

local environment agency plan

DART

FIRST ANNUAL REVIEW

OCTOBER 1999



ENVIRONMENT
AGENCY



ENVIRONMENT AGENCY

NATIONAL LIBRARY &
INFORMATION SERVICE

HEAD OFFICE

Rio House, Waterside Drive,
Aztec West, Almondsbury,
Bristol BS32 4UD

DART LEAP ACTION PLAN – 1ST ANNUAL REVIEW

OCTOBER 1999

1 CATCHMENT VISION.....	1
2 INTRODUCTION	2
2.1 The Environment Agency.....	2
2.2 Local Environment Agency Plans –	3
2.3 The LEAP Steering Group	3
2.4 Working With Others.....	4
3 OVERVIEW OF THE CATCHMENT.....	5
3.1 1998 Compliance with River Quality Objectives (RQOs).....	5
4 PROGRESS TABLES.....	7
Issue 1 – Impact of Effluent Discharges	7
Issue 2 – Concerns over Effluent Discharges in the Vicinity of the Dart Estuary Shellfishery	11
Issue 3 – Risk of Cryptosporidium Entering Public Water Supply	11
Issue 4 – Problems Associated with Development.....	11
Issue 5 – Impact of Mineral Extraction	13
Issue 6 – Impact of Abandoned Mines	14
Issue 7 – Impact of Farming and Forestry on Rivers and Wetlands.....	14
Issue 8 – Potential Eutrophication of the Dart Estuary	15
Issue 9 – Concern over low flows.....	16
Issue 10 – Barriers to Fish Migration.....	16
Issue 11 – Risk of Over Exploitation of the Salmon Fishery	17
Issue 12 – Additional threats to Fish Stocks	18
Issue 13 – Acidification of Dartmoor	19
Issue 14 – Biodiversity and Earth Science	20
Issue 15 – Spread of Invasive Plants	23
Issue 16 – Lack of Information on Archaeological/Historic Value of Catchment.....	24
Issue 17 – Concerns with Recreational Use of the Catchment	25
Issue 18 – Dart Estuary Management Plan	26
Issue 19 – Concerns over use of Anti-fouling Paints on Boats	26
Issue 20 – Need for Integrated Management of the Coastal Zone.....	27
5 APPENDIX 1 : Changes to Actions from the Action Plan (July 1998).....	28
6 APPENDIX 2 : Duties, powers and interests of the Environment Agency	29
7 ABBREVIATIONS & REFERENCES.....	34
7.1 ABBREVIATIONS	34
7.2 REFERENCES	34

Key to tables:

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

Requests for further copies of this report and any enquiries concerning this plan should be addressed to:

Team Leader, LEAPs
Environment Agency
Devon Area
Exminster House
Miller Way
EXMINSTER
EX6 8AS

Environment Agency Copyright Walver

This report is intended to be widely used and may be quoted, copied or reproduced in any way, provided that the extracts are not quoted out of context and that due acknowledgement is given to the Environment Agency.

Note: This is not a legally or scientifically binding document.

ENVIRONMENT AGENCY



032516

1 CATCHMENT VISION

The integrated management of the environment is a fundamental philosophy for the Environment Agency with Local Environment Agency Plans (LEAPs) taking a key role in this approach.

The Dart Catchment covers a popular area of Devon including part of Dartmoor National Park and the Dart Estuary. The towns of Dartmouth, Totness and Buckfastleigh are important economic and tourist centres and it is important that the assets of the catchment are maintained and protected both now and for future generations to enjoy. It is vital that the needs of all uses of the area, including flora and fauna, are balanced to ensure continued protection of these precious assets. This Plan epitomises the Agency's commitment to protect and where necessary enhance the environment through the Agency's own actions or in association with other organisations.

2 INTRODUCTION

This is the First Annual Review of the River Dart Action Plan. It introduces the Environment Agency and summarises progress made with actions. Previous publications relating to this catchment contain more background detail, and this review should be read in conjunction with these publications:

- River Dart LEAP Consultation Report – June 1997
- River Dart LEAP Action Plan – July 1998

These publications are available on request.

2.1 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 take action, are described in more detail in Appendix 2. We are required and guided by Government to use these duties and powers in order to help achieve the objective of sustainable development. The Brundtland Commission defined sustainable development 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. Indeed the creation of the Agency itself was in part recognition of the need to take a more integrated and longer-term view of environmental management at a national level. We therefore have to reflect this in the way we work and in the decisions we make.

Taking a long-term perspective will require 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, in order 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, in order to solve global environmental problems, local action is crucial: we must all therefore think globally but act locally.

Our Vision is:

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

Our aims are:

- to achieve major and continuous improvements in the quality of air, land and water
- to encourage the conservation of natural resources, animals and plants
- to make the most of pollution control and river-basin management
- to provide effective defence and warning systems to protect people and property against flooding from rivers and the sea
- to reduce the amount of waste by encouraging people to re-use and recycle their waste
- to improve standards of waste disposal
- to manage water resources to achieve the proper balance between the country's needs and the environment
- to work with other organisations to reclaim contaminated land
- to improve and develop salmon and freshwater fisheries
- to tell people about environmental issues by educating and informing

- to set priorities and work out solutions that society can afford

We will do this by:

- being open and consulting others about our work
- basing our decisions around sound science and research
- valuing and developing our employees
- being efficient and businesslike in all we do

2.2 Local Environment Agency Plans -

We are committed to a programme of Local Environment Agency Plans (LEAPs) which 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. LEAPs replace the Catchment Management Plans, which were produced by the former National Rivers Authority and build on their success by encompassing all the Agency's functions.

The LEAP process involves several stages as outlined below.

The Consultation Report - The publication of the River Dart Consultation Report marked the start of a three-month period of formal consultation, which enabled external organisations and the general 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 which gave the results of the process.

The Action Plan - The Action Plan took into account the results of the consultation and was produced in July 1998. It contained numerous actions that took into account the potential costs and benefits, identifying timescales and partner organisations. Agreed actions are also 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 in the LEAP area, and also whether any actions need removing or amending where they are no longer appropriate. After five years, or sooner if required, we will carry out a major review of the progress we have made. At this stage we will produce a new LEAP Consultation Report to reflect these changes to further improve the local environment.

Review of Progress - The following pages outline updates on the various issues, together with the relevant actions as set out in the Action Plan (July 1998). A summary of progress is given for each action, together with target dates for future work if applicable. New actions have been added where appropriate.

Future Reviews - We will review progress again in September 2000 and details will be published in the Second Annual Review of the Dart LEAP.

2.3 The LEAP Steering Group

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

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

Mr G Heywood	Local Conservation Interests
Mr R Humphreys	Dart Estuary Project Officer
Mr D Pakes	Dart Fisheries Association
Mr D Ramsden	Barn Owl Trust
Mr D Rayner	Farming and Rural Conservation Agency
Mr R Scoble	Netsmen
Mr P Simpson	Riparian Owner
Mr C Sturmer	Duchy of Cornwall
Mrs M R Tomlinson	Devon Area Environment Group
Mr D Trout	Dartington Parish Council
Mr M Williams	South West Water Ltd

2.4 Working With Others

The Agency can only deliver long-term environmental improvement by working with others through co-operation and collaboration. This is done by 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 has been designed to achieve sustainable development within all levels of our society.

Within the Dart Catchment Local Authorities are assisting their local communities in developing strategies and action plans for sustainable development. Teignbridge District Council has produced a Local Agenda 21 Statement of Commitment and an Action Programme through their Agenda 21 Steering Group, which consists of Council Officers representing a broad range of functions. South Hams District Council have supported an independently produced Agenda 21 Plan, a series of recommendations for action that will act as a 'signpost' for organisations and individuals to follow. Torbay Borough Council is intending to produce a plan within the next two years; they are progressing several initiatives that arose from consultation with the community. Dartmoor National Park Authority endorses the Statement on National Parks, Sustainability and Work on Local Agenda 21; this statement provides a commitment to the pursuit of sustainability and Local Agenda 21 and forms the basis for future action.

Development plans

These are produced by Local Authorities to guide the way that land is developed. We have limited control over the development of land, but we can provide advice and guidance to Local Authorities and work with them to develop policies which 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 which aim to protect and management the environment. Other non-statutory plans include:

- The Nature of Devon: A Biodiversity Action Plan²
- The Nature of Dartmoor: A Biodiversity Profile³
- Dart Estuary Management Plan⁴
- South Devon AONB (Area of Outstanding Natural Beauty) Management Plan⁵
- Devon's Local Agenda 21 Issues Report⁶
- Dart Fishing Association Action Plan⁷

3 OVERVIEW OF THE CATCHMENT

This plan covers the River Dart Catchment, an area of approximately 475 km². The River Dart is formed from the East and West Dart Rivers that rise on South East Dartmoor. This is an upland granite mass that rises to over 600 m AOD.

Dartmoor 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 size becomes progressively larger as one moves away from the moorland.

The River Dart eventually flows 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 in this area. The River Dart continues through this area to its tidal limit at Totnes. The steep valley sides result in a minimal floodplain. Two major tributaries join the River Dart in its estuary; these are the River Hems and the Harbourn River.

