targets:

- 14i a: Restore 10ha of Rhôs Pasture (or as amended by strategic prioritisation of restoration sites) by 2005.
- 14i b: Maintain or restore a minimum of one large population (10000+ adults) within the catchment by 2005.
- 14i c: Maintain current population and re-introduce to one former site in the catchment by 2005.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14i a	Implement actions from Devon BAP and Dartmoor BAP for Rhôs pasture - includes promoting management agreements, scrub clearance.	DNPA, Agency, EN, DEFRA	01/07/98	31/03/03	3k	The Devon Wildlife Trust newsletter 'Culm Connections' continues to be produced, informing on Rhôs pasture issues and actions. DNPA continue their management agreements with landowners for Rhôs pasture as do DEFRA (formerly FRCA/MAFF) under ESA agreements.
▼						
14i b	Implement actions from Devon BAP and Dartmoor BAP for Marsh fritillary - includes habitat restoration, correct grazing regime.	DNPA, DC, Agency	01/07/98	31/03/03	2k	There has been no further progress on this action (see 14i a).
▼						
14i c	Implement actions from Devon BAP and Dartmoor BAP for Southern Damselfly - includes protection of hydrology, possible re-introduction.	DNPA, Agency	01/07/98	31/03/03	2k	There are currently no known colonies within the Dart LEAP area. It is hoped that any suitable sites will be identified and surveyed for their presence.
▼						

Upland Heath

The upland heathland of Dartmoor is another habitat of national importance and is found on much of the open moor which is not covered by blanket bog. The vegetation is dominated by dwarf shrubs, in particular heather and western gorse. The general decline in extent and quality of heather moorland is indicative of changes in management and more intensive agricultural practices.

Target:

14j: Maintain moorland in catchment on Dartmoor with >25% dwarf shrub cover and restore 20ha of degraded heath to >25% dwarf shrub cover by 2005.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14j ▼	Implement actions from Dartmoor BAP for Upland heath - includes prevention of uncontrolled burning, and overgrazing.	DNPA, EN	01/07/98	31/03/03	n/a	The best practice for swaling is being promoted and management plans for the Dartmoor ESA scheme are being drawn up.

Rivers, Streams, Floodplain & Fluvial Processes

The rivers and river valley habitats in the LEAP area support a diverse flora and fauna, including otters and salmon.

In 1998 a study was carried out within the Dart Biodiversity Project area to examine the present status of water vole. Sixty nine sites were surveyed and water vole were not found to be present at any of them. The total absence from these sites was significant, as the area was one of the few in Devon that showed positive signs of water vole activity during the 1989-90 national survey. Dartmoor does not provide the best habitat for water vole due to its fast flowing, spatey streams and rivers, though the headwaters and marshy sites would be suitable. The apparent absence of water vole can be attributed to a number of factors, but it is unclear which of these is primarily responsible. Water voles are now virtually extinct in Devon. **Action**

14kc.

Targets:

14k a: Ensure no net loss of river length and natural features. Restore 10km of river channel and 10ha of floodplain by 2001.

14k b: Safeguard and strengthen breeding otter population on all watercourses and major water bodies within the catchment.

14k c: Complete survey of the catchment by 2001 and ensure protection of any extant populations. If appropriate restore 5km of suitable habitat by 2005.

14k e: Ensure protection of all known roosts. Achieve a 30% increase in bat populations within the catchment by 2010.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14k a ▼	Implement actions from Devon BAP and Dartmoor BAP for Rivers, Streams, Floodplain & Fluvial processes - includes pollution control, production of water level management plans, increase floodplain woodlands.	Agency, EN, LA's, DEFRA, Riparian Owners	01/07/98	31/03/03	10k	A lot of work towards this action is carried out as part of our routine activities. The Dart Biodiversity Project also contributes to this action by giving advice to landowners and by completing enhancement projects.
14k b	Implement actions from Devon BAP for Otter -	Agency, DWT,	01/07/98	31/03/03	10k	We are in the process of beginning a new contract for

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
▼	includes continued post-mortem examinations, habitat restoration.	Riparian Owners				otter post mortems, however we are still collecting corpses for analysis once this contract has been finalised.
14k c ▼	Implement Actions from Devon BAP for Watervole - includes identifying existing populations, carry out and support habitat restoration.	DWT, Agency, EN, DCC	01/07/98	31/03/03	10k	A planned DWT survey of Devon has been put on hold due to Foot & Mouth. We continue to raise awareness of this issue and ask for any records from members of the public, including historic records.
14k e ▼	Implement actions from Devon BAP and Dartmoor BAP for bats - includes protection and restoration of wetland and riparian habitats and encourage water quality levels which will help support populations of aquatic insects on which bats feed.	Agency, EN, DNPA, Devon Bat Group, DWT, DEFRA, Others	04/07/00	31/03/03	u/k	A joint project between DNPA, EN & NT surveyed 5 sites on Dartmoor of which two were in the Dart LEAP area. Wooded river valleys were shown to be prime areas for bats.
14m ▼	Retain all known sand martin and kingfisher sites and seek to create suitable conditions for colonisation elsewhere.	Agency, NT	01/07/98	31/03/99	<1k p.a.	The Dart Biodiversity Project continue to monitor sand martin colonies within the project area with the help of the Dartmoor Study Group, and has protected a colony at Dury Farm Quarry by using a boulder to prevent public access.
14n ▼	Promote measures to prevent loss of earth science sites and features in rivers and floodplains.	Agency, NT, DNPA	01/07/98	31/03/99	u/k	We continue to progress this action as part of our routine activities.

