EA SOUTH WEST LEAPS

local environment agency plan

SID AND OTTER

ACTION PLAN

PLAN from NOVEMBER 2000 to NOVEMBER 2005

ENVIRONMENT AGENCY

Foreword

The Environment Agency is a major environmental organisation responsible for regulating waste disposal to land, industrial releases to air, and safeguarding and improving the natural environment. Our aim of integrated environmental improvement in the Sid and Otter Local Environment Agency Plan (LEAP) area contributes to the achievement of global sustainability in accordance with the spirit of the 1992 Rio de Janeiro 'Earth Summit' agreement.

The LEAP area includes major sections of both the Blackdown Hills and East Devon Areas of Outstanding Natural Beauty which offer protection to a diverse environment. It also includes the coastal resorts of Sidmouth and Budleigh Salterton, which both support a thriving tourist industry. We must all work to protect the beauty and wildlife of the area from growing pressures whilst recognising their importance to the local economy.

This Action Plan sets out what we believe to be the environmental issues in the area, together with actions both for ourselves and in partnership with others.

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Area Manager (Devon)

ENVIRONMENT AGENCY

EA South West
LEAPS

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

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1. Introduction

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 Section 6. 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"[1].

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 a 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 a precautionary approach, 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 conserve and improve river navigation
- 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.

Local Environment Agency Plans (LEAPs)

In November 1996 we published the Rivers Sid and Otter Catchment Management Plan Action Plan, following a consultation process undertaken by one of our predecessor organisations, the National Rivers Authority. We now hope to build on this by widening the scope of environmental issues tackled to include the additional areas of responsibility of the Environment Agency (mainly waste management and the regulation of heavy industry) by producing this LEAP.

We are committed to the programme of LEAPs to help identify, assess, prioritise and solve local environmental issues related to our functions, taking into account the views of our local customers.

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. For our part we are committed at the local level to a programme of LEAPs in order to produce our local programme of integrated action for environmental improvement.

The LEAP process involves several stages as outlined below.

LEAP Action Plan Consultation Draft - The publication of the Sid and Otter LEAP Consultation Draft marked the start of a three-month period of public consultation. The purpose of the consultation period was to enable external organisations and the general public to put forward their views on the environmental issues which affect the area. At the end of the consultation period we produced a Summary of Public Consultation which gave the results of the process and our response to the comments made, copy available on request. A list of the organisations and other bodies who responded to the Consultation can be found in Appendix 1.

The Action Plan - The Action Plan takes into account the results of the consultation and sets out actions, identifying costs, timescales and partner organisations. Agreed actions will be incorporated into our annual business plan.

Updating and reviewing this plan - Around the anniversary of publication of the Action Plan and then every 12 months thereafter we will publish an **Annual Review** to report on the progress in carrying out our planned actions, to both the LEAP Steering Group, Key Stakeholders and the wider community. This will also provide us with an opportunity to add new issues and actions and to remove those which are no longer appropriate. **We invite people to contact us at any time to raise new issues or suggest new actions - this ensures the LEAP process is an active one, which constantly evolves to meet the changing needs of the local environment. Our address can be found on Page ii**. 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 Draft to reflect these changes to further improve the local environment.

Action Tables

The tables in Section 4 outline the actions needed to address the issues identified as part of the LEAP process. These tables show the following information:

- the organisations which will be involved in implementing the proposed actions, either in a lead role or as a key supporter, are listed under the heading '**Action by Lead/*Other***'
- which of the Agency's nine environmental themes (see Section 4) the action addresses
- a timetable for progressing the action
- an estimate of the cost to us over the next five years. The inclusion of a cost does not mean funds have been allocated to the action. The letters 'n/a' indicate that we do not contribute to the funding of the action. There are also actions where the cost of completion is not yet known. All actions will be incorporated into our annual Devon Area Business Plan on a priority basis and bids will be made for appropriate funding. It should be noted that the inclusion of an action in the LEAP does not guarantee that funding will be available for its completion.
- the financial years covered by this plan are represented by a single year. For example, '00' identifies the financial year April 2000 to March 2001.

Please refer to the Glossary at the end of the report for the definition of acronyms and abbreviations.

The following points should also be noted:

- our everyday work commits substantial resources to monitoring and managing the environment

- some actions will require feasibility studies and cost-benefit appraisal of options prior to work commencing. In some cases, depending on the outcome of these studies, further actions may not be justified. Both ourselves and participating organisations have limited resources and powers and this means that some work may take longer than indicated owing to funding availability, government policy or changing priorities
- new actions will be added to the LEAP as part of the ongoing process and will be highlighted in the Annual Reviews

Devon Area Business Plan

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

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

2. The Leap Area

Key statistics for the Sid and Otter LEAP Area

LEAP Area	283 km² approximately
Length of river monitored for classification purposes	River Otter 73.5 km River Sid 14.7 km
Average annual rainfall	1130 mm per annum over the Blackdown Hills 773 mm per annum at Sidmouth
Population (1991 census)	45,986
Main urban areas	Budleigh Salterton, Honiton, Ottery St Mary, Sidmouth
Administrative areas	East Devon District Council, Taunton Deane Borough Council, Mid Devon District Council

The LEAP Area

The LEAP covers an area of approximately 283 km² of East Devon from the Blackdown Hills in the north to Sidmouth and Budleigh Salterton in the south. It is a predominantly rural area of high conservation value which is reflected by its two Areas of Outstanding Natural Beauty (AONB). There are also a number of sites and features of both historical, archaeological, and geological importance, including recently discovered sites of Roman age and earlier along the line of the A30 improvements, and the proposed World Heritage Coast.

There are two river systems in the area. The River Otter rises on the Blackdown Hills running in a south-westerly direction past Upottery, Monkton, Honiton, Ottery St Mary and Newton Poppleford until it reaches the sea near Budleigh Salterton. It has a number of tributaries including the River Tale, River Love and River Wolf. The River Sid rises on the edge of Pen Hill Woods above Ottery St Mary and runs in a southerly direction through Sidbury and Sidford, entering the sea at Sidmouth.

The industry of the area is dominated by agriculture and some forestry. Quarrying is also important, particularly in the south-east of the area. The main urban areas are Honiton, Sidmouth, Ottery St Mary and Budleigh Salterton, with numerous smaller settlements throughout. In the Local Plan[2] the main area for housing provision is located at Honiton. Communications in the area are generally good. The A30/A303 which is the main east/west route into Devon runs through the area as does the main rail link between Exeter and London (Waterloo).

Recreation and tourism in the area tends to be concentrated around the popular coastal resorts of Budleigh Salterton and Sidmouth. The pebble and cobble beaches are in contrast to the sandy beaches to the west of the LEAP area and attract users with different requirements. Many water-based activities take place off the beach and with an increase in leisure pursuits, there is potential for conflict between users of small craft, such as between jet skis and bathers.

Inland there is a popular, well-used public footpath which runs up the west bank of the River Otter from Budleigh to Ottery St Mary, passing through the towns of Otterton, Newton Poppleford and Tipton St John. The path has been upgraded by East Devon Coast & Countryside Service along the estuary to allow wheelchair access and also includes screened viewing platforms to see the estuary without disturbing birds. Further up the river there are good views across the farmed landscape of the Otter floodplain, restricted in the east by sandstone cliffs. There is public access through Sidmouth along the banks of the River Sid through built-up areas and urban parkland. The South West Coast Path runs all along the coast, whilst the East Devon Way winds across the LEAP area several kilometres inland.

Geology & Soil

The geology of the LEAP area is dominated by the Permo-Triassic mudstones and sandstones which are overlain in the east by the Quaternary clays/flints and the Cretaceous greensands and chalk.

The northern and eastern parts of the LEAP area are largely underlain by Mercia Mudstone which generally consists of calcareous clays and mudstones. The eastern border of the River Otter is capped with deposits of Upper Greensand which in turn is overlain by deposits of clay with flint.

The western half of the LEAP area is underlain by Permo-Triassic deposits, the oldest of which is the Budleigh Salterton Pebblebeds which outcrop to the west of the LEAP area. The East Devon Pebblebed Heaths which are of great ecological value have formed over this geological deposit.