Venford Reservoir is the only reservoir in the Dart Catchment. It is one of the smaller SWWL public water supply reservoirs. There is a second public water supply abstraction on the lower Dart at Littlehempston. The Littlehempston intake abstracts water both directly from the River Dart and from a suite of 'radial collectors' in the vicinity.

Industry in the catchment, apart from agriculture and tourism, is very limited. There is some light industry in the Totnes and Buckfastleigh area. Dartmouth and Dartmoor National Park are significant tourist destinations and Buckfast Abbey and the Dartington Cider Press Centre are very popular attractions, each attracting over half a million visitors every year.

Key Statistics for the River Dart Catchment

Catchment Area	475 km ²
Length of River monitored for classification purposes	210 km
Average Annual Rainfall	1760 mm approx.
Population (1991 census)	31,000 approx.
Main urban areas	Totnes, Buckfastleigh, Ashburton
Administrative areas	South Hams, West Devon, Teignbridge, Torbay

3.1 1998 Compliance with River Quality Objectives (RQOs)

The 1998 RE compliance assessment, based on three years of data collected between 1996 and 1998, is shown on Map 2.

A comparison with the 1997 RE compliance assessment used in the Dart Action Plan (July 1998) shows that water quality has improved in six stretches.

The following stretches are now compliant with their RQOs: the River Dart from Austin's Bridge to downstream Buckfastleigh STW; River Hems from source to Portbridge; River Mardle from Combe to Dart confluence; River Ashburn from source to Dart confluence; and the Holy Brook from source to Dart confluence. The Bidwell Brook from Tigley to the Dart confluence now marginally fails to meet its RQO; in 1997 this was a significant failure.

Water quality in three stretches has shown no improvement: the Bidwell Brook from source to Tigley, the Harbourn River from Leigh Bridge to the Normal Tidal Limit and the Blackbrook River from source to the Dart confluence.

The Harbourne River from Leigh Bridge to the Normal Tidal Limit.

This stretch marginally failed to comply with its RQO of RE1 in 1998 as a result of elevated BOD. This failure is due to a single high BOD result in October 1997; this result was accompanied by high rainfall and elevated BOD levels in the discharge from Harbertonford STW. We expect improvements to Harbertonford STW to be carried out in AMP3 (see Issue 1).

The Bidwell Brook from source to Tigley.

This stretch significantly failed to meet its RQO of RE1 in 1998 as a result of elevated BOD. An investigation in 1998 found that this is likely to be the result of diffuse agricultural pollution.

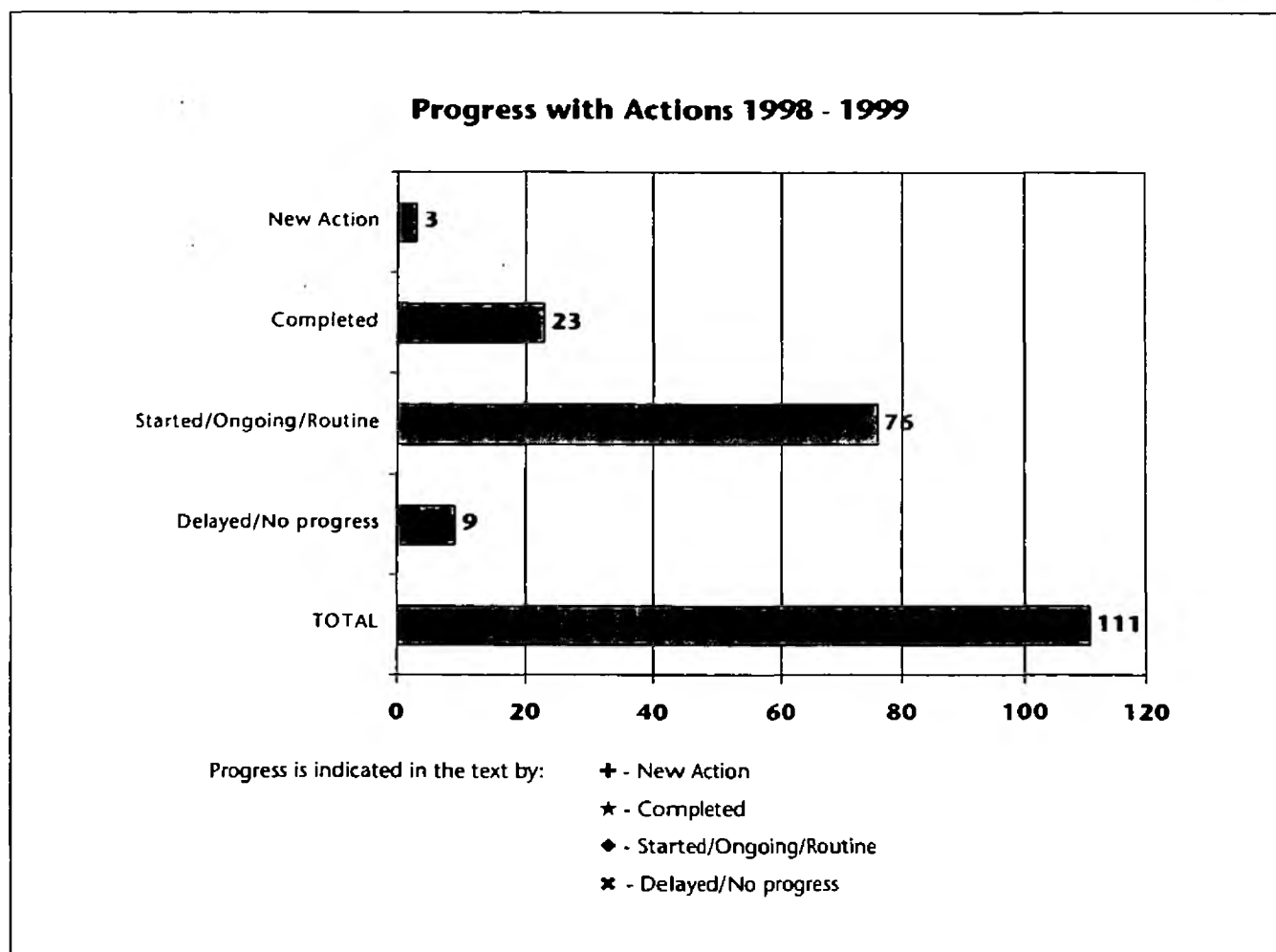
The Bidwell Brook from Tigley to Dart confluence.

This stretch marginally failed to meet its RQO of RE1 in 1998 as a result of elevated BOD. An investigation in 1998 found that poor water quality in this stretch is a combination of three principle factors: those that enhance BOD values – e.g. land runoff; poor water quality in the Shinnars Bridge tributary; and operation of the Dartington to Totnes combined main sewer overflows (See Issues 1 and 7).

The Blackbrook River from source to the West Dart confluence.

This stretch marginally failed to meet its RQO of RE1 in 1998 as a result of elevated BOD. This failure is due to a single high BOD result in March 1996. This could be the result of poor quality discharge from Princetown STW (see Issue 1) or agricultural pollution from Dartmoor Prison Farm (see Issue 7).

4 PROGRESS TABLES



Issue 1 – Impact of Effluent Discharges

We regulate the disposal of effluent to surface and groundwater 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. We achieve this by setting water quality targets for the catchment based on River Quality Objectives (RQO's) to protect recognised uses, standards laid down in EC Directives and international commitments.

The Water Companies' improvement plan for the period 1995-2000 is known as Asset Management Plan 2 (AMP2). AMP2 was developed in 1994 along guidelines agreed between the National Rivers Authority (now the Environment Agency), the Department of the Environment (now the Department of the Environment, Transport and Regions) the water services companies and the Office of Water Services (OFWAT).

OFWAT is undertaking a review of water prices which will result in a review of improvements required for the period 2000-2005; the outcome of this will be AMP3. The Environment Agency has been reviewing, for agreement with DETR, those sewage discharges where improvement is required. DETR have now considered our proposals and have translated these into detailed environmental obligations, where we expect the improvements to take place by 2005. Many of these schemes will be delivered before 2005; the Water Companies are currently preparing their Strategic Business Plans which will confirm the delivery dates of these schemes.

We expect improvements to the following STWs to be carried out in AMP 3 (2000 – 2005):

- Harbertonford :** Storm tank improvements required under the Urban Waste Water Treatment Directive (UWWTD) and further improvements required to protect downstream water quality.
- Scorriton :** Secondary treatment required under the UWWTD and further improvements required to protect water quality downstream.
- Princetown :** Secondary treatment required under the UWWTD and further improvements required to improve water quality downstream.
- Dittisham Main & Riverside:** Secondary treatment required under the UWWTD and UV disinfection required to meet the standards of the Shellfish Waters Directive.
- Stoke Gabriel:** Secondary treatment required under the UWWTD and UV disinfection required to meet the standards of the Shellfish Waters Directive.
- Ashprington:** Storm tank improvements required under the UWWTD.
- Ipplepen:** Storm tank improvements required under the UWWTD and improvements to secondary treatment required to protect downstream water quality.
- Dartmouth & Kingswear:** Secondary treatment required under the UWWTD and UV disinfection required to meet the standards of the Shellfish Waters Directive and the guideline standards of the Bathing Waters Directive.
- Galmpton:** UV disinfection required to meet the standards of the Shellfish Waters Directive.
- Totnes:** Improvements to secondary treatment required to protect downstream water quality and UV disinfection required to meet the standards of the Shellfish Waters Directive.