Wetlands

Actions for wetlands have been completed. See section 4.

Estuaries & Estuarine Habitats

Devon estuaries are important wildlife resources, especially during winter. They are extremely productive, providing food for wildfowl and waters. Eelgrass beds are favoured by brent geese. Estuaries are under pressure from shoreline development and the expansion of recreational activities. The Dart estuary includes small, but valuable areas of saltmarsh which support a range of species.

Target:

14p: Ensure no net loss of intertidal area. Achieve a 10% increase in area of saltmarsh by 2010.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14p ▼	Implement actions from Devon BAP for Estuaries and Estuarine habitats - includes protection from development, mapping eelgrass beds.	Agency, LA's	01/07/98	31/03/03	2k	There has been no progress on this action this year.

Geological Features

There are concerns over the impact of human activities on landscape and earth science features in the area. To enable a greater understanding of geological and geomorphological features a number of important sites throughout Devon have been identified to aid their protection. We will continue to support this initiative and encourage the conservation of recognised features.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
14r ▼	Encourage greater appreciation and understanding of County Geological Sites.	Agency, DCC	01/07/98	31/03/03	<1k p.a.	An Education Register of Geological Sites is now available on the Devon County Council website. It gives details of sites that can be visited and an explanation of the geology that can be seen.

Issue 15: Spread of Invasive Plants

The DETR (now DEFRA) are to undertake a review of non-native species policy, which they will report upon by the end of 2001. We hope to be able to provide an update on this in the fourth Annual Review.

The Japanese knotweed forum for Cornwall in conjunction with Devon County Council and ourselves has produced a leaflet for householders and landowners giving guidance on control.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
NEW ACTION (this replaces actions 15a - 15g)						
15h x	Tackle problem of invasive aquatic and bank-side plants, to include raising awareness, encourage recording and control	Agency, DNPA, LA's, DEFRA, others	01/07/01	31/03/03	u/k	We have recently produced a code of practice for the management, destruction and disposal of Japanese knotweed. In addition we are actively seeking records of this plant from across Devon and this information will be collated by the Devon Biodiversity Record Centre.

Issue 16: Lack of Information on Archaeological/Historic value of Catchment

The Dart Catchment contains numerous sites of historical and archaeological value, many of which are located on Dartmoor. These features require continued protection if they are to survive and features as yet unidentified are at risk from new developments or changes in land use. During our activities we shall ensure that historic sites are protected and when we regulate the work of others we will encourage them to do so.

A need has been identified for an assessment of the overall value of the catchment to provide a framework for considering actions in relation to the historic environment. Such an assessment would enable many bodies to share the same information.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
16	In the absence of general assessment support the production of document(s) covering entire area to provide a better understanding of archaeological/historic value of catchment.	DCC, LA's, EH, DAS, Agency, RCHME, University of Exeter, NT	01/04/99	31/03/03	3k	There has been no progress towards this action this year.

Issue 17: Recreational Use of the Catchment

There are some sites in the Dart Catchment where there are opportunities to improve facilities for recreational use and we try to do this where we can, particularly if land is in our control. There are also areas where recreation is having an adverse effect on the environment. There are a number of issues relating to visitor pressure on Dartmoor, particularly along some stretches of the river. The National Park Authority have identified a number of Wildlife Action Zones where simple actions can improve habitats which have become degraded by visitor activity. They have erected information boards at some sites on the moor and are producing information sheets which will be provided to schools.

We have a general duty to promote the recreational use of water in England and Wales and will support sensitive and sustainable access initiatives that respect the interests of local people and the environment.

The 'Ban the Dam' campaign which was instigated by the Dart Biodiversity Project continues to highlight the problems that visitors can unwittingly cause when building dams across streams.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
17a	Need to continue with careful visitor management to lessen impact of pressure from visitors to catchment.	DNPA, LA's	01/07/98	31/03/03	n/a	The Dartmoor Biodiversity Project has implemented projects on Dartmoor to lessen visitor pressure on important river stretches. DNPA, in conjunction with ourselves are planning to extend these practices to all salmon and sea trout spawning areas on Dartmoor.
17b	Encourage disposal of sewage waste at shore based facilities to reduce impact of sewage from boats on water quality, wildlife and amenity.	Dart Harbour & Navigation Authority	01/07/98	31/03/03	n/a	There has been no progress on this action over the last year.
17d	Take part, as a neutral party, in any discussions over access agreements for canoeists.	Agency, DNPA, BCU, Riparian Owners	01/07/98	31/03/03	<1k p.a.	No discussions have taken place over the last year.
17e	Review safety implications of the River Dart charity raft race and encourage adoption of appropriate safe practices.	Race Organisers, Agency	01/07/98	31/03/03	n/a	Information and advice on appropriate safe practice will be given on request.
17f	Investigate opportunities for improved public access to	DNPA, Agency,	01/07/98	31/03/03	<1k p.a.	We continue to seek opportunities to progress this