Overlying the pebblebeds and outcropping over much of the southern part of the LEAP area are the Otter Sandstones. These weather well to give well-drained, fertile soils which are suitable for both arable and grass production. Heavier soils derived from the Mercia Mudstone are found further east and are better suited to permanent pasture than those over the sandstone. The Upper Greensand hill tops which are capped with clay have very little soil and are covered with heath and rough grass.

Groundwater - The Sid and Otter LEAP area is underlain by regionally important aquifers which have been extensively exploited for both public and private supplies. The most important of these are the Otter Sandstone and the Budleigh Salterton Pebblebeds which collectively form the Sherwood Sandstone Group.

The Otter Sandstone has been developed for public water supply within the Otter Valley. The sandstones attain a thickness of over 100m and have a high porosity. Groundwater flow is via rock pores with secondary flow via joints and fractures. The Budleigh Salterton Pebblebeds almost certainly provide recharge to the Otter Sandstone and have also yielded water from the base of deep public supply boreholes in combination with the sandstone.

The Upper Greensand is usually an important aquifer; however, within this catchment the outcrop is not very thick and covers only a small area, often with unconsolidated sand, making it difficult to establish boreholes. Therefore, it has limited importance as a water resource. Minor springs from the Upper Greensand have been tapped for private use as well as supporting valuable wetland habitats such as springline mires and wet woodland. The Upper Greensand is also significant in maintaining river flows in dry summers.

The clay with flints and Mercia Mudstones are not generally considered to be aquifers, but they do provide a source for small private supplies.

There are around forty groundwater observation sites within the LEAP area. Groundwater levels are either recorded continuously by using a chart recorder or logger, or manually every two weeks.

River flows - Water levels are monitored continuously at eight river gauging stations within the LEAP area. In addition, one site at Fairmile monitors flow directly. Water-level data from the other stations is converted to flow in the office. Information for flood-warning purposes comes from gauging stations at Dotton and Fenny Bridges, water-level recorders at Upottery and Sidbury and a rain gauge at Gittisham. The natural river flows are mainly influenced by the geology and topography of the area. Headwater tributaries in both river catchments derive river flow from the Upper Greensand during dry summers.

The River Sid is characterised by a rapid response to rainfall. This is because its flow is derived mainly from direct surface runoff from the steep and relatively impermeable clay with flint hills which overlook the Sid. The River Sid is a short steep river with an average gradient of 20.1 m/km.

Because of the absence of river gauging stations along the River Sid, theoretical flows have been calculated to give a mean daily flow of 0.574 m^3/s and a Q95 (the flow exceeded for 95% of the time, on average) of 0.134 m^3/s.

Although **the River Otter** has a much shallower gradient than the River Sid (6.4 m/km), flooding is characterised by a very rapid rise and fall of water levels, with high flood peaks. Downstream of Fenny Bridges the river is underlain by the Otter Sandstone geological formation which makes a significant contribution to river flow.

The flow record at Dotton gauging station on the River Otter for the period 1963-1999 shows a mean daily flow of 3.116 m^3/s and a measured Q95 of 0.941 m^3/s. The Q95 flow represents 30% of the mean daily flow.

Wildlife - Habitats & Species

The Sid and Otter LEAP area contains a wide variety of habitats and species of high conservation value. The south-west of the area is dominated by the East Devon Pebblebed Heaths, an area of international conservation importance. The heaths comprise areas of wet and dry lowland heath with associated mire communities, which in turn support internationally important breeding populations of nightjar and Dartford warbler. This importance is recognised by European legislation and the heaths are designated as a Special Protection Area (SPA) for breeding birds and as a candidate Special Area of Conservation (SAC) for wet and dry heath and the presence of southern damselfly. Other

noteworthy species using the heaths include breeding hobby and curlew, and overwintering hen harrier. In recognition of its national importance the site is also designated as a Site of Special Scientific Interest (SSSI).

Another site of European importance occurs along the eastern coast of the catchment, namely the Sidmouth to West Bay candidate SAC, which is recognised for its vegetated sea cliffs, which support uncommon plant species comprising some of the best plant communities within the United Kingdom.

The catchment also contains a number of other SSSIs, which include Hense Moor, one of the most important wildlife sites within the Blackdown Hills, with a diverse range of habitats associated with spring lines including species-rich grasslands, bogs and wet heath. The moor supports notable plants (the pale butterwort and great sundew) and species including the raft spider, grasshopper warbler and the endangered marsh fritillary. The Otter Estuary is also an SSSI on account of its well-developed saltmarsh flora and marginal habitats.

The northern section of the catchment lies within the Blackdown Hills, a distinctive landscape rich in diverse habitats which include mires, neutral and calcareous grasslands, wet and dry woodlands, lowland heath all within a farmed landscape partitioned by an extensive network of hedgerows/hedgebanks. The area's environmental value has been developed and maintained by traditional farming practices, and financial incentives are available through the Blackdown Hills Environmentally Sensitive Area scheme, administered by MAFF, to encourage the continuation of traditional low-intensity farming practices (see Issue 7 - Enhancing Biodiversity and Earth Sciences).

Archaeology & Heritage

The County Sites and Monuments Register records approximately 2200 sites of archaeological and historic interest within the LEAP area. Of these, approximately 80 are statutorily protected as Scheduled Ancients Monuments, and of these, prehistoric barrows form the single biggest Scheduled Monument type. The area is known to contain potentially significant non-human evidence from the Paleolithic, and a submerged forest of probable Mesolithic date has been recorded at Sidmouth.

A major Neolithic occupation site has been recorded at Hembury, within the area of the later Iron Age hillfort. However, the earliest major visible evidence of human activity in the area are the Bronze Age barrows on the high ground, including those on the East Devon Pebblebed Heaths, the high ground between Honiton and Sidmouth and on the Blackdown Hills.

During the Iron Age there was an increase in activity as evidenced by the numerous hillforts at both coastal sites like Berry Cliff and inland sites like Hembury, Blackbury and Dumpdon. Whilst not all these sites were occupied during the Iron Age others, such as Hembury, were reoccupied with the arrival of the Roman Army who constructed a fort inside the ramparts. During the period of Roman occupation further sites were developed in the area including the fort found along the line of the new A30 outside Honiton. The iron deposits on the Blackdown Hills were also exploited at this time and this exploitation continued into the medieval period.

By the end of the Saxon period the basic settlement pattern was established. By the 11th century there was a flourishing rural economy with many mills along the rivers, and in the high Middle Ages arable cultivation probably covered about two thirds of the lower land. It seems probable that this land was cleared at an early date and remained heathland grazing until enclosed in the 18th and 19th centuries. In contrast, the valleys remained wooded until much later.

By the medieval period small boroughs had developed, but substantial urban growth did not come until the Elizabethan period when Honiton developed as a centre of the lace and cloth industries, flourishing up until the 19th century. On the coast, there had probably been small market and fishing settlements like Sidmouth from medieval times, but from the Regency period onwards, these began to develop as seaside resorts and have continued a steady expansion ever since. The coming of the railways further aided the development of the area, though nowadays the rail link is confined to Honiton and Feniton.

In addition to their nature conservation value, lowland heaths also contain significant numbers of surviving archaeological features. The management of these areas needs to take account of this resource, as enhancement of the natural environment here can often cause damage to, or destruction of, archaeological features (see Issue 7 - Enhancing Biodiversity and Earth Sciences). There is also the potential for the preservation of waterlogged archaeological features in parts of the LEAP area such as the Otter Estuary, lowland heaths and spring-line mires. These areas may also provide important information on the past environment.

Landscape

The landscape of the LEAP area is significant in being covered by one designation or another. The East Devon Area of Outstanding Natural Beauty (AONB) covers much of the southern part of the LEAP area, whilst the Blackdown Hills AONB straddles the northern half. This designation recognises that the natural beauty of the area is of national importance and worthy of protection. Proposals are currently being developed by the Government to strengthen the statutory protection afforded to AONBs, providing them the same level of protection as National Parks. There will also be a requirement to adopt management plans for AONBs to ensure their protection. The East Devon coastline east of Budleigh Salterton is also recognised for its natural beauty and forms part of the proposed World Heritage Site.

In addition to statutory landscape designations, English Nature has developed the concept of Natural Area profiles, through which the country has been divided up into areas each with their own unique identity arising from the interaction of wildlife, landform, geology, land use and human impact. The unique identity of each Area confers a 'sense of place' and a distinctive nature conservation character. It is envisaged that the development of Natural Areas will help to provide an improved framework from which it will be possible to secure support for wildlife and geological conservation. The Sid and Otter LEAP area lies within three of these Natural Areas, namely the Devon Redlands, the Blackdowns and Lyme Bay Maritime. The Countryside Commission (now Countryside Agency) has also developed similar areas known as 'Character Areas'.