In addition, we have identified further improvements not required by EC legislation at a number of sites that will bring significant environmental benefit. The review of water prices will determine whether these improvements will be funded in AMP 3.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
1a ★	Continue to encourage SWWL to adequately maintain the sewerage system in and around Ashburton.	Agency	✓	✓				<1k	The River Ashburn marginally failed to comply with its RQO of RE1 in 1997. This poor water quality was thought to be due to storm discharges from a SWWL main sewer. We have encouraged SWWL to improve the level of maintenance of the sewerage system and this watercourse now complies with its RQO.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
1b ★	Carry out chemical and biological monitoring to investigate the causes of poor water quality in the River Mardle.	Agency	✓					u/k	The River Mardle from Combe to the Dart confluence marginally failed to comply with its RQO of RE1 in 1997. An investigation has been completed but we have been unable to identify any potential causes of poor water quality. This watercourse complied with its RQO of RE1 in 1998. Biological monitoring of the Mardle shows good biological quality. Sites on the Mardle and Dart will be surveyed as part of the 2000 General Quality Survey (GQA) Biological Survey.
1c ★	Investigate water quality in the Dean Burn.	Agency	✓					u/k	Routine sampling for the Dean Burn shows that water quality met RE1 standards since February 1997, and therefore no investigation was required.
1d ★	Review results of routine monitoring of the River Dart downstream of Buckfastleigh (Kilbury) STW to see if RQO failure recurs.	Agency		✓				1k	This stretch met its RQO of RE1 in 1998.
1e ★	Install powder activated carbon treatment (PACT) process at Buckfastleigh (Kilbury) STW.	SWWL	✓					n/a	A permanent dosing plant for the addition of PAC was completed in September 1998. Since completion, Agency monitoring of the works effluent has shown compliance both with the sanitary parameters (BOD, suspended solids and ammonia) and with the standards for all three organophosphorous pesticides.
1f ◆	Monitor effluent from Buckfastleigh (Kilbury) STW for organophosphate's and synthetic pyrethroids.	Agency	✓	✓	✓	✓	✓	4k p.a.	We are continuing to monitor the effluent from the STW for these substances.
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).	Agency, Angling Interests	✓					15k	No foaming incidents have been attributed to Buckfastleigh STW since July 1998. We will continue to monitor the discharge in the event of any future foaming incidents.
1h ◆	Investigate alternative options for disposal of solid wastes from scouring process at Buckfast Spinning.	Buckfast Spinning, Scourers Environmental Network	✓	✓	✓	✓	✓	n/a	Progress with this action is ongoing. At present, no alternative options for disposal of this waste have been identified.
1i ◆	Investigate impact of Landscope (Gulliford Farm) STW on water quality in the River Hems.	Agency			✓			1k	Collection of data is ongoing. A report will be produced in 2000.
1j ★	Review results of monitoring of the River Hems to see if RQO failures recur.	Agency		✓				1k	This stretch met its RQO of RE1 in 1998.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
1k ★	Investigate causes of poor water quality in the Bidwell Brook.	Agency	✓					u/k	Both stretches of the Bidwell Brook failed to comply with their RQOs of RE1 in 1998. An investigation carried out in 1998 found that poor water quality at Dartington Lodge probably derives from diffuse agricultural pollution, poor water quality in the Shinnars Bridge tributary and operation of the Dartington to Totnes combined main sewer overflows. We will address these issues in New Action 7h.
1l ★	Investigate causes of poor water quality in the Holy Brook.	Agency	✓					u/k	Routine sampling for the Holy Brook shows that water quality met RE1 standards since February 1997 and therefore no investigation was required.
1m ◆	Object to further development leading to increased sewage flows in Princetown, Landscope, Cornworthy, Dartmouth, Kingswear, Scorrison and Poundsgate; until improvements to STWs are carried out.	Agency, SWWL, TDC, SHDC, DNPA	✓	✓	✓	✓	✓	<1k pa	There have been no improvements to these works and so we are continuing to object to further development leading to increased sewage flows. We expect improvements to Princetown, Dartmouth & Kingswear and Scorrison to be carried out in AMP3. Improvements to Cornworthy STW will be carried out under a separate programme, funded by SWWL.
1n ◆	Improvements to be carried out under Urban Waste Water Treatment Directive (UWWTD) to STWs at: Princetown, Harbertonford, Broadhempston, Scorrison, Cornworthy, Ipplepen, Poundsgate, Dartmouth, Kingswear, Ashprington, Stoke Gabriel, Dittisham - By 2005.	SWWL	2005					n/a	We expect improvements to all STWs but Cornworthy, Broadhempstone and Poundsgate to be carried out in AMP3. Improvements to Cornworthy STW will be carried out under a separate programme funded by SWWL. Following clarification of UWWTD Appropriate Treatment requirements, improvements at Broadhempston and Poundsgate STW's could not be justified under this directive and had to be sought under protection of RQO. The improvements we proposed at Broadhempston and Poundsgate STW's were viewed as a lower priority by government and we would not expect them to be completed in AMP3.
1o ◆	Negotiate for improvements to be made to the discharge from Totnes STW in AMP3.	Agency	✓					u/k	We expect improvements to Totnes STW to be carried out in AMP3.
1p ◆	Negotiate with private dischargers to ensure that improvements are made - By 2005.	Agency, Private Dischargers	2005					u/k	When AMP3 is confirmed in December 1999, we will begin negotiating with private dischargers to ensure that improvements are made in accordance with the timetable being followed by SWWL.

Issue 2 – Concerns over Effluent Discharges in the Vicinity of the Dart Estuary Shellfishery

The Shellfish Waters Directive sets standards to protect shellfish from the discharge of polluting substances and includes a guideline standard for bacteria in shellfish flesh, which is included to protect public health. Following a consultation exercise by the Department of Environment, Transport and the Regions (DETR) on whether waters, including a site in the Dart, should be designated under this Directive, the Government announced, on 8 July 1999, a revision of designated EC Shellfish Waters. Consequently, an area of the Dart near Waddeton has been designated as a shellfish water. The Agency is responsible for controlling discharges to ensure the requirements of the Directive are achieved. This action by the government ensures that the Shellfish Hygiene Directive and the Shellfish Water Directive are now running in parallel, and their key aims of consumer protection and environmental protection will now complement and reinforce each other.

In order to comply with the Directive, UV disinfection is required at the following STWs: Dittisham Main and Riverside, Stoke Gabriel, Dartmouth and Kingswear, Galmpton and Totnes. We expect UV disinfection to be provided at all of these STWs in AMP3. Additionally it is expected a number of combined sewer overflows discharging to the Dart will be improved in AMP3 in order to comply with the Directive. These issues are now included in Issue 1.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
2 ★	Review sites designated under Shellfish Waters Directive - timescales unknown.	DETR, Agency, SHDC	unknown timescale					u/k	Action complete.

Issue 3 – Risk of *Cryptosporidium* Entering Public Water Supply

Cryptosporidium is a microscopic animal that can effect the gut of mammals, birds and reptiles. One species *Cryptosporidium parvum* can cause the disease Cryptosporidiosis, a symptom of which is prolonged severe diarrhoea in humans. *C. parvum* is thought to be widely present in the environment and may be found extensively in cattle and sheep.

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. There is one direct river abstraction used for public water supply in the catchment at Littlehempston.

In recognition of the national increased awareness of the potential risk to public health posed by this organism a task group was formed in 1997 with representatives from SWWL, Ministry of Agriculture Fisheries and Food (MAFF), Environmental Health Departments and the Environment Agency. This group has assessed the risk of *Cryptosporidium* entering the public water supply in the South West and SWWL will be reviewing procedures for the spreading of sewage sludge in catchments with potable supplies. The Environment Agency, in conjunction with MAFF, will also be promoting the Code of Good Agricultural Practices in the same catchments.

Issue 4 – Problems Associated with Development

The Dart Catchment is predominantly rural, with the main urban areas being situated at Dartmouth, Totnes and Buckfastleigh. Over the years the area has become increasingly popular with tourists and people looking to retire, putting increasing pressure on development needs within the catchment.

Development in inappropriate areas and with insufficient safeguards can cause environmental damage and developments within floodplains can significantly increase flood risk. However, careful developments can bring benefits, for example through the clean up of contaminated land and re-use of old buildings. The Agency is a statutory consultee on development plans and certain categories of planning application. This allows the Agency's views to be considered by the council prior to a planning application being decided or policies in a development plan being approved. Where environmental damage will occur, mitigation can be sought through the planning process.