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
▼	rivers, especially for the less able.	LA's				action wherever possible.
17g ▼	Investigate opportunities for improved interpretation of water environment for visitors.	DNPA, Agency, LA's	01/07/98	31/03/03	<1k p.a.	The Dart Biodiversity Project provides interpretation and awareness through a number of educational projects.
17h ▼	Investigate proposals for footpaths/cycleways in the catchment.	LA's	01/07/98	31/03/03	n/a	There has been no further progress on this action over the last year.
17j ■	Create angling facilities for less able at Totnes.	Agency, DAA, SWWL	01/07/98	31/03/00	u/k	We have still not been able to make progress on this action.
17k ▼	Raise public awareness of disturbance to wildlife.	DNPA, RSPB	01/07/98	31/03/03	n/a	See action 17g.
17l ▼	Increase public awareness of the dangers of fires on Dartmoor.	DNPA	01/07/98	31/03/03	n/a	There has been no specific progress on this action over the last year.
17m ●	Raise awareness amongst anglers of need for careful management of riverside habitat.	Agency, DNPA	01/07/98	31/03/03	<1k p.a.	This work is carried out as part of our routine activities and following the production of the good practice guide for Freshwater Fisheries and Wildlife Conservation, this action is now complete.

Issue 18: Dart Estuary Management Plan

The Dart Estuary Management Plan provides a framework against which strategies and actions can be put in place to manage in a sustainable way the environment of the Dart Estuary. It seeks to promote the sustainable use of the Dart Estuary, balancing the demands of tourism, local industry and the natural environment. We will continue to work with other agencies and organisations to develop and implement the Dart Estuary Management Plan.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
18 ▼	Support actions in the Dart Estuary Management Plan	Agency	01/07/98	31/03/03	<1k p.a.	We have supported the Management Plan through in-kind matched funding to the sum of £5,000 over the last year.

Issue 19: Concerns over the use of anti-fouling paints on boats

Alternatives to TBT anti-fouling paints are mainly based on copper, some of which have booster biocides, eg. Irgarol 1051 and diuron, added to them. However, following a review of Irgarol 1051 and diuron by the Health and Safety Executive, the Advisory Committee on Pesticides has revoked the use of these biocides as follows:

The sale of products containing diuron will be prohibited from November 2001 and the use of diuron will be banned in November 2002. The sale of products containing Irgarol 1051 for amateur use will be prohibited from November 2001 and the use of Irgarol 1051 on vessels less than 25 metres in length will be banned in November 2002.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
19a ▼	Work with the Dart Harbour Authority to ensure that agitation dredging does not result in exceedence of the EQS for TBT in the estuary.	Dart Harbour & Navigation Authority, Agency	01/07/98	31/03/03	<1k p.a.	We were informed of agitation dredging taking place in January 2001. We are not aware of any resulting water quality problems as a result of this activity.
19c ●	Progress national research into environmental effects of alternatives to TBT.	Agency, PML, DEFRA, WRcm HSE	01/07/98	31/03/00	u/k	We have produced two R&D reports, details of which can be found in the 2nd Annual Review. In addition, WRc's report "Environmental Modelling of Antifoulants", contract research report 342, has now been published by HSE books.

Issue 20: Need for Integrated Managment of the Coastal Zone

The coastal areas of Devon will play a vital role in supporting both the quality of life and the economic development of the county. The Atlantic Living Coastlines Project was established in 1997 involving a large number of organisations with the aim of developing an integrated strategy for coastal management. The project was concluded in 2000 with recommendations for a way forward.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
20a ▼	Seek funding for Coastal Strategy through Intereg III.	DCC, DEEM, Agency	01/07/00	31/03/03	u/k	Devon County Council are producing a Coast Report in advance of a Devon Coastal Conference in October 2001, where the idea of a coastal strategy will be discussed.

Issue 21: Unknown causes of poor Water Quality - NEW ISSUE

The River Wash from its source to the normal tidal limit marginally failed to comply with its RQO of RE1 in 1999 and 2000. The causes of this failure are currently unknown and we hope to carry out an investigation to ascertain the cause of the pollution which led to the failure during the forthcoming year.

No:	Action	Lead by / Other	Start Date	End Date	Cost	Progress
21a X	Investigate cause of water quality failure where the cause is unknown and take remedial action if necessary.	Agency	01/04/01	31/03/02	u/k	We will report on this in the 4th Annual Review.

4. List Of Completed Actions

The following is a list of all actions which were completed at either 1st Annual Review or 2nd Annual Review stage.