The whole coastline of the LEAP area lies within the proposed Dorset and East Devon Coast World Heritage Site, as put forward by the Government to UNESCO. As a World Heritage Site, the coast would receive international recognition as an area with globally important geological interest. The area has great scientific and educational importance, with some of the finest coastal scenery in Britain. In particular the site includes some of the best examples of landslips, sandspits, coves and barrier beaches found in Britain. The complex marine topography includes submerged cave systems and offshore reefs and an outstanding range of wildlife is associated with these marine and coastal features. The coastal features of particular note in the LEAP area are the eroding Triassic Sandstone outcrops at Budleigh Salterton and Ladram Bay.

3. Targets for Water Quality

Managing Water Quality

We monitor 83.9 km of rivers in the Sid and Otter LEAP area. Chemical quality is monitored annually and biological quality every five years. In 1998 90% of monitored river length was of good chemical quality and 10% was of fair quality. We are carrying out a five-yearly assessment of the biological quality in 2000.

We manage water quality by setting targets called River Quality Objectives (RQOs). RQOs are intended to protect current water quality and future use, and we use them as a basis for setting consents for new discharges and planning future water quality improvements.

We also manage water quality by applying standards set in EC Directives (see Appendix 3). Incidents of failure to comply with these standards and RQOs are outlined in the Issues section of this document.

We have set RQOs using a classification scheme known as the River Ecosystem (RE) Classification which was introduced by the National Rivers Authority, following public consultation, in 1994. It replaces a former scheme introduced by the Water Authorities in the late 1970s and used by the NRA until 1994. The RE Classification comprises five hierarchical classes as summarised below:

Table A - The River Ecosystem classification scheme

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

These classes reflect the chemical quality needed by different types of river ecosystem including the types of fishery they can support. We set RQOs based on the need to protect current water quality and future use.

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

Where we were unable to identify solutions or resources to resolve current water quality problems, we have set a Long Term RQO. We will measure compliance against RQOs but use Long Term RQOs as a basis for setting consents for new discharges. This will ensure that future developments will not prevent us from achieving our long-term objectives.

The rivers of the Sid and Otter LEAP area have been divided into 16 classified stretches and the RQOs we have set are outlined in the table below and shown on Map 2. Where a reach does not comply with the proposed RQO, the reasons are investigated and the necessary actions are taken to achieve compliance.

Compliance with RQOs

Map 2 shows where current water quality fails to meet its RQO. This assessment is based on three years of routine monitoring data collected between1997 and 1999 and held on the public register. We have shown failures to meet RQOs as significant and marginal. Significant failures are those where we are 95% certain that the river stretch has failed to meet its RQO. Marginal failures are those where we are less certain (between 50% and 95%) that the stretch has failed to meet its RQO.

Of the 16 monitored stretches in the Sid and Otter LEAP area, 3 stretches marginally failed to meet their RQOs. (See Issue 1 - Impact of effluent disposal and Issue 4 - Impact of Farming.) There were no significant failures to meet RQOs.

We have also assessed whether river stretches meet their long term RQO. Of the 6 stretches with long term RQOs, 3 significantly failed to meet the standards. (See Table B below.)

The monitoring site for the Knowle Brook was changed and monitoring of this watercourse stopped in 1998. Monitoring has been reinstated, but there is currently insufficient data to be able to classify this stretch for RQO purposes.

Table B - RQO Classification for LEAP area (1999)

River	Stretch	RQO	1999 Compliance with RQO	Long Term RQO	Compliance with Long Term RQO
Sid	Source - Normal Tidal Limit	2	C		
Roncombe Stream	Source - Sid confluence	2	C	1	C
Otter	Reservoir Outflow - Hoemore Farm	2	C	1	C
	Hoemore Farm - Rawridge	2	C	1	S
	Rawridge - Clapperlane Bridge	2	C	1	S
	Clapperlane Bridge - Cottarson Farm	2	C		
	Cottarson Farm - Weston	2	C		
	Weston - Above Ottery St. Mary (Town) STW	2	C		
	Above Town STW - Below Town STW	2	C		
	Below Town STW - Tipton St. John	2	M		
	Tipton St. John - Dotton Mill	2	C		
	Dotton Mill - Normal Tidal Limit	2	M		
Tale	Source - Otter confluence	2	C		
Gissage	Source - Otter confluence	1	M		
Love	Source - Otter confluence	2	C	1	S
Knowle Brook	Squabmoor Reservoir - Normal Tidal Limit	2	U	1	U

C = Compliant with RQO
M = Marginal failure of RQO
S = Significant failure of RQO
U = Unclassified due to insufficient data.

4. Issues and Proposed Actions

Environment Strategy

We have a wide range of environmental management and regulatory responsibilities which need to be implemented within the framework of an environmental strategy if our principal aims and objectives are to be met. Our publication 'An Environmental Strategy for the Millennium and Beyond'[3] describes how we are taking forward an integrated approach to management of the environment across air, land and water through the implementation of nine environmental themes. They are:


Addressing Climate Change


Improving Air Quality


Managing our Water Resources


Enhancing Biodiversity


Managing our Freshwater Fisheries


Delivering Integrated River-basin Management


Conserving the Land


Managing Waste


Regulating Major Industries

We will deliver this strategy at a local level through dialogue between ourselves and other organisations involved in the protection and management of our environment. As a first step towards achieving our aims and objectives and delivering our strategy in this LEAP area we have identified a series of environmental issues and proposed actions, upon which we sought comment.

These issues are presented on the following pages, with each action allocated against a theme or themes. Some of these actions will have been carried over from the Rivers Sid and Otter Catchment Management Plans. Actions will be priority rated and incorporated into our annual business plans. The priority rating of an action will affect its ability to acquire funding. Therefore, it should be noted that the inclusion of an action in the Action Plan does not guarantee that funding will be available for its programmed completion.

Issue 1: Impact of Effluent Discharges

We regulate the disposal of effluent direct to surface or groundwater by determining and enforcing discharge consents. Discharge consents can only be used to control point source discharges, for example:

- Continuous discharges - sewage works, industrial etc.
- Intermittent discharges - sewer overflows, surface water runoff etc.
- Discharges to ground - soakaways etc.

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.

Effluent discharges from sewage treatment works (STW) can lead to failure of chemical and microbiological targets that have been set to maintain certain levels of use e.g. water for drinking or bathing. In addition, discharges can have an aesthetic impact or cause rivers and estuaries to become enriched with increased levels of nutrients. Nutrients accelerate the growth of algae which can lead to fish kills and cause the water to turn green. Because we aim to maintain and where appropriate improve water quality, we have identified where discharges of sewage effluent are causing problems and what we can do to resolve them (see below - Eutrophication).

Sewage treatment improvement plans - Improvements to Sidmouth STW have recently been completed to meet the requirements of the EC Urban Waste Water Treatment Directive[6] (UWWTD) and EC Bathing Waters Directive[5]. These improvements include the provision of secondary and ultraviolet (UV) treatment. Concerns were raised regarding the siting of this new STW (see Issue 2 - Impact of Development).

OFWAT has undertaken a review of water prices which has resulted in a review of improvements required for the period 2000-2005; the outcome of this is AMP3. We have reviewed, for agreement with DETR, those sewage discharges where improvement is required. DETR have now considered the 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 and the Water Companies have prepared Strategic Business Plans which have confirmed the delivery dates of these schemes.