The precise nature of contaminated land in the catchment is not fully known. When the contaminated Land Regulations are introduced local authorities will be required to identify contaminated land within their area, and it will then be necessary to decide what remedial work is required

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
4a ◆	Review air quality in the area, in line with National Air Quality Strategy.	Las	✓	✓				n/a	Part one of the review is complete, with part due to be completed by the end of 1999. It is not anticipated that there will be any adverse air quality issues within the catchment.
4b ✕	Improve knowledge of status of lichen communities sensitive to air pollution in the catchment.	DNPA, NT, Agency	✓	✓	✓			u/k	There has been no progress with this action to date.
4c ✕	Produce database on contaminated land sites in the catchment.	Las	✓	✓				n/a	This work has not been progressed due to the delays in the introduction of the Contaminated Land Regulations, which are now expected to be introduced in December 1999.
4d ✕	Ensure there is effective consultation with local authorities (Las) with regards to contaminated land.	Agency, Las	✓	✓	✓	✓	✓	<1k pa	This work has not been progressed due to the delays in the introduction of the Contaminated Land Regulations, which are now expected to be introduced in December 1999. The Agency will shortly be recruiting additional staff to deal with contaminated land issues in Devon.
4e ◆	Ensure new developments take account of sea level rises at Totnes, Littlehempston and Dartmouth.	Agency, Las	✓	✓	✓	✓	✓	<1k pa	Ongoing.
4f ◆	Oppose developments which would increase flood risk at Staverton Mill, Shinniers Bridge and Ashburton.	Agency, Las	✓	✓	✓	✓	✓	<1k pa	Ongoing.
4g ◆	Following provision of floodplain mapping, continue liaison with Planning Authorities to determine where further studies need to be carried out.	Agency				✓		10k	All level 'A' section 105 maps have been delivered to Local Authorities, with the exception of Dartmoor National Park. Updates and improvements to the section 105 survey will continue as necessary.
4h ★	Ensure sites of earth science value are identified and protected from development.	RIGS group, EN, Agency	✓	✓	✓	✓	✓	<1k pa	Dartmoor RIGS have been selected, as have those in Torbay, Teignbridge and South Hams. Recognition of these will aid protection from development.
4i ◆	Examine Section 105 survey to identify floodplains and promote and implement Devon Biodiversity Action Plan (BAP) for Rivers, Streams, Floodplains and Fluvial Processes particularly in relation to restoration/ re-	Agency	✓	✓	✓	✓		3k	This is carried out wherever possible, as part of the routine work of the Agency.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
	creation of fully functioning floodplains where this would reduce the flood risk.								
4j ◆	Support PAYBACK/Business Link initiative to reduce waste at source.	PAYBACK, Business Link, Agency, DCC, SHDC, TC, TDC	✓	✓	✓			5k	The South Devon Waste Minimisation Group involved 10 business and local authority participants, all of whom were able to identify means of reducing the amount of waste produced. Further groups will be run in this area in 2000.

Issue 5 – Impact of Mineral Extraction

There is one working quarry within the catchment; Linhay Quarry at Ashburton. Quarrying can have a considerable impact on the environment, especially to water quality, leading to high loads of suspended solids in nearby watercourses.

Mineral extraction has historically caused a loss of a number of key habitats in the catchment, particularly sites of geological interest. Potters Wood SSSI partially lies on land leased to the operators of Whitcleaves Quarry. Quarrying ceased in 1997 but the site features caves which are of national importance as roosts for the Greater Horseshoe Bat and will need to continue to be protected.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
5a ◆	Ensure key habitats are identified and protected from mineral extraction activities.	Agency, DWT, DCC	✓	✓	✓	✓	✓	<1k pa	This forms part of the routine work of the Agency.
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.	Agency, Quarry Owners, DNPA, DCC	✓	✓	✓	✓	✓	<1k pa	There are no longer any problems with the discharge from Linhay Quarry.
5c ◆	Ensure that the scientific interest of Potters Wood SSSI is maintained.	EN, Quarry Owners, LAS, DNPA	✓	✓	✓	✓	✓	n/a	EN advises quarry owners to ensure the integrity of important sites is maintained.
5d ◆	Promote and implement Devon BAP for Pits and Quarries and Caves and Mines.	DWT, RIGS, EN, Agency	✓	✓	✓	✓	✓	2k	Where possible this is carried out as routine.
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.	RIGS, DCC			✓			n/a	This action is being progressed through the Devon BAP by DCC, RIGS, EN and DNPA.
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.	DCC, Operators, DNPA, Agency	✓	✓	✓			n/a	This action is being progressed through the Devon BAP by DCC and mineral operators.

Issue 6 – Impact of Abandoned Mines

Devon has a mineral mining heritage as diverse and ancient as that of Cornwall, but on a much smaller scale. This has resulted in some long-term impacts upon the environment, in particular on water quality. There are two major problems associated with abandoned mines; acidic water draining from the mine into surface and groundwater and increased leaching of metals from the surrounding ores.

Much of the mining activity on areas of Dartmoor is centred around tin streaming, where ore deposits were worked in close relation to moorland streams. Streams, which drain shale and slate areas flanking Dartmoor, are particularly vulnerable as the mineralisation here includes sulphide ores. Abstraction of groundwater in areas where mining has occurred is extremely limited.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
6 ◆	Identify and assess effects of abandoned mine workings on unmonitored watercourses and where necessary identify remedial actions to address problems.	Agency	✓	✓				8k	The Agency is carrying out a project to identify and assess the effects of abandoned mine workings on watercourses. None of the sites in the Dart complied with the project criteria, but we will relate the findings of the project to sites within the catchment, if appropriate.

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

Over the last ten years, there have been significant improvements by farmers in farm waste storage facilities and disposal methods. This has resulted in a marked reduction in the number of point source pollution incidents attributed to farming and contributed to an overall improvement in water quality. Work still needs to be done to solve the problem of diffuse pollution, for example, from runoff from waste spread to land. Guidance to farmers is provided by MAFF through the, "Code of Good Agricultural Practice for the Protection of Water".

Other impacts of agricultural activities include the loss of blanket bog and valley mires on Dartmoor due to agricultural drainage, a decline in heather moorland due to changes in management and more intensive agricultural practices. Deterioration of salmonid habitats in the Dart headwaters have also resulted from changes in land use and land management practices.

On 1 April 1999 the new Groundwater Regulations came into force which requires anyone who disposes of List I and List II substances to land to hold a licence. This will primarily affect people who carry out sheep dipping.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
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	✓	✓				<1k	Farm management issues have been identified, and the Dart Biodiversity Project is working with the Prison Farm to address them.
7b ◆	Encourage uptake of Environmentally Sensitive Area (ESA) agreements.	MAFF, Agency, DNPA	✓	✓	✓	✓	✓	<1k pa	We aim to encourage the uptake of these schemes wherever possible as part of our routine activities.
7c ◆	Work with MAFF to ensure agri-environment schemes have appropriate prescriptions and that payments are set at correct level.	Agency, DNPA, EN	✓	✓	✓	✓	✓	<1k pa	We have been consulted by MAFF regarding the Dartmoor ESA scheme, and have commented to ensure aquatic interests are fully covered.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
7d ◆	Consider establishing buffer zones alongside rivers to reduce damage to banks by stock, reduce soil erosion and reduce diffuse pollution.	Agency, DNPA, Landowners	✓	✓	✓	✓	✓	u/k	The Dartmoor Biodiversity Project (part funded by the EA) contains actions for the creation of buffer zones. The project is due to be completed in April 2000.
7e ◆	Facilitate the securing of funding for bankside fencing to reduce erosion, where appropriate.	Agency, Landowners	✓	✓	✓	✓	✓	u/k	No works were undertaken in 1998. A coppicing and fencing scheme is planned for West Webburn during 1999.
7f ◆	Continue gravel rehabilitation work to remove the build-up of silt to re-establish gravel for salmonid spawning and monitor the effectiveness of this work.	Agency, DFA, DAA, Netting Interests.	✓	✓	✓	✓	✓	3k pa	Sites have been completed on the West Dart, Cherry Brook, East Dart, Walla Brook and Stannon Brook. Tractor and Chisel plough were used successfully in the catchment for the first time. Gravel raking / pump sites carried out in collaboration with fisheries interests. Sites will be monitored as part of the 1999 juvenile electric fishing survey.
7g ◆	Encourage adoption of best practice for swaling (controlled burning).	DNPA	✓	✓	✓	✓	✓	n/a	Swaling maps for the commons were prepared last year in a scheme co-ordinated by the Commoners Council, DNPA, EN and the Duchy of Cornwall. The effects of swaling in these areas can now be determined.
NEW ACTION									
7h +	Implement recommendations arising from investigations of the Bidwell Brook (See Issue 1k)	Agency		✓				<1k	This is a new action and there has been no progress to date.

Issue 8 – Potential Eutrophication of the Dart Estuary

Estuaries tend to be naturally quite high in nutrients; however an excess of nutrients (principally nitrates and phosphate) can result in increased production of algae and plants. If algal production becomes excessive then this can cause deterioration to the chemical, biological and aesthetic quality of the estuary.

The Dart Estuary from the Normal Tidal Limit just upstream of Totnes STW to the mouth of the estuary has been identified as a potential Sensitive Area (Eutrophic) under the UWWTD and a potential Polluted Water (Eutrophic) under the Nitrates Directive.

If the estuary is found to be eutrophic, measures to limit nutrient inputs from sewage discharges or farming may be required.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
8 ◆	Conduct chemical and biological monitoring to investigate the nomination of the estuary as a Sensitive Area or Polluted Water.	Agency, DETR	✓	✓	✓	✓		25k	We are in the second year of a comprehensive data collection exercise. Following analysis of this data, we will report in 2001.