No:	Action	Progress
Issue 1: Impact of Effluent Disposal		
1a	Continue to encourage SWWSL to adequately maintain the sewerage system in and around Ashburton.	See 1st Annual Review.
1b	Carry out chemical and biological monitoring to investigate the causes of poor water quality in the River Mardle.	See 1st Annual Review.
1c	Investigate water quality in the Dean Burn.	See 1st Annual Review.
1d	Review results of routine monitoring of the River Dart downstream of Buckfastleigh (Kilbury) STW to see if RQO failure recurs.	See 1st Annual Review.
1e	Install powder activated carbon treatment process at Buckfastleigh (Kilbury) STW.	See 1st Annual Review.
1g	Monitor discharge from Buckfastleigh (Kilbury) STW for foaming incidents and presence of process oil in effluent. (Requirement for further monitoring to be assessed after 12 months).	See 1st Annual Review.
1k	Investigate causes of poor water quality in the Bidwell Brook.	See 1st Annual Review.
1l	Investigate causes of poor water quality in the Holy Brook.	See 1st Annual Review.
1o	Negotiate for improvements to be made to the discharge from Totnes STW in AMP3.	See 2nd Annual Review.
Issue 2: Concerns over Effluent Discharges in the Vicinity of the Dart Estuary Shellfishery		
2	Review sites designated under Shellfish Waters Directive - timescales unknown.	See 1st Annual Review.
Issue 4: Problems Associated with Development		
4a	Review air quality in the area, in line with National Air Quality Strategy.	See 2nd Annual Review.
4c	Produce database on contaminated land sites in the catchment.	See 2nd Annual Review and action 4d i.
4d	Ensure there is effective consultation with local authorities (LAs) with regards to contaminated land.	See 2nd Annual Review.
4e	Ensure new developments take account of sea level rises at Totnes, Littlehempston and Dartmouth.	See 2nd Annual Review.
4f	Oppose developments which would increase flood risk at Staverton Mill, Shinnars Bridge and Ashburton.	See 2nd Annual Review.
4g	Following provision of floodplain mapping, continue liaison with Planning Authorities to determine where further studies need to be carried out.	See 2nd Annual Review.
4h	Ensure sites of earth science value are identified and protected from development.	See 1st Annual Review.
4i	Examine Section 105 survey to identify floodplains, promote & implement Devon BAP for Rivers, Streams, Floodplains & Fluvial Processes particularly in relation to restoration/re-creation of fully functioning floodplains where this would reduce flood risk.	See 2nd Annual Review.
Issue 5: Impact of Mineral Extraction		
5a	Ensure key habitats are identified and protected from mineral extraction activities.	See 2nd Annual Review.
5b	Continue to liaise with Linhay Quarry to seek further improvements to the discharge and to reduce the impact of the quarry on the environment.	See 1st Annual Review.
5c	Following closure of Whitecleaves Quarry, need to ensure that the scientific interest of Potters Wood SSSI is maintained.	See 2nd Annual Review.
5e	Produce guidance notes for mineral operators on ways of enhancing restoration and after use of pits and quarries to benefit wildlife and earth science conservation.	See 2nd Annual Review.
5f	Give increased consideration to natural regeneration as a method of site restoration, as opposed to infilling and planting, with due consideration to public safety.	See 2nd Annual Review.

No.	Action	Progress
Issue 6: Impact of Abandoned Mines		
6	Identify and assess effects of abandoned mine workings on unmonitored watercourses and where necessary identify remedial actions to address problems.	See 2nd Annual Review.
Issue 7: Impact of Farming and Forestry on Rivers and Wetlands		
7g	Encourage adoption of best practice for swaling (controlled burning).	See 2nd Annual Review. See also Action 9a.
Issue 10: Barriers to Fish Migration		
10a	Identify sites which create problems for the downstream migration of smolts.	See 2nd Annual Review.
Issue 11: Risk of Over Exploitation of Salmon Fishery		
11a	Carry out detailed analysis of fishery data including juvenile surveys, setting spawning targets, egg deposition rates and declared catch returns.	See 1st Annual Review.
11b	Introduce catch controls and new NLO to manage exploitation in line with the findings of above.	See 1st Annual Review.
11c	Consider introduction of rod and net fishing byelaws to reduce exploitation of spring fish.	See 1st Annual Review.
11f	Promote voluntary conservation measures for spring fish until formal measures are in place.	See 1st Annual Review.
Issue 12: Additional Threats to Fish Stocks		
12d	Co-operate with the licensing authority to progress further research into the issue of fish-eating birds.	See 2nd Annual Review.
12f	Implement recommendations from R & D research into fish-eating birds.	This action has been superceded by Action 12f i.
Issue 13: Acidification of Dartmoor		
13a	Ensure Part A processes authorised under IPC legislation achieve planned emission reductions.	See 1st Annual Review.
13b	Promote measures to reduce emission of nitrogen oxides from traffic.	See 2nd Annual Review. Also see Issue 4.
13c	Examine performance of salmonid fishery as part of Salmon Action Plan.	See 2nd Annual Review.
Issue 14: Biodiversity and Earth Science		
14b	Complete process of identifying key features, habitats and species in Devon catchments, and set catchment specific targets where appropriate.	See 1st Annual Review.
14d	Identify key sites of wet woodland within the catchment to achieve better understanding of extent and value.	This action has been merged with action 14c.
14e	Support survey to determine invertebrate interest of wet woodland.	This action has been merged with action 14c.
14k d	Implement Actions from Devon BAP for Salmon. See Issue 10 & 11 for actions on Salmon.	See 1st Annual Review.
14l	Support county-wide survey of sand martin and kingfisher nest sites.	See 1st Annual Review.
14o	Identify areas where flood control standards could be relaxed to improve/enhance wetland habitats.	This action is now being progressed through action 14k a.
14q	Identify and document County Geological Sites.	See 1st Annual Review.
14s	Include suitable survey techniques for lamprey in routine fisheries survey work, with identification to species level.	See 1st Annual Review.
Issue 15: Spread of Invasive Plants		
15a	Encourage recording of invasive plants by field staff and others.	This action has been combined into new action 15h.
15b	Raise awareness of problem of Australian swamp stonecrop and Parrots feather through garden centre trade associations.	This action has been combined into new action 15h.
15c	Encourage removal from ponds of Australian swamp stonecrop and Parrots feather where already established.	This action has been combined into new action 15h.