The STWs in the Sid and Otter LEAP area where improvements are to be carried out under AMP3 are:

STW	Receiving Water	Required Treatment Level	Investment Driver	Due By
Churchinford	River Otter	Improved treatment	Protection of downstream RQO	March 2002
Sidmouth	Lyme Bay	Outfall improvement	UWWTD	September 2000
Otterton	Lyme Bay	UV treatment	Bathing Waters Directive (achieving guideline compliance at designated bathing waters)	December 2001

Three intermittent discharges are also to be improved under AMP3. These are the storm tanks at Churchinford STW and Ottery St Mary (Fluxton) STW and the Combined Sewer Overflow (CSO) at Ottery St Mary (Fluxton) STW. These improvements are to meet the requirements of the Urban Waste Water Treatment Directive[6]. The improvements at Ottery St Mary (Fluxton) STW are due by the end of December 2005 and at Churchinford STW by the end of March 2002. **Action 1a.**

As well as discharges from STWs operated by South West Water Ltd (SWWL) there are also discharges from privately owned sewage treatment plants. Private individuals can apply for **first time sewerage** under Section 101A of the Water Industries Act[4]. This Act introduced new duties on water service companies to provide public sewers for certain domestic properties not currently connected, where environmental or amenity problems exist or are likely to arise. We will act as an arbitrator if there is disagreement over the need for a scheme. There are currently applications for first time sewerage in the Sid and Otter LEAP area for Colesworthy and Monkton.

RQO non-compliance - The River Otter below Ottery St Mary STW to Tipton St John marginally failed to meet its RQO of RE2 in 1999 as a result of elevated BOD. Investigation of the 1998 failure revealed that the cause of poor water quality was unknown, but that operation of the storm overflow at Ottery St Mary (Fluxton) STW appears to exacerbate the poor water quality in this stretch. This does not appear to be the case for more recent failures; water quality downstream of the Fluxton storm overflow meets the RE2 standard, but is exceeded at Tipton St John. **Action 1b.**

The Metcombe Brook and the Fluxton Brook join the River Otter just upstream of our sampling point. There have been reports of a milky white discoloration in the Metcombe Brook and it is possible that this watercourse is causing poor water quality in the main river. In addition, fisheries surveys show there is very little spawning in the Fluxton Brook which may indicate pollution.

Impact on biological quality - The overall biological quality of the watercourses in the Sid and Otter LEAP area is good, with data showing that there was an improvement in the biological quality between 1990 and 1995. However, a decline in quality of the River Tale was identified in 1998. This is believed to be due to organic pollution from discharges from septic tanks and work has been undertaken to improve the quality of these discharges. This site will be sampled during 2000 as part of the General Quality Assessment (GQA) survey to provide an assessment of biological quality and the information gained will be used to establish any potential for improvement. A new package sewage treatment plant has also been installed for the Fairmile Inn and three other properties 150 metres upstream from the survey point. **Action 1c.**

There have been problems in the past with the discharge from Combe Raleigh STW. The biological quality of the Combe Raleigh Stream has improved since 1994, and the most recent biological data is indicative of good water quality. We are continuing to monitor the site to ensure that water quality does not deteriorate.

Bathing waters - There are four bathing waters in the LEAP area identified under the EC Bathing Waters Directive[5] (see Appendix 3). These are Sidmouth (Town), Sidmouth (Jacobs Ladder), Ladram Bay and Budleigh Salterton. In the period 1990-1998 there have been bathing water failures at Budleigh Salterton in 1993 and 1994, and Sidmouth (Town) in 1994. All four of the designated Bathing Waters passed the mandatory coliform standards and were, therefore, compliant with the Bathing Waters Directive[5] in 1999.

Past failures of the mandatory standards at Budleigh Salterton were likely to have been due to unsatisfactory SWWL discharges to the sea and estuary. SWWL's Exmouth scheme was completed in 1995 and sewage from Budleigh Salterton is now transferred to Exmouth STW for treatment. At the same time inputs to the River Otter were investigated and actions taken where necessary. The bathing water at Budleigh Salterton has been compliant with the Directive since 1995.

Failure of the mandatory standards at Sidmouth Town in 1994 was likely to have been due to a combination of the crude outfall and freshwater inputs. The River Sid can contribute to non-compliance with the standards of the Directive[5], and we routinely monitor the bacterial quality of the River Sid. The bathing water at Sidmouth Town has been compliant with the Directive since 1995. The new sewage treatment works for Sidmouth, which is due for completion by December 2000, will include both secondary and UV treatment. This investment should ensure that sewage discharges do not compromise compliance with the Directive[5] at Sidmouth Town in future.

Septic tanks - In areas not served by the main sewer, domestic effluent can be treated by a septic tank. Effluent from septic tanks should not be discharged directly to a watercourse, but via a soakaway. Discharges from small treatment plants are allowed to discharge to watercourses once they have received secondary treatment if the owner holds a licence known as a 'Discharge Consent'. Users of septic tanks are responsible for ensuring they are maintained and used correctly. There is concern that some people, especially those moving to properties with a septic tank for the first time, do not know how to maintain their tanks correctly. Owners of discharge consents have to inform the Agency when a property changes hands, we will then send information leaflets out to the new owners when the consent to discharge is transferred. **Action 1d.**

Aesthetic Impact - Although the water quality at Sidmouth is compliant with the EC Bathing Waters Directive[5], there is currently a problem with sewage debris being visible in the water. Interim improvements to the screening facility at the pumping station should improve the present unacceptable situation; the situation will be resolved with the commissioning of the new STW (see above).

Eutrophication - Elevated levels of nutrients in a watercourse, particularly nitrates and phosphates, can result in the increased production of algae and higher plants. If algal production becomes excessive then this can affect the chemical, biological and aesthetic quality of a waterbody; this is known as eutrophication. The major sources of nutrients in a watercourse are agricultural runoff and sewage effluent. We have developed a national strategy for dealing with eutrophication, which focuses on a partnership approach to the management of the problem. (See Issue 4 - Impact of Farming.)

The Urban Waste Water Treatment Directive[4] requires higher standards of treatment for discharges to *sensitive* areas. Sensitive areas are those waters that receive discharges from the equivalents of 10,000 people or more and are, or may become, eutrophic in the future. The DETR determine if a watercourse is a sensitive area based on studies undertaken by ourselves. If sites are designated as sensitive areas, we are responsible for ensuring that discharges to them are improved. The River Otter has been identified as a candidate sensitive area (eutrophic). The qualifying STW is Honiton. If designated, nutrient reduction may be required at Honiton STW. Our report on this will be completed in June 2001. We will only develop an action to address this issue if the River Otter is designated.

Table 1 Impact of effluent discharges

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Complete improvements to Sidmouth STW, Otterton STW and Churchinford STW under AMP3.	SWWL, *Agency*	n/a		●	●	●	●
b	Investigate cause of RQO failure in the River Otter at Tipton St John.	Agency	<1k		●			
c	Carry out an investigation to assess the biological quality of the River Tale and identify potential areas for improvement.	Agency	unknown	●	●			
d	Ensure information leaflets on care of septic tanks are sent to new property owners on the transfer of Consents to Discharge.	Agency	<1k	●	●	●	●	●

Issue 2: Impact of Development

Increased development can put pressure on our water resources and sewage treatment works which can lead to failure of water quality objectives (see Issue 1 - Impact of Effluent Discharges), increase the risk of flooding, cause air quality problems and generate extra waste. However, development can also bring benefits such as the redevelopment of brownfield sites and the clean-up of contaminated land. We will use the planning process to ensure that where damage could occur, appropriate mitigating measures will be taken.

Development within the LEAP area is controlled by the local planning authorities: East Devon District Council, Mid Devon District Council and Taunton Deane Borough Council. In order to influence the location and the type of development taking place we maintain involvement in the planning process. We see it as an integral part of our work to protect and enhance the environment and are involved at all levels of the planning system; however, it must be recognised that our actual controls in respect of development are limited.

In recognition of the need to work closely with local planning authorities, we have signed a Memorandum of Understanding which outlines the general intentions of both the Local Authority Associations and the Agency to build a relationship based upon co-operation, openness and the exchange of information.

In considering responses on development plans and planning applications, we have an underlying duty with respect to sustainable development. We take the view that achieving sustainable development does not mean environmental protection at all costs, but instead, it involves encouraging environmentally compatible economic activity and discouraging or controlling environmentally damaging activity.

We advise planning authorities on development and flood risk matters. The Government expects us to ensure that planning authorities have sufficient information on flood risk matters to enable them to make informed and sound planning decisions. This information may come from us or it may have to be provided by the potential developer.

Close collaboration is required between us and the planning authorities and effective floodplain protection must recognise the conflicts which exist between development and natural uses and seek to reconcile them in a way which is both balanced and sustainable. This requires comprehensive floodplain land-use planning which takes a holistic view. To assist in this we have produced up-to-date and consistent maps of floodplains as part of our survey duties under section 105(2) of the Water Resources Act 1991[7]. Copies of these have been provided to East Devon District Council, Mid Devon District Council and Taunton Deane Borough Council.