Issue 9 – Concern over low flows

In the Dart Catchment low flows are only an issue in dry summers. However, there are concerns that low flows in the river during dry summers 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.

Moorland watercourses naturally rise and fall quickly in response to rainfall. However, there is some concern that they have become even more 'flashy' in recent years, giving rise to lower flows during dry periods and higher flows during wet periods. The vegetation cover on Dartmoor is thought to have changed in recent decades, with a loss of heather and degradation of blanket bog being recorded in certain parts. It is possible that a change in vegetation cover could affect the hydrology of the moorland watercourses, although there is currently no data available to support this supposition. Furthermore, the practice of swaling (controlled burning) could affect the hydrology of the moorland by altering the soil structure. Alterations to both soil structures and vegetative cover could also affect the way nutrients are leached from the soil.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
9a ◆	Conduct research into the effects of 'swaling' and changes to moorland vegetation on both catchment hydrology and nutrient leaching.	Plymouth University, EN, Agency, DNPA	✓	✓	✓			2k pa	The EA, EN, DNPA and Plymouth University have jointly funded a three year Phd research project on experimental burns which is due to finish in 2001.
9b ◆	Develop and implement appropriate actions following completion of research.	EN, DNPA, Agency			✓	✓		u/k	Actions will be developed following completion of the Phd project, as detailed in Action 9a.
9c ◆	Support research into climate change and assess acceptable water flows in watercourses.	Agency	✓	✓				u/k	Work is progressing on the likely impact of climate change on the environment, and how the Agency's work will / may be affected.

Issue 10 – Barriers to Fish Migration

There are 28 weirs and other obstacles in the catchment, some of which are complete barriers to the migration of salmon and sea trout. Many of the major weirs in the system have efficient fish passes and allow migratory fish free passage. However, some weirs that do not have passes seriously inhibit the movement of fish as they only permit migration during a limited range of flows. In many cases improving conditions at these weirs is of considerable importance as they prevent free access to major spawning grounds. We have limited resources to carry out these improvements and are now very reliant on external contributions and collaborative schemes to ensure that they are achieved.

There are abstractions at some sites in the system which create problems for the downstream migration of smolts. The installation of screens has proved an effective means of alleviating the problem, and recent changes in legislation made it a requirement for all abstractors to have screens installed to the satisfaction of the Agency by 1 January 1999, where a need was identified. Fish farms and abstractors also have to have continuous by-wash lowing at all times to allow downstream migration of smolts.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
10a ◆	Identify sites which create problems for the downstream migration of smolts.	Agency	✓					1.5k	The Agency currently monitors possible problem sites. The Dart Biodiversity Project has produced a leaflet "Ban the Dam" to highlight the problems caused to wildlife by artificial dams made by visitors

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
									to the National Park.
10b ◆	Following National Guidance on screening criteria; advise abstractors of the Agency's screening requirements and work towards implementation.	Agency, Abstractors	✓	✓	✓	✓	✓	4k	We are working with owners of problem sites to ensure the development and installation of appropriate and effective solutions.
10c ◆	Identify remaining obstructions to migration and consider fish pass installation if appropriate.	Agency	✓	✓	✓	✓	✓	u/k	Some weirs on the Harboure River have ben identified as obstructions which inhibit fish migration. Installation of low cost fish passage facilities are thought appropriate. Tendering is underway for works to improve conditions at Strode Road Bridge (River Mardle).

Issue 11 – Risk of Over Exploitation of the Salmon Fishery

In March 1998, the Agency reported that 1997 salmon catches were among the worst on record and that nationally, salmon stocks were depleted. Of particular concern has been the long-term decline of the larger, early running salmon which are believed to be genetically different from later running stocks.

In July 1998, following advice from the Regional Fisheries, Ecology and Recreation Advisory Committee, the Agency advertised and subsequently introduced byelaws to protect the early running fish by restricting exploitation from both the net and rod fisheries..

The byelaws will run for a ten year period although there will be a major review of stocks after five years. In addition, the Agency will also be looking to develop further measures on a river by river basis.

The National byelaws are considered the lowest common denominator across the country addressing the national problem of a decline in early-run, large salmon. Measures to address other local stock problems will continue to follow a river-by-river approach based on the programme of individual Salmon Action Plans developed by the Agency with local fisheries interests. On the Dart, the process commenced in October 1999.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
11a ★	Carry out detailed analysis of fishery data including juvenile surveys, setting spawning targets, egg deposition rates and declared catch returns.	Agency	✓	✓				5k	This action has now been completed. Stock status is to be monitored on an annual basis.
11b ★	Introduce catch controls and new Net Limitation Order (NLO) to manage exploitation in line with the findings of above.	Agency, Fisheries Interests			✓			5k unless in-quiry then 50k	National bylaws were introduced during the 1999 season for the protection of spring salmon. NLO advertised at a level of 15 for 10 years, to become effective for the next netting season (2000).
11c ◆	Produce Salmon Action Plan for the River Dart.	Agency		✓	✓			5k	Plan is in early stages of development. It is intended to set up a group of Agency staff and fisheries interests, the "Salmon Action Group", to work up the detailed plan during 1999.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
11d ✕	Carry out study to identify behaviour and spawning preferences for spring salmon, if funds available.	Agency, others		✓	✓	✓		15k pa	There has been no progress to date.
11e ✕	Develop resistivity fish counter as funds become available (timescale depends on availability of funding).	Agency, WRT, Fisheries Interests	Timescale depends on availability of funding.					60k	There has been no progress to date.

Issue 12 – Additional Threats to Fish Stocks

Concerns have been raised regarding the decline in brown trout catches in the catchment over recent years and in the increase in fish-eating birds. Both issues require further investigation to assess whether these problems are real or perceived.

Historically, fishing interests have stocked various reaches of the Dart with farmed brown trout originating from a variety of sources to improve the quality of angling. This practice may have an adverse effect on the native population by increasing competition for food and habitat, and by increasing predation of native juveniles. Furthermore, the continued introduction of farmed fish will modify the genetic integrity of remaining native stocks.

Many fisheries interests have expressed concerns that the numbers of avian predators present in the catchment have increased, particularly in the case of cormorant and goosanders. The resulting level of predation on the annual smolt run during the spring and the effect of this on the numbers of adult salmon returning to the river is a particular cause of concern.

The final results of a four-year research programme into the impact of fish eating birds have recently been publicised. The MAFF, DETR and selected organisations will meet during 1999 to establish whether the current government policy needs to be revised in light of the report's findings. Following this decision, the Agency will be in a position to determine its own approach to the recommendations made in the report.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
12a ◆	Carry out research into perceived decline in stock of brown trout.	Agency	✓	✓				20k	In a joint project between the Agency and The Wild Trout Society (WTS), a Steering Group has been set up and a consultant appointed to undertake investigation into the perceived decline of Brown Trout stocks in Devon Rivers. Phase I, to determine whether the decline is perceived or not, is due for completion during Autumn 1999.
12b ◆	Discourage stocking with fish other than those originating within the catchment.	Agency, Fishing Interests	✓	✓	✓	✓	✓	u/k	A number of native juvenile brown trout have been transferred to a fish farm for on-growing to adults. The intention is to establish a line of broodstock to produce genetically pure brown trout for re-stocking.
12c ◆	Promote habitat enhancement as a preferred method of improving stock levels.	Agency	✓	✓	✓	✓	✓	<1k	WTS / Agency are undertaking pilot study on the Cherry Brook which will demonstrate the benefits of habitat improvements. WTS are also operating a catch release on the

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
									Duchy fishery, and obtaining catch data through catch returns for brown trout.
12d ◆	Continue to work positively with fishery owners and anglers to establish the full facts in each situation.	Agency, MAFF, Landowners Anglers	✓	✓	✓	✓	✓	<1k	Routinely carried out as necessary.
NEW ACTION									
12e +	Establish Agency approach to the issue of fish-eating birds following MAFF/DETR decision regarding government policy in the light of R&D findings.	Agency, MAFF, DETR		✓	✓			u/k	This is a new action. Progress will be made in 1999/2000.
NEW ACTION									
12f +	Promote habitat enhancement as a preferred method of improving stock levels.	Agency		✓		✓		3k pa	Fencing and coppicing works to be undertaken at several sites in the catchment during 1999. Priority sites are on East Webburn, West Webburn, Cator Bridge. Benefits will be to salmon and trout stocks.

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.

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.

More information is required to ascertain whether or not acid deposition is causing any detrimental effects in this catchment.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
13a ★	Ensure Part A processes authorised under IPC legislation achieve planned emission reductions.	Agency, Industry	✓	✓	✓	✓	✓	<1k pa	All Part A processes within the catchment comply with their licence conditions.
13b ◆	Promote measures to reduce emission of nitrogen oxides from traffic.	LAs	✓	✓	✓	✓	✓	n/a	Progress is ongoing via the UK National Air Quality Strategy. (See issue 4a)
13c ◆	Examine performance of salmonid fishery as part of Salmon Action Plan.	Agency		✓	✓	✓		u/k	Salmon Action Group to meet to commence plan development in October 1999.
13d ◆	Conduct research to improve understanding of acidification of Dartmoor and its effects.	Universities, IFE, Agency, DNPA	✓	✓	✓	✓	✓	u/k	This action relates to a national Research and Development project being undertaken by the Institute of Freshwater Ecology (IFE), who are developing a method for monitoring the

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
									impacts of acidification. One of the sites used in this study is in the Dart catchment. The Project is progressing satisfactorily and data has been provided from the Agency as requested for the South West Region. Updates from the IFE will be reported on when received.
13e ◆	Assess impact of any proposals for afforestation >10 ha within the acid sensitive area.	Agency, FA	✓	✓	✓	✓	✓	<1k pa	There have been no proposals for increasing forestry within the catchment.