No:	Action	Progress
15d	Continue surveys for invasive bankside plants.	This action has been combined into new action 15h.
15e	Carry out control on any Agency managed sites.	This action has been combined into new action 15h.
15f	Encourage control by riparian owners and other interested parties.	This action has been combined into new action 15h.
15g	Make invasive plants booklet widely available.	This action has been combined into new action 15h.
Issue 17: Recreational Use of the Catchment		
17c	Monitor impact of recreational activities on conservation interests and water quality in the estuary and support Estuary Management Plan initiatives.	See 2nd Annual Review.
17i	Develop vehicular access and public transport links for the less able.	See 2nd Annual Review.
Issue 19: Concerns over the use of Anti-fouling Paints on Boats		
19b	Consider support for research into the effects of agitation dredging in areas of contaminated sediments.	This action is not being progressed. See 2nd Annual Review.
19d	Establish levels of TBT and Irgarol in the Dart Estuary.	See 2nd Annual Review.
Issue 20: Need for Integrated Management of the Coastal Zone		
20	Continue to support Atlantic Living Coastline Project.	See 2nd Annual Review.

5. Duties, Powers and Interests of the Environment Agency

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

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership:
Water Resources The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.	<ul style="list-style-type: none"> • Grant or vary water abstraction and impoundment licences on application with appropriate conditions imposed to safeguard the needs of the environment whilst allowing reasonable and justified use of available and sustainable water resources - with the aim of achieving an equitable balance between competing demands. • Revoke or vary existing licences to reinstate flows or levels to surface waters or groundwater which have become depleted as a result of abstraction. Compensation may be payable if such powers are used. • Secure the proper use of water resources through our role in water resources planning, and the assessment of reasonable need for abstractions and the promotion of more efficient use of water resources. • Monitor and enforce abstraction and impoundment licences. • Issue conservation notices to direct appropriate practices with regard to water resources issues associated with exempt dewatering activities. 	<ul style="list-style-type: none"> • The more efficient use of water by water companies, developers, industry, agriculture and the public and the introduction of water-efficiency measures and suitable design and layout of the infrastructure. • Protecting the water environment from any adverse impact due to proposed major developments. 	<ul style="list-style-type: none"> • The Agency uses its position as a statutory consultee to the planning authorities to secure conditions and agreements that protect the water environment and that encourage water conservation measures. • The Agency also seeks to influence planning decisions for new development by ensuring that planning authorities allow for any lead-time required for resource development. • The Agency is committed to water-demand management and will work closely with water companies and developers, local authorities and relevant organisations to promote the efficient use of water. • The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand-management measures.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
<p>Flood Defence</p> <p>The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each LEAP area.</p>	<ul style="list-style-type: none"> • Control, through Land Drainage consents, of development within 8 m of main river (Water Resources Act 1991, Section 109) or construction of a structure that would affect the flow of an ordinary watercourse (Land Drainage Act, 1991 Section 23). • Produce flood risk maps for all main rivers under S105 of Water Resources Act 1991. • Undertake works to main rivers using permissive powers. • Issue flood warnings relating to main river to the public, local authorities and the police. • Consent mineral working within 16 m of main rivers. 	<ul style="list-style-type: none"> • Granting of planning permission throughout a LEAP area but especially floodplains where development can significantly increase flood risk. This permission is granted by local planning authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Supervising the maintenance of ordinary watercourses which is a local authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance. 	<ul style="list-style-type: none"> • As a statutory consultee on planning applications within main river floodplains the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts of proposed floodplain development. • The Agency will encourage best practice, including source control measures and common standards, among local authorities and riparian owners to protect and enhance the environment. The Agency works with the civil authorities to prepare flood warning dissemination plans and supports their endeavours to protect communities at risk.
<p>Air Quality</p> <p>The Agency has a duty to implement Part 1 of the Environmental Protection Act 1990.</p>	<ul style="list-style-type: none"> • Regulate the largest technically complex and potentially most polluting prescribed industrial processes such as refineries, chemical works and power stations including enforcement of, and guidance on, BATNEEC and BPEO. • Have regard to the government's National Air Quality Strategy when setting standards for the releases to air from industrial processes. 	<ul style="list-style-type: none"> • The vast number of smaller industrial processes which are controlled by local authorities. • Control over vehicular emissions and transport planning. 	<ul style="list-style-type: none"> • The Agency provides data on IPC processes and advice on planning applications to local authorities. The Agency is willing to offer its technical experience to local authorities on the control of air pollution. The Agency wishes to liaise with local authorities in the production of their Air Quality Management Plans. The Agency will advise and contribute to the government's National Air Quality Strategy.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
<p>Water Quality</p> <p>The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.</p>	<ul style="list-style-type: none"> • Issue discharge consents to control pollution loads in controlled waters. • Regulate discharges to controlled waters in respect of water quality through the issue and enforcement of discharge consents. • Issue 'works notices' where action is required to reduce the risk of pollution. • Prosecute polluters and recover the costs of clean-up operations. • Serve prohibition notices (with or without conditions) on highway authorities to require treatment and pollution measures for highway runoff. 	<ul style="list-style-type: none"> • The greater use of source control measures to reduce pollution by surface water runoff. • Prevention and education campaigns to reduce pollution incidents. • The provision of highway runoff control measures which is a highway authority remit. 	<ul style="list-style-type: none"> • The Agency will liaise with local authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source control measures. As a statutory consultee on planning applications, the Agency will advise local planning authorities on the water quality impact of proposed developments.