The first stage, 'Level A', of the survey has now been completed and this shows the indicative floodplain areas for all the main rivers in the Devon area. Work has now started on the 'Level B' studies which are concentrated in areas of proposed development or sensitive flood risk areas. 'Level B' studies involve a greater amount of hydraulic modelling and investigation and are more closely related to development, therefore closer liaison and consultation with the planning authorities will be required.

Impact on water quality - Inappropriate development can put pressure on existing sewage treatment works by increasing the amount of sewage to such an extent that the discharge either begins to fail its consent or begins to cause environmental harm to rivers or coastal waters. To minimise the impact that increased development can have on the sewerage system and sewage treatment works, we recommend that development is constrained until improvements can be made.

The sewage works at Upottery has a descriptive consent and new development in the area could potentially put pressure on the works. We are monitoring this site to ensure there is no deterioration in water quality.

A problem has been identified with additional development at Ottery St Mary and Tipton St John. Improvements to the sewage works at Ottery St Mary (Fluxton) and Ottery St Mary (Town) are required to enable the sewage works to be able to manage the increased loading (see Issue 1 - Impact of Effluent Discharges).

Inappropriate development does not only put pressure on sewage works, but also on surface water drainage systems. Whilst the sewage works at Honiton has capacity for increased development, surface water drainage is having an impact on water quality in the area, leading to siltation, erosion and spate conditions (see Issue 5 - Soil and Riverbank Erosion).

RQO non-compliance - The River Gissage from source to the Otter confluence marginally failed to meet its RQO of RE1 as a result of elevated BOD occurring on two occasions. The River Gissage flows through Honiton and this failure may be the result of urban runoff. The last failing sample was taken in November 1998 and we do not, therefore, propose to take any action.

Impact of industry on water quality - Discharges from industrial premises have the potential to affect water quality. There are a number of industrial estates in the LEAP area and we have started a programme of risk assessments to identify if there are any current problems and highlight any potential problems where remedial measures are necessary. Industrial estates at Honiton, Ottery St Mary and Colaton Raleigh have been assessed, but three further sites still need risk assessments to be carried out. **Action 2a**.

Contaminated land - On 1 April 2000 new regulations came into force on contaminated land. These regulations require local authorities to draw up inspection strategies to identify areas of contaminated land within their district. The full extent of contaminated land within the Sid and Otter LEAP area is not yet known. Once sites have been identified, it will be necessary to decide what remedial work is required and we will be working with the local authorities on this. Following identification it is possible that some sites will be classified as 'special' sites and this is where we will concentrate our efforts. Actions for contaminated land sites in the LEAP area will be developed once the full extent is known.

Demand for water - (See Issue 6 - Managing Our Water Resources)

Groundwater quality - Most types of development have the potential to impact on the quality of groundwater to a greater or lesser extent. Whether it is through drainage systems, leaking pipes or sewers, poor storage or handling of substances or even the physical act of building, if pollutants are able to enter the groundwater it is usually difficult or impossible to completely remedy the effects. The Groundwater Regulations 1998 give us strong new powers to make sure that existing risks are minimised, but it is important that the planning process is properly used to avoid developments in unsuitable or vulnerable locations.

Concerns were raised about the siting of the new sewage treatment works for Sidmouth. These concerns related to the proximity of the works to the nearby boreholes. In response to these concerns, South West Water agreed to surrender the abstraction licence for their abandoned borehole at Sidford, which will be capped and sealed. This abstraction has not been used by SWWL for many years, as the aquifer is not ideal for the support of large abstractions. The only other borehole in the vicinity is used by Victoria Laundry and we are satisfied that there is no significant risk to this supply from the new treatment works.

Flood Defence - Flooding can happen very quickly, often with little warning. Whilst the risk of flooding can be reduced by defences, floods are part of a natural process and can never be eliminated entirely. We make every effort to issue warnings to people who are at risk from flooding by rivers and the sea, but it is also the responsibility of property owners to take any action necessary to protect themselves and their property. Any person or organisation who wants to receive direct flood warnings should contact us. Leaflets are available which give information on the current service provided and information on flood warnings in force at any time is available via FLOODLINE 0845 9 88 11 88.

A scheme for Otterton is in the capital programme to be carried out during 2004/2005. However, owing to the additional costs to our flood defence work following the Easter flood event in 1998, it is anticipated that the situation will be reviewed and implementation of the scheme may be put back. **Action 2b**.

Concerns have been raised about the increase in flooding incidents in the town of Ottery St Mary. Whilst there is a system in place for alerting residents when river levels rise on the main River Otter, there is no similar formal flood warning scheme in place for properties affected by flooding from non-main river sources. We are looking at ways of alerting residents to flooding from other sources in response to the recent problems in the town, and advice has been given to residents on measures they can take to protect their properties against flooding. There is also an alert system based on rainfall whereby a number of local residents will be contacted at the appropriate trigger point for the alert which will give an opportunity for those at risk to take action. However, it may not be possible to warn for flooding from surface water runoff which is one of the causes of flooding in Ottery St Mary.

We carried out a pre-feasibility study to look at the problem of flooding from non-main river sources at Ottery St Mary. As a consequence an additional flood defence scheme for the town has been proposed and put into the medium-term plan for 2003/04. We are actively seeking partners to enable this scheme to be carried out. Some enhancements to the existing River Otter flood defences have been completed which will ensure that in future water will be allowed to return to the River Otter and not flood the industrial area at the lower end of the town. In the meantime, we are also investigating carrying out improvements to the overflow weir on the leat. **Action 2c**.

Devon County Council have carried out major maintenance works to the culvert to repair the damage caused by the flooding, which involved the reinstatement of the floor of the culvert over a significant part of its length and the rebuilding of the arch where the water pressure caused it to deform. A screen has also been built over the culvert entrance to prevent debris entering and causing problems, jointly funded by Devon County Council and East Devon District Council. An extensive maintenance and cleaning program has also been undertaken by Devon County Council to help alleviate the problem.

East Devon District Council have undertaken a preliminary investigation into runoff from East Hill to assess whether this has any impact on flooding in the town (see Issue 5 - Soil and Riverbank Erosion). Initial results recommend a further detailed study to follow which is currently being undertaken. **Action 2d**.

Blackhill Quarry - Bardon Aggregates have quarried within the Budleigh Salterton Pebblebeds at Blackhill Quarry for a number of years. They have an existing planning permission for the extension of the quarry; however, the area falls within the boundary of the East Devon Pebblebed Heaths cSAC, SPA and SSSI. Following discussions between Bardon Aggregates, English Nature and Devon County Council, Bardon Aggregates are investigating the potential of quarrying an area at Thorn Tree Plantation on Woodbury Common. This lies outside the East Devon Pebblebed Heaths cSAC/SPA. A new planning application has been submitted and work is currently underway to determine the likely impacts from this new application. We know that there are important mire communities nearby and investigations are underway to assess the likely impacts to the adjacent streams and associated mire communities. We are closely monitoring the scope of these investigations and making appropriate recommendations as these studies continue. We have identified particular areas of concern such as impacts to hydrogeology, conservation and fisheries, though we propose no actions on this issue at the moment.

Archaeology & Heritage - We have a duty to consider the impact of all our regulatory, operational and advisory activities to others upon the archaeology and heritage of the LEAP area and implement mitigation and enhancement measures where appropriate.

The LEAP area contains many sites and features of historic and archaeological interest which require continued protection if they are to survive. Many riverine, foreshore and coastal sites and features are at risk from new development, changes in land use or natural processes. There is an absence of easily accessible, general information on the archaeological and historic content of the LEAP area. Such features may be affected by our activities when carrying out works such as the construction of flood defence schemes. A need has been identified for a simple assessment of the overall value of the LEAP area. This may best be achieved by collaboration between all interested parties. We also need to improve our methods of safeguarding the archaeological and historic environment during authorisation of actions by others and we will use both internal and external expertise to do so. **Action 2e**.