Issue 14 – Biodiversity and Earth Science

Biodiversity, or the variety of life, is being lost. In the UK alone over 100 species have been lost this century. The global decline in Biodiversity was recognised at the Rio Summit in 1992, where over 150 world leaders signed the Biodiversity Convention. The convention requires each country to 'develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity'. The UK responded with a process of Biodiversity Action Planning, which aims to reverse this decline by prioritising habitats and species for action, ensuring that conservation efforts are directed where they are most needed. In Devon, Biodiversity Action Planning also includes the conservation of important earth science features and processes.

"Biodiversity: The UK Action Plan" was published in 1994 and since then a number of regional plans have been produced including Action for Biodiversity in the South West (1997). In Devon a steering group involving a large number of organisations involved in conservation have produced "The Nature of Devon; A Biodiversity Action Plan for Devon". Action Plans for both Dartmoor and South Devon should be very helpful in guiding actual work on the ground.

As part of this overall process we are identifying, with others, key features habitats and species on which we will concentrate our conservation efforts. The Agency is also the UK contact point for 15 species in the UK Biodiversity Action Plan; those present in this catchment are Otter and Southern Damselfly. As a lead partner we will stimulate action to achieve targets in the UK BAP, set monitoring standards, act as a contact point and field enquiries, and agree work programmes with the identified lead partner (for these species; the Wildlife Trusts).

Many of the actions required from the Agency to protect the species and habitats in the BAPs will be carried out as part of our routine work, e.g. ensuring that abstractions do not damage wetland sites. Only actions that are specific to certain features, key habitats and species are presented below.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
14a ★	Support the Dart Valley Prime Biodiversity Project.	Agency, DNPA, Duchy, EN, Leader II	✓	✓	✓			5k pa	There is now a project officer, in a post part funded by the Agency.
14b ★	Complete process of identifying key features, habitats and species in Devon catchments, and set catchment specific targets where appropriate.	Agency, RSPB, DWT, EN, DNPA	✓					2k	The Nature of Devon: A Biodiversity Action Plan was produced in July 1998, identifying the key habitats and species.
14c ◆	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Wet Woodland.	Agency	✓	✓	✓	✓	✓	u/k	We are now looking to identify the most important areas of wet woodland to ensure they are protected and managed properly.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
14d ◆	Identify key sites of wet woodland within the catchment to achieve better understanding of extent and value.	Agency, DNPA, FA, EN, NT, DWT, Others			✓			2k	We are now looking to set targets to ensure wet woodland and its conservation requirements are recognised and also to investigate by 2000 the desirability and potential for expanding the area of wet woodland in Devon as part of a floodplain woodland project.
14e ✕	Support survey to determine invertebrate interest of wet woodland.	Agency, NT				✓		5k	There is currently no survey planned for this year, and at present no funding available.
14f ✕	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Reedbeds - including encouragement of creation of new reedbeds and conservation management of existing areas.	Agency, EN	✓	✓	✓	✓	✓	2k	There has been no progress with this action to date.
14g ◆	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Blanket bog - includes prevention of uncontrolled burning, protect hydrology; Golden plover and dunlin - need to set targets for increasing breeding populations.	DNPA, Agency, RSPB, DBWPS, EN	✓	✓	✓	✓	✓	2k	For Blanket Bog we routinely advise where appropriate on methods of maintenance and enhancement of blanket bog. For Golden plover and dunlin we are looking to set targets to maintain golden plover and dunlin as breeding species on Dartmoor and expand the golden plover population to 15 pairs by 2010 through appropriate management of targeted moorland areas, and to expand the dunlin population to 15 pairs by 2010 through appropriate management of blanket bog.
14h ◆	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Valley mire - includes possible research into hydrology and water quality; Curlew - includes control of disturbance (see also estuaries).	Agency, Universities, DNPA, ESPB, DBWPS	✓	✓	✓	✓	✓	2k	A pilot project for valley mire is being carried out on Exmoor and if successful may be carried out in other suitable areas. Few opportunities for curlew have been identified.
14i ◆	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Rhos pasture - includes promoting management agreements, scrub clearance; Marsh fritillary - includes habitat restoration, correct grazing regime; Southern damselfly - includes protection of hydrology, possible re-introduction.	DNPA, Agency, EN, BC	✓	✓	✓	✓	✓	7k	We are keen to promote fencing in appropriate places to control levels of grazing.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
14j ◆	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Upland heath - includes prevention of uncontrolled burning, and overgrazing.	DNPA, EN, Agency.	✓	✓	✓	✓	✓	n/a	We are looking at targets to prevent the loss of upland heathland to maintain current populations of red grouse and skylarks and to restore substantial areas of grass moor to heathland. This will be done through ESA agreements to control grazing and swaling.
14k ◆	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Rivers, streams, floodplains and fluvial processes - includes pollution control, production of water level management plans, increase floodplain woodlands where possible; Otter - includes continued post-mortem examinations, habitat restoration; Watervole - include identifying existing populations, carry out and support habitat restoration; Salmon - (see Issue 10 & 11)	Agency, EN, LAs, Riparian Owners, DWT,	✓	✓	✓	✓	✓	10k	The Devon BAP was launched in June 1998. No Water Level Management Plans have been identified for this catchment. We aim to maintain and restore the quality and biodiversity of rivers and streams in Devon and the Dart catchment through our daily activities. Otter - Devon BAP for otters has now been launched. We are continuing to carry out post mortems on dead otters to establish the current health of the population in addition to a DNA study being carried out in conjunction with Exeter University. We are also carrying out habitat restoration schemes where appropriate. Salmon - action for Salmon will be progresses through the development of the Salmon Action Plan in 1999 - 2000. Water vole - surveys for water vole have been carried out in the Dart Biodiversity project area. There were no occurrences of water vole in the Dart catchment within the National Park. A survey has been proposed to cover the remainder of the Dart catchment which falls outside the National Park.
14l ★	Support county-wide survey of sand martin and kingfisher nest sites.	DBWPS, RSPB, Agency, NT	✓					u/k	The countwide survey was completed in 1997. We have been provided with the data for kingfishers, though we are still awaiting a full report. There are currently no plans for another survey.
14m ◆	Retain all known sand martin and kingfisher sites and seek to create suitable conditions for colonisation elsewhere.	Agency, NT	✓	✓	✓	✓	✓	<1k pa	Where we have control over riverbank work we will ensure favourable status for these species where appropriate.
14n ◆	Promote measures to prevent loss of earth science sites and features in rivers and floodplains.	Agency, NT, DNPA	✓	✓	✓	✓	✓	u/k	A River Habitat Quality report has been produced from the River Habitatsurvey. We are continuing to encourage the identification and recognition of RIGS by Devon councils.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
14o ✕	Identify areas where flood control standards could be relaxed to improve/enhance wetland habitats.	Agency	✓	✓	✓			<1k pa	No sites have been identified to date.
14p ◆	Implement Actions from Biodiversity Action Plans for Devon and/or Dartmoor and/or South Devon for: Estuaries and estuarine habitats - includes protection from development, mapping eelgrass beds.	Agency, LAs	✓	✓	✓	✓	✓	2k	We support the Dart Estuary Project. A Study on seahorses in the estuary by the Plymouth National Marine Aquarium will include a survey of the eelgrass beds.
14q ★	Identify and document County Geological Sites.	Devon RIGS, Agency, LAs, EN, DNPA	✓	✓	✓	✓	✓	<1k pa	County Geological Sites have been identified and documented for Teignbridge, Torbay, South Hams and Dartmoor.
14r ◆	Encourage greater appreciation and understanding of County Geological Sites.	Agency, DCC	✓	✓	✓	✓	✓	<1k pa	RIGS interpretation panels (part funded by the Agency) have been produced and are being used by educational establishments such as schools and colleges. We will seek further opportunities to assist in the funding of interpretation facilities where possible.
14s ★	Include suitable survey techniques for lamprey in routine fisheries survey work, with identification to species level.	Agency	✓	✓	✓	✓	✓	<1k pa	Lamprey presence now reported to species level as part of routine salmonid monitoring programme.

Issue 15 – Spread of Invasive Plants

There are several alien plant species present in the catchment, which are excellent colonisers and which are spreading at the expense of more natural vegetation. Himalayan balsam and Japanese knotweed are widely established, and Giant hogweed, although rare, presents a significant risk to health. Under the Wildlife and Countryside Act 1981 (Section 14 (2)) it is an offence if any person plants or otherwise causes to grow in the wild plants such as Japanese knotweed or giant hogweed. We have produced a leaflet dealing with these three species and their control, which is available from our offices on request.