<p>Radioactive Substances</p> <p>The Agency has a duty under the Radioactive Substances Act 1993 to regulate the use of radioactive materials and the disposal of radioactive waste.</p>	<ul style="list-style-type: none"> • To issue certificates to users of radioactive materials and disposers of radioactive waste, with an overall objective of protecting members of the public. 	<ul style="list-style-type: none"> • The health effects of radiation. 	<ul style="list-style-type: none"> • The Agency will work with users of the radioactive materials to ensure that radioactive wastes are not unnecessarily created, and that they are safely and appropriately disposed of. The Agency will work with DEFRA to ensure that the disposal of radioactive waste creates no unacceptable effects on the food chain. • The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites. • The Agency will work with the HSE on worker protection issues at non-nuclear sites.
<p>Waste Management</p> <p>The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to public health or detriment to local amenities.</p>	<ul style="list-style-type: none"> • Vary waste management licence conditions. • Suspend and revoke licences. • Investigate and prosecute illegal waste management operations. 	<ul style="list-style-type: none"> • The siting and granting of planning permission for waste management facilities. This is conducted by the waste industry and local planning authorities. The Agency, as a statutory consultee on planning applications, can advise on such matters. • Serve notices to require improvements to waste facilities or for the removal of waste. 	<ul style="list-style-type: none"> • The Agency will work with waste producers, the waste management industry and local authorities to reduce the amount of waste produced, increase re-use and recycling and improve standards of disposal.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in :	Partnership
<p>Contaminated Land</p> <p>The Agency has a duty to develop an integrated approach to the prevention and control of land contamination, ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment.</p>	<ul style="list-style-type: none"> • Regulate the remediation of contaminated land designated as special sites. • Prevent future land contamination by means of its IPC, Water Quality and other statutory powers. • Report on the state of contaminated land. 	<ul style="list-style-type: none"> • Securing with others, including local authorities, landowners and developers, the safe remediation of contaminated land. 	<ul style="list-style-type: none"> • The Agency supports land remediation and will promote this with developers and local authorities and other stakeholders.
<p>Conservation</p> <p>The Agency will further conservation, wherever possible, when carrying out water management functions; have regard to conservation when carrying out pollution control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.</p>	<ul style="list-style-type: none"> • The Agency has no direct conservation powers but uses its powers with regard to water management and pollution control to exploit opportunities for furthering and promoting conservation. 	<ul style="list-style-type: none"> • The conservation impacts of new development. These are controlled by local planning authorities. • Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to local authorities and developers to protect the integrity of such sites or species. • Implementation of the UK Biodiversity Plan for which it is the contact point for 35 species and one habitat. 	<ul style="list-style-type: none"> • The Agency supports action to sustain or improve natural and man-made assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, local authorities, conservation bodies and landowners to conserve and enhance biodiversity.
<p>Landscape</p> <p>The Agency will further landscape conservation and enhancement when carrying out water management functions; have regard to the landscape when carrying out pollution control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land.</p>	<ul style="list-style-type: none"> • The Agency must further the conservation and enhancement of natural beauty when exercising its water management powers and have regard to the landscape in exercising its pollution control powers. 	<ul style="list-style-type: none"> • The landscape impact of new development, particularly within river corridors. This is controlled by local planning authorities. 	<ul style="list-style-type: none"> • The Agency produces River Landscape Assessments and Design Guidelines which it uses when working with local authorities and developers to conserve and enhance diverse river landscapes.
<p>Archaeology</p> <p>The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.</p>	<ul style="list-style-type: none"> • The Agency must promote its archaeological objectives through the exercise of its water management and pollution control powers and duties. 	<ul style="list-style-type: none"> • Direct protection or management of sites of archaeological or heritage interest. This is carried out by local planning authorities, County Archaeologists and English Heritage. 	<ul style="list-style-type: none"> • The Agency will liaise with those organisations which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership
Fisheries The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.	<ul style="list-style-type: none"> • Regulate fisheries by a system of licensing. • Make and enforce fisheries byelaws to prevent illegal fishing. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish entrainment in abstractions. • Promote its fisheries duty by means of land drainage consents, water abstraction applications and discharge applications. 	<ul style="list-style-type: none"> • The determination of planning applications which could affect fisheries. 	<ul style="list-style-type: none"> • Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers and local authorities to protect fisheries.
Recreation The Agency has a duty to promote rivers and water space for recreational use.	<ul style="list-style-type: none"> • The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management. 	<ul style="list-style-type: none"> • Promotion of water sports. This is carried out by the Sports Council and other sports bodies. 	<ul style="list-style-type: none"> • The Agency will work with the Countryside Commission, the Sports Council, British Waterways and other recreational and amenity organisations to optimise recreational use of the water environment.