Table 2 Impact of development

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Conduct risk assessment at industrial sites at Talewater and Sidmouth and carry out remediation if necessary.	Agency	unknown	●	●	●	●	
b	Carry out flood defence work at Otterton.	Agency	50k			●	●	
c	Carry out additional flood defence work at Ottery St Mary including enhancements to the existing Flood Alleviation Scheme at the Land of Canaan Car Park.	Agency	unknown		●	●	●	●
d	Assess results following investigation into the runoff from East Hill.	EDDC, DCC, OSMTC, *Agency*	N/A	●				
e	Support assessment of archaeological and historic value of LEAP area.	DCC, DAS, Agency, NT, EH, EDDC, *Others*	unknown	●	●	●	●	●

Issue 3: Waste Management Activities

The National Waste Strategy sets out the Government's policy framework for the management of waste. It identifies ways in which waste can be managed in a more sustainable way, and sets out targets for achieving that aim. The strategy sets out the following hierarchy of options for the management of waste:

- reduce
- re-use
- recover and dispose

In the past the disposal of waste to landfill has been an attractive option because it is initially inexpensive and suitable for many types of waste. However, landfill sites have the potential to cause pollution, particularly older sites which have had fewer pollution measures built into their original design. Stricter controls on landfill operations and the introduction of the Landfill Tax have begun to shift the balance in favour of alternative means of waste management.

Uncontrolled and illegal tipping of waste, known as fly-tipping, can pose hazards to wildlife, attract vermin and can cause pollution as well as blighting the appearance of an area. We have a Memorandum of Understanding with the Local Government Association for determining which organisation should respond to fly-tipping incidents. Where appropriate we will investigate cases and pursue enforcement action against offenders.

Waste reduction - We are keen to promote the reduction of waste at source. A project has been run in East Devon, as part of an initiative covering the whole of Devon, with the aim of encouraging local companies to minimise their waste generation. This initiative was part of a scheme driven by the PAYBACK business environment association, in partnership with the Environment Agency, Devon County Council and local authorities. The project is due to be repeated in East Devon during the year 2001. **Action 3a.**

The Producer Responsibility Obligations (Packaging Waste) Regulations 1997 came into force in March 1997, and were amended in 1999, increasing the number of businesses obligated under the legislation. These require certain companies who handle packaging to ensure that a set proportion is recovered and recycled. Producer responsibility is likely to be applied to other waste streams in the future.

Remediation of closed landfill sites - Devon County Council's policy committee recently agreed to allocate £12 million over the next ten years for the remediation of a number of closed domestic waste landfill sites over the next ten years. Successful bids for Supplementary Credit Approval have also been used to fund investigations and remediation schemes.

A treatment system for leachate entering the stream has been installed at the former Knapps Copse landfill site, which consists of a limestone filter and reed bed. The biological quality of water downstream has improved since the treatment system was installed. A review of all monitoring data provided by Devon County Council and from monitoring carried out by ourselves will be made to assess the effectiveness of the treatment system. **Action 3b.**

Disposal of waste oil - Oil accounts for one quarter of all pollution incidents in the UK each year. If it is disposed of incorrectly it will cause pollution by: forming a film on the surface of water drastically reducing the level of oxygen in the water, coating plants and animals that come into contact with it, causing serious problems at sewage treatment works rendering them inoperable, and making drinking water supplies unfit for use. There are concerns about a lack of oil recycling facilities within the LEAP area which can be used by the general public. Provision of civic amenity sites is a responsibility of the District Council. We encourage the provision of disposal facilities where appropriate and work with businesses and oil users to promote safe storage and handling practices. We also work with oil suppliers to distribute information on good practice to their customers. **Action 3c.**

Table 3 Waste management

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Pursue Waste Minimisation Schemes in East Devon with the support of PAYBACK.	Agency, PAYBACK	<1k	●	●			
b	Review monitoring information from Knapps Copse closed landfill site to assess effectiveness of the treatment system.	Agency	<1k	●	●			
c	Encourage the provision of waste oil disposal facilities by the Local Authorities, where appropriate.	Agency, *EDDC, MDDC, TDBC*	<1k	●	●	●	●	●

Issue 4: Impact of Farming

Farming is the major land use in the LEAP area with nearly 70% of the farmed land put to grass. Due to the rural nature of the area this is likely to remain so. The LEAP area has a higher than average percentage of the best quality land with 19.3% of Grades 1 & 2 and 60.2% Grade 3. Whilst the overall number of agricultural holdings in the LEAP area has increased, there has been a decline in the number of larger holdings.

Table C - Agricultural Land Use in the LEAP area

	Area (ha)	%
Total Grassland	14,809	66.9
Rough Grazing	625	2.8
Crops & Fallow	5,296	23.9
Farm Woodland	693	3.1
Other Land	466	2.1
Set-a-side	232	1

(Figures provided are for 1997[a])

Table D - Livestock Numbers

	1987	1997
Total Cattle & Calves	34,726	31,446
Total Sheep & Lambs	35,868	35,031
Total Pigs	38,083	34,534
Total Fowls	196,414	211,408*

*(*Figures provided are for 1996[a])*

Over the last ten years we have visited all the farms in the Otter valley providing advice on good practice and pollution prevention and farmers have made great improvements in farm waste storage facilities and disposal methods. This has resulted in a significant reduction in the number of point source pollution incidents attributable to farms, but further work is still required to solve the problem of diffuse pollution, such as from fertiliser added to the land or from land spreading of waste.

The Sid and Otter LEAP area has not been subject to intense afforestation. The main areas of plantation are on the ridges running down to Sidmouth and above Ottery St Mary, north of Budleigh Salterton towards Woodbury Common, and on the Blackdown Hills.

RQO non-compliance - Two stretches of the River Otter from Hoemore Farm to Clapperlane Bridge significantly failed to meet their long term RQOs of RE1 as a result of elevated BOD. The River Love from source to Otter confluence also significantly failed to meet its long term RQO of RE1 as a result of elevated BOD.

Following investigations in 1997, 1998 and 1999 we proposed that further work was undertaken in 2000 to identify the causes of poor water quality. However, resolving problems at non-compliant EC Bathing Waters was our top priority for 2000, and all our investigative efforts have been focussed on these sites. This means that the proposed investigations on the River Otter have now been programmed for 2001. **Action 4a**.

The monitoring site at Clapperlane Bridge is not considered to be representative of the whole stretch as cattle can access the watercourse immediately upstream. We requested that this site be relocated, but this request was denied and therefore we expect failures to continue at this location.

A stretch of the River Otter from Dotton Mill to the Normal Tidal Limit also marginally failed to meet its RQO of RE2 as a result of elevated BOD. The last failing sample was taken in May 1998 and therefore we do not propose to take any action.

Pesticides - The acreage of maize grown in the LEAP area, largely as feed for dairy cattle, has increased in the last ten years. The growing of maize can give rise to problems associated with the use of herbicides.

Atrazine, which is used for controlling weeds in maize fields, is a persistent herbicide and low concentrations have been detected in the groundwater of some boreholes which are used for public water supplies. In the spring of 1999 elevated levels of Atrazine were detected in SWWL's abstraction borehole at Dotton. Prior to this there had been a general downward trend in concentrations. Due to the hydrogeology in the area, these elevated levels may be due to pesticides used some years ago. We have visited over fifty farms providing advice on the use of pesticides, which has resulted in lower concentrations of Atrazine being used, and will continue to review the levels of Atrazine and encourage farmers to use alternative methods of weed control where possible. Atrazine has been banned for concentrated use as a weedkiller, e.g. besides roads and railways.

We are part-funding an on-going study by Exeter University into the influence of Atrazine on groundwater in the Otter Valley. Actions will be proposed once the outcome of the study is known.

Groundwater Regulations - The Groundwater Regulations complete the implementation of the EC Groundwater Directive[9]. The Regulations help prevent pollution of groundwater by controlling the discharge of certain dangerous substances. From 1 January 1999 anyone who disposes of listed substances onto or into land must apply for an authorisation. Where disposal is acceptable, the activity will be authorised subject to appropriate conditions. If the risk to groundwater is too great, the application will be refused. An authorisation is not required where the activity is already covered by a waste management licence, discharge consent or IPC authorisation.

The substances controlled by the Regulations fall into two lists. List 1 substances are the most toxic and must be prevented from entering groundwater. They include sheep-dip, pesticides, solvents, hydrocarbons, mercury, cadmium and cyanide. List 2 substances are less dangerous, but could be harmful to groundwater if disposed of in large amounts. Entry of these substances into groundwater must be restricted to prevent pollution. List 2 substances include some heavy metals, ammonia and phosphorus.