There are also several non-native aquatic plants, which appear to be spreading mainly through garden ponds and lakes to which they have been introduced. The most problematic species are parrot's feather (*Myriophyllum aquaticum*), fairy fern (*Azolla filiculoides*), Australian swamp stonecrop (*Crassula helmsii*), and floating marsh pennywort (*Hydrocotyle ranunculoides*). The rapid growth of these plants leads to deoxygenation of the water at the expense of other organisms and reduces biodiversity. Although they may look attractive, the plants present a public safety hazard as they form dense mats on the surface of the water which can be mistaken for solid ground. It is extremely easy for these plants to be spread unwittingly as the tiniest fragment introduced on another plant will soon flourish.

We have raised our concerns with the relevant trade associations and have asked them to increase awareness amongst retailers as to the threats presented by these plants. As it is not against the law to sell these plants, the Agency is not in a position to ban them from sale. There has been a successful press campaign aimed at increasing public awareness, and we suggest that they be removed from ponds where possible. We wish to know more about the distribution of these plants in the catchment.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
15a ◆	Encourage recording of invasive plants by field staff and others.	Agency	✓	✓	✓	✓	✓	<1k	Recent public awareness campaigns have highlighted the need for records of sites where they occur.
15b ★	Raise awareness of problem of Australian swamp stonecrop and Parrots feather through garden centre trade associations.	Agency, Garden Centre Trade Assoc.	✓	✓				2k	Relevant Garden Centre Trade Associations have been contacted regarding our concerns about these plants. A successful media campaign in the South West has highlighted the problem and raised public awareness. We are supporting English Nature moves to have swamp stonecrop added to Schedule 9 of the Wildlife and Countryside Act.
15c ★	Encourage removal from ponds of Australian swamp stonecrop and Parrots feather where already established.	Agency	✓	✓	✓	✓	✓	n/a	We regularly give advice free of charge to pond owners with problems. In addition, staff have been trained to give more specialised advice.
15d ★	Continue surveys for invasive bankside plants.	Agency	✓	✓	✓	✓	✓	2k	Surveys have been completed within the Agency. As a result we now have a good idea of the extent of the problem areas. However we still wish to hear reports of plants from external sources.
15e ◆	Carry out control on any Agency managed sites.	Agency	✓	✓	✓	✓	✓	u/k	Control of invasive plants on Agency owned or managed sites is ongoing and will continue until we have achieved eradication of the plants.
15f ◆	Encourage control by riparian owners and other interested parties.	Agency	✓	✓	✓	✓	✓	n/a	There is a need to identify sites for priority control and fishing associations can help identify sites.
15g ◆	Make invasive plants booklet widely available.	Agency	✓	✓	✓	✓	✓	<1k	In addition to the above, Cornwall Area have produced a leaflet for dealing with Japanese Knotweed. This is available from our offices on request.

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 Agency 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 / Other	Financial years					Cost	Progress
			98	99	00	01	02		
16 ◆	In the absence of general assessment support the production of document(s) covering entire area to	LAs, EH, DAS, Agency, RCHME,		✓	✓	✓	✓	3k	We are exploring the possibility of involvement with an archaeological survey in the Teign Estuary as a contribution

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
	provide a better understanding of archaeological/historic value of catchment.	University of Exeter, NT							towards the Teign Estuary Management Plan. This could be used as a 'pilot' for future surveys.

Issue 17 – Concerns with 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, such as the disturbance to wildlife caused by increased visitor pressure on certain areas of Dartmoor. The Agency recognises that recreation can conflict with other interests such as conservation, and we work with other organisations to resolve these problems.

The Agency has 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.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
17a ◆	Need to continue with careful visitor management to lessen impact of pressure from visitors to catchment.	DNPA, LAS	✓	✓	✓	✓	✓	n/a	Dart Biodiversity Project (funded and co-ordinated by DNPA, EN, Agency, Duchy of Cornwall and South Devon and Dartmoor Leader II) have produced a 'Ban the Dam' poster to raise awareness of this activity 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	✓	✓	✓	✓	✓	n/a	This is identified as an action on the Dart Estuary Management Plan, see Action 18.
17c ◆	Impact of recreational activities on conservation interests and water quality in the estuary and support Estuary Management Plan initiatives.	Agency	✓	✓	✓	✓	✓	<1k pa	No survey is planned. We support the Estuary Management Plan initiatives.
17d ◆	Take part, as a neutral party, in any discussions over access agreements for canoeists.	Agency, DNPA, BCU, Riparian Owners	✓	✓	✓	✓	✓	<1k pa	Whilst there have been no discussions on canoe access since publication of the Action Plan, this forms part of our routine activities.
17e ◆	Review safety implications of the River Dart charity raft race and encourage adoption of appropriate safe practices.	Agency, Race Organisers	✓	✓	✓	✓	✓	n/a	We encourage the adoption of safe practices where possible.
17f ◆	Investigate opportunities for improved public access to rivers, especially for the less able.	DNPA, Agency, LAS	✓	✓	✓	✓	✓	<1k pa	We will seek possibilities for improvement wherever possible.
17g ◆	Investigate opportunities for improved interpretation of water environment for visitors.	DNPA, Agency, LAS	✓	✓	✓	✓	✓	<1k pa	We will seek possibilities for improvement wherever possible.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
17h ◆	Investigate proposals for footpaths/cycleways in the catchment.	LAs	✓	✓	✓	✓	✓	n/a	We will investigate proposals where opportunities arise.
17l ◆	Develop vehicular access and public transport links for the less able.	DCC, DNPA	✓	✓	✓	✓	✓	n/a	DNPA and Local Authorities investigate proposals where opportunities arise.
17j ✕	Create angling facilities for less able at Totnes.	Agency, DAA, SWWL	✓	✓				u/k	There has been no work on this site to date.
17k ◆	Raise awareness amongst public for disturbance to wildlife.	DNPA, RSPB	✓	✓	✓	✓	✓	n/a	A National study on the impact of recreation on wildlife is taking place.
17l ◆	Increase public awareness of the dangers of fires on Dartmoor.	DNPA	✓	✓	✓	✓	✓	n/a	This action will be progressed by DNPA.
17m ◆	Raise awareness amongst anglers of need for careful management of riverside habitat.	Agency, DNPA	✓	✓	✓	✓	✓	<1k pa	Some awareness achieved through Dart Biodiversity Project, working with landowners.

Issue 18 – Dart Estuary Management Plan

The draft Dart Estuary Management Plan was launched in October 1997 for public consultation and has now been developed into the final plan which was launched in May 1998. The purpose of this plan is to provide a framework against which strategies and actions can be put in to place to manage in a sustainable way the environment of the Dart Estuary. The plan 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 / Other	Financial years					Cost	Progress
			98	99	00	01	02		
18 ◆	Support actions in the Dart Estuary Management Plan.	Agency	✓	✓	✓	✓	✓	<1k pa	Ongoing, via EA membership of the Dart Estuary Environmental Management Partnership.

Issue 19 – Concerns over use of Anti-fouling Paints on Boats

Paints based on TBT to prevent the fouling of boats by various marine organisms, such as barnacles and algae, have been in existence since the 1960s. Field and laboratory studies have shown that TBT has had an environmental impact in a number of locations around England and Wales¹¹. On commercial species such as the Pacific Oyster *Crassostrea gigas* one of the major effects of TBT is shell thickening and reduced meat yield. In 1987 the UK Government introduced a number of controls on the sale of TBT based paints and banned their use on boats less than 25 metres in length, which covers most of the recreational market.

Alternatives to TBT based paints are mainly based on copper and zinc oxides, some of which have the herbicide Irgarol added to them, there is some concern that Irgarol may have an adverse environmental effect.

The Marine Environmental Protection Committee (MEPC), a working group set up by the International Marine Organisation (IMO) to consider the harmful effects of the use of antifouling paints on ships met in November 1998. All the delegates agreed that it was necessary to prohibit the use of organotin (including TBT) compounds acting as biocides by a specific date, and that the agreement should include a mechanism for other antifouling systems, that may warrant international action. The MEPC have made recommendations to the IMO Assembly that a mechanism be developed to ensure a global ban on the application of organotin antifouling compounds on ships by the 1 January 2003, and a complete ban on the presence of organotin antifouling on ships by 1 January 2008.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
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 Authority, Agency	✓	✓	✓	✓	✓	<1k pa	TBT from paint fragments can get bound with sediments and when disturbed leach back into the water column, threatening EQS. MAFF are carrying out a study on the effects of dredging using a small agitation dredger in the Dart estuary.
19b ✕	Consider support for research into the effects of agitation dredging in areas of contaminated sediments.	Agency, MAFF, Research Institutions	✓					u/k	A request was made to the National R&D Service, however after consideration they rejected the proposal (see above).
19c ◆	Progress national research into environmental effects of alternatives to TBT.	DETR, MAFF, Agency	✓	✓				u/k	There is no specific research into this at present. Collaborative projects with DETR on 'Environmental Modelling of Antifouling', and 'Monitoring of Antifouling' are ongoing.
19d ◆	Establish levels of TBT and Irgarol in the Dart Estuary.	Agency	✓	✓				2.5k	Monthly samples were taken from June 1998 until March 1999. A report is due in November 1999.