Glossary

Abstraction - Removal of water from surface or groundwater sources.

Asset Management Plan (AMP) - The Asset Management Plan is produced by the Water Companies for the Office of Water Services (OFWAT). It sets out the water industry investment programme for a set number of years.

Biochemical Oxygen Demand (BOD) - A standard test which measures over five days the amount of oxygen taken up by aerobic bacteria to oxidise organic (and inorganic) matter.

Biodiversity - The variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and ecosystems. (Article II of the Biodiversity Convention).

Catchment - The total area from which a single river collects surface runoff.

Coarse fish - This is a lay-man's term for cyprinid fish and other commonly associated species such as pike, perch and eels of angling significance. The term does not normally refer to minor species such as bullhead, stone loach, minnow and stickleback.

Confluence - The point at which two rivers meet.

Culm - A geological formation in SW England comprising beds of shales and thin layers of impure anthracite, all of Carboniferous age.

Culm grassland - Type of nutrient poor grassland present on culm geological formations.

Diffuse pollution - Pollution without a single point source, e.g. acid rain, pesticides, urban runoff, etc.

Environmental Quality Standard (EQS) - The concentration of a substance found in the environment which should not be exceeded in order to protect the environment or human health. An EQS is set by the EC through EC Directives and also by the Government.

Environmentally Sensitive Area (ESA) - An area designated by MAFF where grant aid is available to support traditional farming methods.

Eutrophic - Water enriched with nutrients which result in high plant (including algal) growth. Usually used when referring to enrichment from man-made sources such as fertilisers leaching from the soil.

Floodplain - Part of river valley or coastal plain which is inundated during periods of flooding.

Fluvial - Pertaining to, or found in, rivers.

Hydrology - The study of water and its dynamics.

pH - A measurement of the concentration of hydrogen ions which cause acidity. Acid solutions have a pH of less than 7, alkalis of more than 7 and neutral solutions a pH of 7 (e.g. pure water).

Polluted Water Status - waters affected by eutrophication caused by nitrogen compounds derived from agricultural sources.

Rhôs pasture - See Culm grassland.

Riparian - Relating to or situated on the bank of a river or stream.

Riparian owner - Owner of riverbank and/or land adjacent to a river. Normally owns river bed and rights to mid-line of channel.

River Quality Objective (RQO) - The level of water quality that a river should achieve in order to be suitable for its agreed uses.

Runoff - Rainwater which does not soak into the ground but which runs over the surface in a downhill direction.

Salmonid - Game fish of the salmon family, e.g. 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.

Sensitive Area Status - waters that receive discharges from population equivalents of greater than 10,000 and are, or may become, eutrophic.

Sewage - Liquid waste from cities, towns and villages which is normally collected and conveyed in sewers for treatment and/or discharge to the environment.

Sewerage - A system of underground pipes designed to carry sewage to Sewage Treatment Works.

SSSI - Sites of national importance designated under the Wildlife and Countryside Act 1981 by English Nature in England. Sites may be designated to protect wildlife, geology or land forms.

Surface water - General term used to describe all the water features such as rivers, streams, springs, ponds and lakes.

Sustainable development - Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sensitive Area Status - waters that receive discharges from population equivalents of greater than 10,000 and are, or may become, eutrophic.

Valley Mire - habitat which occurs along the lower slopes and floors of small valleys, usually around a central watercourse which is fed from springs and seepages on the valley sides. Valley mire is typically dominated by wetland plants, often moss-rich and usually occurs over a thick layer of peat.

Abbreviations

AMP	Asset Management Plan
AOD	Above Ordnance Datum
BAP	Biodiversity Action Plan
BC	Butterfly Conservation
BCU	British Canoe Union
BOB	Biochemical Oxygen Demand
CCC	Cornwall County Council
DAA	Dart Angling Association
DAS	Devon Archaeological Society
DBWPS	Devon Birdwatching and Preservation Society
DCC	Devon County Council
DEFRA	Department of the Environment, Food and Rural Affairs (formerly DETR)
DETR	Department of the Environment, Transport and the Regions
DFA	Dart Fisheries Association
DNPA	Dartmoor National Park Authority
DWT	Devon Wildlife Trust
EA	Environment Agency
EH	English Heritage
EMP	Estuary Management Plan
EN	English Nature