High nitrate concentrations in surface and groundwater - A major source of nitrate pollution can be from agricultural activity and the EC Nitrates Directive[10] requires member states to identify ground or surface waters that are or could be affected in this way. If waters are clearly demonstrated to be affected, and agriculture is making a significant contribution, the land draining to these polluted waters must be designated a Nitrate Vulnerable Zone (NVZ).

The Action Programme for Nitrate Vulnerable Zones (England and Wales) Regulations 1998 set rules which must be followed by farmers in certain areas where agricultural nitrate pollution is a problem. To date, 68 NVZs have been designated in England and Wales. NVZs are subject to four-yearly reviews, the next of which is due in 2001. In the Sid and Otter LEAP area there are no NVZs currently identified as a result of high nitrate levels in surface water, but there is one large NVZ in the area around Colaton Raleigh due to high nitrate levels in the groundwater. Monitoring of farms within NVZ areas is carried out as part of our routine work and we do not propose a specific action for this issue.

Siltation - (See Issue 5 - Soil and Riverbank Erosion)

ESA/Countryside Stewardship schemes - The Blackdown Hills in the north of the LEAP area have been designated an Environmentally Sensitive Area (ESA) under a scheme run by MAFF. This scheme has been designed to maintain and enhance the landscape, wildlife and historic value of the area by encouraging beneficial farming practices across entire farmholdings with the emphasis on biodiversity. Farmers who opt to join the scheme receive a payment in return for less intensive farming.

In conjunction with other conservation bodies we have been in discussion with MAFF, through the Farming and Rural Conservation Agency (FRCA), to ensure that, wherever possible, our interests are reflected within scheme guidelines and that incentives are included to protect these interests. This is an on-going process and we are represented on the Liaison Group for the scheme along with other conservation bodies. The scheme was recently subject to a five-year policy review (1999 - 2004) on which we were consulted. **Action 4b**.

In addition to the ESA scheme, the Countryside Stewardship scheme (also operated by MAFF) makes payments to farmers and land managers to improve the natural beauty and diversity of the countryside. The scheme has identified particular target areas in Devon. In this LEAP area, land within the East Devon AONB has been targeted and may be eligible for funding where management involves the conservation of riverside and wetland sites, old meadows and pastures, coastal grassland, field boundaries and lowland heath. **Action 4c**.

Table 4 Impact of farming

	Actions	Action By Lead/ *Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Investigate cause of poor water quality in the River Otter from Hoemore Farm to Clapperlane and in the River Love.	Agency	unknown		●			
b	Continue to influence ESA scheme objectives through attendance at the Liaison Group meetings and ensure our interests are protected.	MAFF/FRCA, Blackdown Hills Project, EN, Agency	<1k	●	●	●	●	●
c	Encourage uptake of Countryside Stewardship scheme by eligible landowners.	MAFF/FRCA, *Agency*	<1k	●	●	●	●	●

Issue 5: Soil and Riverbank Erosion

Soil erosion in the LEAP area is an increasing problem, particularly on the sandy soils in the lower Otter Valley, and this problem has been made worse in recent years by heavy rainfall. Excessive runoff from fields can lead to local flooding and the blocking of roadside drains and it leaves mud on the roads which can be a hazard to traffic. It can also lead to deposition of sediments in nearby streams which in turn results in siltation of salmonid spawning areas. Siltation is known to limit severely the survival of salmonid eggs in the spawning grounds. To combat the effects of siltation, gravel rehabilitation works have been carried out at various locations in the LEAP area, and to reduce silt inputs, bankside fencing schemes are being encouraged to prevent cattle access to the river and allow bankside vegetation to become established. The quality of watercourses can also be affected through excess inputs of nitrogen, phosphorus and pesticides associated with soil particles and runoff.

Erosion can be a particular problem when the soil is compacted or the surface capped so that the risk of runoff is increased. Fine, flat seedbeds for arable crops can exacerbate the problem when the soil particles seal the soil surface following rainfall. This is a widespread problem on the sandy loam soils especially those which are low in organic matter. Other soils vulnerable to soil erosion and runoff are those over clayey subsoils in the LEAP area because these are often wet in autumn and spring and therefore vulnerable to compaction if worked when wet, for example during late harvesting of maize. **Action 5a**.

In some areas of the LEAP area outdoor pigs are known to cause soil erosion and the pollution of nearby streams. We have been carrying out work with a farmer near Yettington who has developed a system to reduce erosion by keeping his outdoor pigs on grass. We will monitor this system and encourage its use on other farms should it prove effective.

Riverbank erosion is also a problem in many parts of the LEAP area, often exacerbated by trampling and over-grazing by livestock, ploughing close to the riverbank, and falling trees succumbing to strong winds, flood events or alder root disease (*Phytophthora*) (See Issue 7 - Enhancing Biodiversity and Earth Sciences). There has also been a decline in general riverbank management in recent years . Bankside trees, which in the past would have been managed by coppicing or pollarding, have developed full crowns and have become destabilised through heavy winds and flood events. Once they have fallen into the river they can expose riverbanks to erosion by water or livestock poaching. This is particularly noticeable downstream of Newton Poppleford, where a popular public footpath has been interrupted by erosion of the riverbank. An important action in preventing tree loss is to identify vulnerable trees before they fall and take early remedial action. **Action 5b**.

A collaborative project initiated by the East Devon Coast & Countryside Service, Clinton Devon Estates and ourselves used a combination of faggots (hazel bundles) and spiling (willow stakes interwoven with brashings) to protect these eroding banks. The system requires periodic maintenance, but this can provide further material for use on other projects. It has performed well and provided robust bank protection with wildlife benefits.

We encourage the sympathetic management of riverbanks through coppicing, bankside fencing, installation of cattle drinking areas, planting of trees in appropriate locations and the creation of buffer zones (uncultivated strips of land between farmland and riverbanks). Unfortunately, to date there has been little progress on bankside fencing schemes due to lack of funding and a general unwillingness of landowners and tenant farmers to fence off land adjacent to rivers. It should be noted that bankside fencing should be located in areas where it is not going to increase the risk of flooding due to build-up of debris. **Action 5c & 5d**.

Table 5 Soil and riverbank erosion

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Develop a partnership project in the Otter Valley to raise awareness about the problems of soil erosion, and to promote good agricultural practice.	Agency *MAFF/FRCA, Others*	unknown	●	●	●		
b	Encourage riparian owners to undertake management of bankside trees and provide suitable conditions for development of more extensive marginal vegetation.	Agency	unknown	●	●	●	●	●
c	Where appropriate, promote bankside fencing schemes to limit bank erosion and reduce sediment input to the river.	Agency, Landowners, Farmers, *MAFF*	unknown	●	●	●	●	●
d	Promote formal stock watering points and buffer zones and encourage the planting of appropriate bankside trees.	Farmers, River Otter Association, Agency	<1k	●	●	●	●	●

Issue 6: Managing our Water Resources

Water is an essential but finite resource. One of our roles is to protect the water environment (rivers, lakes and wetlands) from over-abstraction whilst considering the needs of the public, agriculture and industry, for water. We therefore manage water resources to achieve the right balance between the needs of the environment and those of the abstractor. We are guided in this by EU and UK legislation.

Consumptive abstractions use most of the abstracted water with little returned to the original point of abstraction. Examples are public water supply, industrial processing or evaporative cooling. Non-consumptive abstractions use only a fraction of the quantity of water abstracted and return the remainder to the vicinity of the abstraction point. Examples of non-consumptive abstractions are fish farms, hydroelectric power schemes and amenity features such as ornamental lakes.

Managing Current Demand - Water resources management and maintaining reliable public water supplies within the LEAP area and beyond are subject to national legislation and regulation. Primarily this is achieved through the system of abstraction and impoundment licences, determined and administered by the Agency. Abstraction licences authorise removal of specific volumes of water over stated timescales, from specified sites for specific purposes. Additional conditions may be included to further constrain or control the operation of the licence to ensure that environmental impacts are minimised or negated.

This system of licensing is common to England and Wales and was reviewed during 1997/98 and a number of changes were proposed. 'Taking Water Responsibly', a paper detailing the Government decisions following consultation, was published in March 1999. The changes proposed will fundamentally affect the way in which the Agency will control the abstraction, transfer and impoundment of water in England and Wales in future. This in turn will alter the way in which abstractors and other interested parties are involved in the control and management of water resources. During the implementation of the proposals we will want to reassess the changes with abstractors and interested groups or individuals. In particular, we will discuss how we will implement the changes and how the changes might affect existing operations.