Issue 20 – Need for Integrated Management of the Coastal Zone

Devon and Cornwall have one of Europe's finest natural and historic coastlines. There are numerous bodies in this area which have formed partnerships and developed coastal initiatives over a number of years, including Estuary Management Plans, Heritage Coasts, Shoreline Management Plans, Marine Action Plans, etc. components of LEAPs also relate to the coastal zone. The Atlantic Living Coastlines Project seeks to draw these threads together and produce a strategy for Integrated Coastal Zone Management.

No.	Action	Lead / Other	Financial years					Cost	Progress
			98	99	00	01	02		
20 ◆	Continue to support Atlantic Living Coastline Project.	DCC, CCC	✓	✓	✓	✓	✓	1k pa	Ongoing, via EA representation on the project Steering Group and relevant Focus Groups.

5 APPENDIX 1 : Changes to Actions from the Action Plan (July 1998)

- Action 11c:** **Consider introduction of rod and net fishing bylaws to reduce exploitation of spring fish.**
Removed – this action has been superseded by the introduction of the national salmon bylaws on 15 April 1999.
- Action 11f:** **Promote voluntary conservation measures for spring fish until formal measures are in place.**
Removed - this action has been superseded by the introduction of the national salmon bylaws on 15 April 1999.
- Action 11d:** Re-numbered - Action 11c.
- Action 11e:** Re-numbered – Action 11d.
- Action 11g:** Re-numbered – Action 11e.
- Action 12d:** **Co-operate with the licensing authority to progress further research into the issue of fish-eating birds.**
Removed – superseded by findings of R & D project.
- Action 12e:** Re-numbered – Action 12d.
- Action 12f:** **Implement recommendations from R & D project into fish-eating birds.**
Removed – superseded by findings of R & D project.
- Action 15g:** **Co-operate with owners and other bodies to achieve eradication of giant hogweed on Wray Brook.**
Removed – This action refers to a site in the Teign & Torbay Catchment. It can be found in the Teign & Torbay LEAP First Annual Review (April 1999)
- Action 15h:** Re-numbered – Action 15g

6 APPENDIX 2 : 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. For example, we are not responsible for:

- Noise problems (except if it its to with out work)
- Litter (unless it is restricting the flow of a river)
- Air pollution arising from vehicles, household areas, small businesses and small industry
- Collecting waste in your local area
- Planning permission
- Environmental health
- Food hygiene

These are all dealt with by your local planning authority who will contact us if necessary.

We are not responsible for the quality or supply of drinking water at the tap or for treating sewage waste, although we regulate discharges from sewers and sewage treatment works.

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. • Revoke or vary existing licences to reinstate flows or levels to surface waters or groundwater which have become depleted as a result of abstraction, and are subject to a liability for compensation. 	<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. 	<ul style="list-style-type: none"> • 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. • The Agency seeks to influence planning decisions for new development by encouraging the inclusion of water conservation measures in new properties, particularly in areas where water resources are under stress, and by ensuring that planning authorities allow for the lead time for resource development.

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 catchment.</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 catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by local planning authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Supervising the maintenance of ordinary watercourses which is a local authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance. 	<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 or proposed floodplain development. • The Agency will encourage best practice, including source control measures and common standards, among local authorities and riparian owners to protect and enhance the environment. • The Agency works with the civil authorities to prepare flood warning dissemination plans and supports their endeavours to protect communities at risk.
<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.

Agency Duty	The Agency has powers to:	The Agency has an Interest (but no powers) In :	Partnership
Air Quality The Agency has a duty to implement Part 1 of the Environment Protection Act 1990.	<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.
Radioactive Substances The Agency has a duty under the Radioactive Substances Act 1993 to regulate the use of radioactive materials and the disposal of radioactive waste.	<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 MAFF 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.
Waste Management The Agency has a duty to regulate the management of waste, including the treatment, storage, transport and disposal of controlled waste, to prevent pollution of the environment, harm to public health or detriment to local amenities.	<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. 	<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 reuse and recycling and improve standards of disposal.

Agency Duty	The Agency has powers to:	The Agency has an Interest (but no powers) In :	Partnership
Contaminated Land The Agency has a duty to develop an integrated approach to the prevention and control of land contamination, ensuring that remediation is proportionate to risks and cost-effective in terms of the economy and environment.	<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.
Conservation The Agency will further conservation, wherever possible, when carrying out water management functions; have regard to conservation when carrying out pollution control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.	<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 twelve 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.
Landscape The Agency will further landscape conservation and enhancement when carrying out water management functions; have regard to the landscape when carrying out pollution control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land.	<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.
Archaeology The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	<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 bylaws to prevent illegal fishing. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish entrapment 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.

7 ABBREVIATIONS & REFERENCES

7.1 ABBREVIATIONS

AMP	Asset Management Plan
AONB	Area of Outstanding Natural Beauty
BAP	Biodiversity Action Plan
BATNEEC	Best Available Technique Not Entailing Excessive Cost
BC	Butterfly Conservation
BCU	British Canoe Union
BOD	Biochemical Oxygen Demand
BPEO	Best Practice Environmental Option
CCC	Cornwall County Council
CSO	Combined Sewer Overflow
DAA	Dart Angling Association
DAS	Devon Archaeological Society
DBWPS	Devon Bird Watching and Preservation Society
DCC	Devon County Council
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
EC	European Community
EN	English Nature
EQS	Environmental Quality Standard
ESA	Environmentally Sensitive Area
FA	Forestry Authority
FRCA	Farming and Rural Conservation Agency
IFE	Institute of Freshwater Ecology
IMO	International Marine Organisation
IPC	Integrated Pollution Control
LA's	Local Authorities
LA21	Local Agenda 21
LEAP	Local Environment Agency Plan
MAFF	Ministry of Agriculture, Fisheries and Food
MEPC	Marine Environmental Protection Organisation
NLO	Net Limitation Order
NT	National Trust
OFWAT	Office of Water Services
PML	Plymouth Marine Laboratory
RCHME	Royal Commission on the Historic Monuments of England
RIGS	Regionally Important Geological Sites
RQO	River Quality Objectives
RSPB	Royal Society for 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
WRT	Westcountry Rivers Trust
WTS	Wild Trout Society

7.2 REFERENCES

- ¹ Our Common Future, The World Commission on Environment and Development, the Brundtland Commission, 1997.
- ² The Nature of Devon: A Biodiversity Action Plan, 1998. ISBN 1-85522-637-5
- ³ The Nature of Dartmoor: A Biodiversity Profile, DNPA/EN, January 1997.
- ⁴ Dart Estuary Management Plan, South Hams District Council, 1998.

- ⁵ South Devon AONB Management Plan, SHDC, 1997.
- ⁶ Devon's Local Agenda 21 Issues Report, Devon Local Agenda 21, 1997
- ⁷ Dart Fishing Association Action Plan, 1997.
- ⁸ European Council Directive of 8 December 1975 concerning Urban Waste Water Treatment (91.271/EEC). Official Journal of the European Communities No. L135.
- ⁹ Wildlife and Countryside Act, 1981, HMSO, ISBN 0-10-546981-5.
- ¹⁰ European Council Directive of 2 April 1979 on the Conservation of Wild Birds (79/409/EEC).
- ¹¹ Waite ME, Waldock MJ, Thain JE, Smith FJ and Milton SM (1991). Reductions in TBT concentrations in UK estuaries following legislation in 1996 and 1987. Marine Environmental Research Vol. 32, pp89-111.

Map 1 - Keysites in the Dart Catchment



**Map 2 - 1998 Compliance with River Quality Objectives
(River Ecosystem Classification)**



Information correct as of September 1999

© Crown copyright. All rights reserved. 03177G0006

MANAGEMENT AND CONTACTS:

The Environment Agency delivers a service to its customers, with the emphasis on authority and accountability at the most local level possible. It aims to be cost-effective and efficient and to offer the best service and value for money.

Head Office is responsible for overall policy and relationships with national bodies including Government.

Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol BS32 4UD
Tel: 01454 624 400 Fax: 01454 624 409

ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN

Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
Tel: 01733 371 811
Fax: 01733 231 840

SOUTHERN

Guildbourne House
Chatsworth Road
Worthing
West Sussex BN11 1LD
Tel: 01903 832 000
Fax: 01903 821 832

NORTH EAST

Rivers House
21 Park Square South
Leeds LS1 2QG
Tel: 0113 244 0191
Fax: 0113 246 1889

SOUTH WEST

Manley House
Kestrel Way
Exeter EX2 7LQ
Tel: 01392 444 000
Fax: 01392 444 238

NORTH WEST

Richard Fairclough House
Knutsford Road
Warrington WA4 1HG
Tel: 01925 653 999
Fax: 01925 415 961

THAMES

Kings Meadow House
Kings Meadow Road
Reading RG1 8DQ
Tel: 0118 953 5000
Fax: 0118 950 0388

MIDLANDS

Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
Tel: 0121 711 2324
Fax: 0121 711 5824

WELSH

Rivers House/Plas-yr-Afon
St Mellons Business Park
St Mellons
Cardiff CF3 0LT
Tel: 01222 770 088
Fax: 01222 798 555



For general enquiries please call your local Environment Agency office. If you are unsure who to contact, or which is your local office, please call our general enquiry line.

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

0645 333 111

The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water.

ENVIRONMENT AGENCY EMERGENCY HOTLINE

0800 80 70 60



**ENVIRONMENT
AGENCY**