EQS	Environmental Quality Standard
ESA	Environmentally Sensitive Area
FC	Forestry Commission
FRCA	Farming and Rural Conservation Agency (Now DEFRA)
IFE	Institute of Freshwater Ecology
LA's	Local Authorities
LEAP	Local Environment Agency Plan
MAFF	Ministry of Agriculture, Fisheries and Food (Now DEFRA)
NT	National Trust
OFWAT	Office of Water Services
PML	Plymouth Marine Laboratory
RIGS	Regionally Important Geological Sites
RCHME	Royal Commission on Historic Monuments in England
RQO	River Quality Objective
RSPB	Royal Society of the Protection of Birds
SHDC	South Hams District Council
STW	Sewage Treatment Works
SWWL	South West Water Ltd
TBT	Tributyltin
TC	Torbay Council
TDC	Teignbridge District Council
UV	Ultraviolet
UWWTD	Urban Waste Water Treatment Directive
WRT	Westcountry Rivers Trust

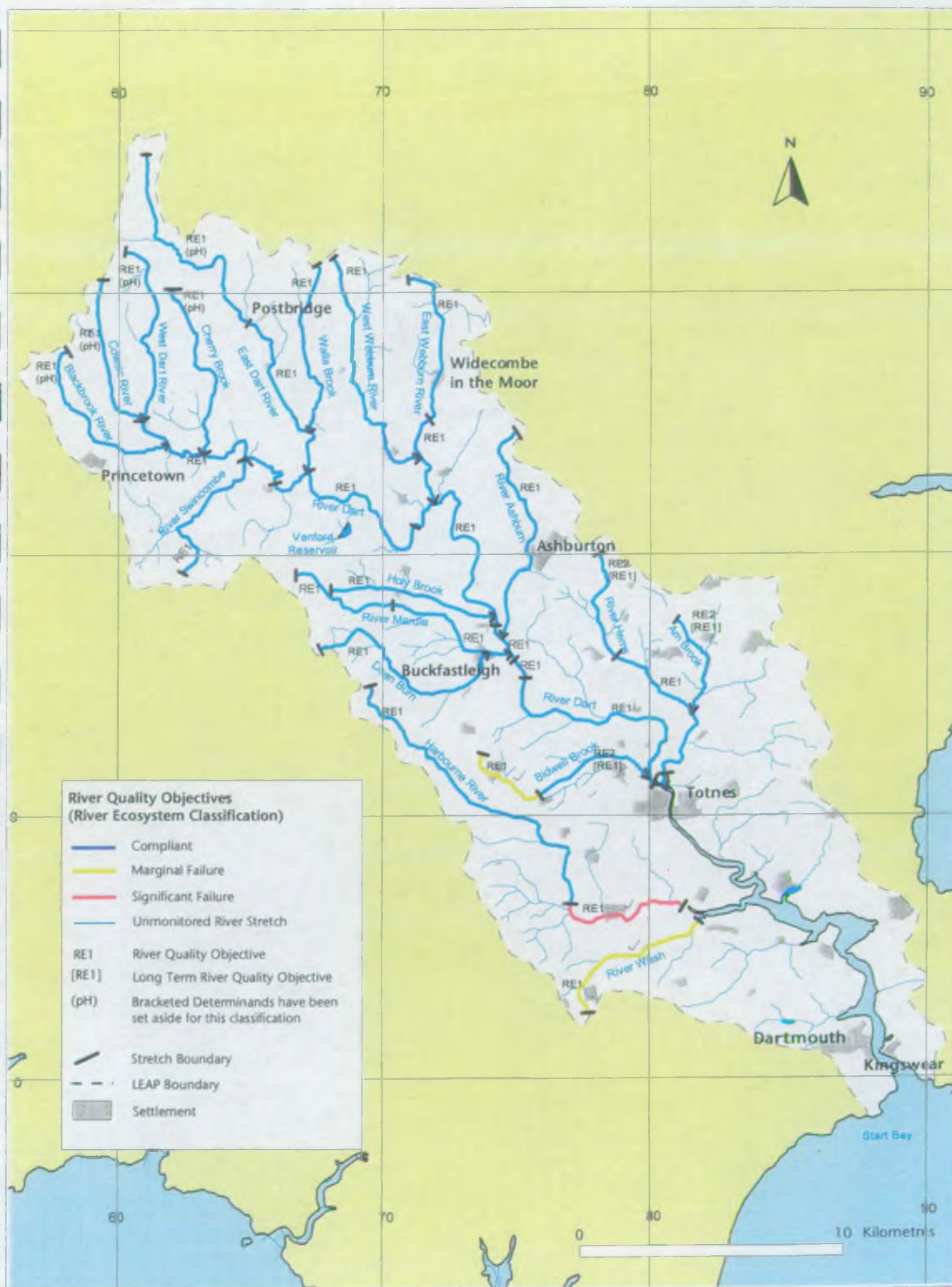
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- ⁸ Focus on Biodiversity, The Environment Agency, June 2000.

Map1 - Key sites in the Dart LEAP Third Annual Review



Map 2 - 1999 & 2000 Compliance with River Quality Objectives (River Ecosystem Classification)



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