Initially we are concentrating on the following areas which do not require primary legislation changes:

- Catchment Abstraction Management Strategies (CAMS)
- Time limiting of licences
- Restoring sustainable abstractions by dealing with damaging abstractions.
- Review of licence administration procedures

Further information on these matters is provided in the leaflet 'Changes to the water abstraction licensing system' which is also available from our customer contact staff in our Devon Area Office.

Public Water Supply - Planning and management of public supplies is based on areas known as water resources zones. These zones have an integrated network of pipes and sources and can extend over large areas, often encompassing several catchments, LEAP areas and administrative areas. As a result, it is often difficult to provide data relating to public water supply which is specific to a particular LEAP. Only a very small part of the Sid and Otter LEAP, near the northern boundary, falls within the area supplied by Wessex Water (North Resource Zone), with most of the area falling within South West Water Ltd's Wimbleball Resource Zone. This zone also includes the catchment of the River Exe downstream of Wimbleball Reservoir.

Meeting Future Demand - Expenditure on water company infrastructure serving the LEAP area is dependent upon the periodic review of prices which was published by OFWAT at the end of November 1999 and covers the period 2000-05 (also see Issue 1 - Impact of Effluent Discharges).

As part of their submissions to OFWAT, water companies were required to revise their demand forecasts, review their resource availability and consider potential options to meet any deficits within the planning horizon to 2010. In parallel with this, we required water companies to submit water resources plans for the period to 2025. These were received by us in March 1999. We considered the plan submitted by South West Water to be acceptable. All companies are now to review and update the plans annually.

Before any new resources can be developed or existing resources developed further, we must be satisfied that water companies have looked in detail at a range of appropriate options. These include encouraging people to use water more efficiently (demand management), increasing the efficiency of uses of sources (resource management) and increasing efficiency of pipe networks (distribution management), as well as reducing their leakage towards an acceptable level. Each year, OFWAT set leakage targets for each water company which they are bound to meet, although they can set lower targets if they wish. The water companies also have a duty to promote efficient use of water and are required by OFWAT to publish water efficiency plans.

Metering supplies and appropriate tariff structures provide a mechanism to encourage the efficient use of water. All water companies in England and Wales are now obliged to install a meter free of charge to any domestic customer that requests one.

Non-public water supply abstractions and demand - It is possible that there may be local environmental problems associated with full future uptake of private abstractions in the LEAP area. We will continue to monitor the net use of licensed water abstractions and its effects. Future abstraction needs are assessed through abstraction licensing procedures. These take into account the justified need for water and in future will need to include the demonstrated extent of the provision of water-efficiency measures within the proposals.

The Agency is now developing new national and regional water resources strategies to cover both public and non-public water demands with a planning horizon of 2025. Consultation for this closed at the end of January 2000. Publication of the national strategy is scheduled for December 2000 with the regional strategy to follow in January 2001. **Action 6a**.

European law affects water resources licensing. For example, a review of the impact of particular abstraction licences in the East Devon Pebblebeds Heath SSSI has been undertaken by us as required under the National Habitats Directive Regulations, 1994[11] (see Issue 7 - Enhancing Biodiversity and Earth Sciences). This has revealed negligible concerns regarding the impacts of existing licences in the vicinity.

In 1998 we completed a major study of the environmental impact of the public water supply abstractions on river flow in the Otter catchment. The Otter Low Flow Study report was issued to the Sid and Otter LEAP Steering Group in January 1999. The study concluded that the current level of public water supply abstraction has not caused significant damage to the fisheries and the macro-invertebrates in the river, and does not significantly influence the water quality. In addition to this, if abstraction occurred at the full licensed rate the river's quality would not be significantly affected, but some uncertainty remains about the likely impact of the cumulative groundwater abstractions on fisheries and macro-invertebrates.

To meet the requirements of the low flow study follow-up, we revised our *Groundwater Management Strategy for the Otter Valley Triassic Aquifer* to reflect the outcomes of this study. Changes included an increase in the scale of resources allocated for meeting environmental water needs and a consequential increase in the scale of restriction on future licensing of resources for consumptive use. In addition, we took into account both the revised Groundwater Management Strategy and Otter Low Flow Study outcomes when determining various applications to renew licences that were subject to an expiry date in January 2000. In the case of the public water supply licences relating to South West Water Ltd's Otterton boreholes, we were able to negotiate real reductions in the overall resources licensed for public water supply in the LEAP area. This included revocation of the public water supply licence for the company's East Budleigh source. The company also agreed - in association with the Otterton determination - to accept time limits on certain licences that were previously permanent ones. These provide real sustainability benefits for the LEAP area. These gains together with the revised Groundwater Management Strategy which severely restricts further consumptive licensing of the area's groundwater resources are deemed to meet the requirements and the CAMS process will automatically review the situation again in six years or so. **Action 6b**.

Catchment Abstraction Management Strategies (CAMS) - This major national initiative will provide the opportunity, at a local catchment level, for groups and individuals to contribute to the development of the strategy for water resources management to be adopted for the catchment. CAMS will provide information on:

- the availability of water in a catchment
- licensing practice in dealing with new applications
- changes needed to the abstraction regime in the catchment to achieve the sustainable long-term use of water resources
- a transparent basis for planning by abstractors, the Agency and all other interested parties
- It will also be the vehicle for reviewing existing time limited licences

Our proposals for the production of CAMS went to national public consultation from April to 31 July 2000 using the document 'Managing Water Abstraction: Towards a Shared Strategy'. After consideration of all the comments from this exercise, we will publish a National Support Document in April 2001, and then start work on the first Catchment Abstraction Management Strategy. In Devon Area we hope to publish our first Area CAMS in April 2002. These will be published one at a time on a six-year rolling cycle. The Sid & Otter LEAP area will be amongst the first CAMS to be produced and the outcomes of the Otter Valley Low Flow Study will be considered when drafting strategy. **Action 6c.**

Table 6 Managing our water resources

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Revise Regional Water Resources Development Strategy.	Agency	unknown	●				
b	Complete Stage II of the Habitats Review on East Devon Pebblebed Heath, (Priority SAC and SPA site), assessing which, if any, licences are having a significant effect on the site.	Agency	3k	●				
c	Implement CAMS for the LEAP area.	Agency	unknown		●	●		

NB: The member of the Steering Group representing the River Otter Association is unable to support the conclusions from the River Otter Low Flow Study.

Issue 7: Enhancing 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 Earth Summit in 1992, where the Biodiversity Convention was signed by 150 world leaders. Since then Biodiversity Action Plans have been produced in the UK to protect and enhance biodiversity, initially at a national level and subsequently at regional and local levels, with increasing levels of detail. These plans focus on the nation's threatened and declining species and habitats, and include information on status, causes of decline, objectives, targets and costed actions. We have worked to incorporate targets from these plans into our LEAP documents.

We have taken responsibility, as lead organisation, for 34 species and 5 habitats of wetland character. Of these, two species are known to be present within the LEAP area, namely the otter and the southern damselfly. Evidence suggests that two other species may occur within the LEAP area; the water vole and the white-clawed crayfish. In addition, other species listed within the national Action Plan require specific actions by us as a responsible body and some occur within this LEAP area. These include the great crested newt, marsh fritillary and two species of pipistrelle bat.

We will ensure that actions are delivered either through existing operational programmes, policy framework or through the development of new policies, procedures or R&D projects. We also play an important part in controlling and undertaking work likely to affect a range of habitats and species at a local level and will use our influence to protect and enhance biodiversity.

Biodiversity can also be protected through the designation of sites. Wetlands of international importance are protected under the Convention on Wetlands of International Importance and designated as Ramsar sites. Within Europe, the Habitats Directive[12] was devised to protect nature conservation interests throughout the continent through the establishment of a series of sites known as the Natura 2000 network. The sites are designated under either the Habitats Directive as Special Areas of Conservation (SACs) or the European Wild Birds Directive[13] as Special Protection Areas (SPAs). The Habitats Directive is now implemented through the Conservation Regulations 2000, and requires that all Competent Authorities use their powers to ensure that sites are maintained at favourable conservation status.

There are three sites from the Natura 2000 network which lie wholly or partially within the LEAP area; the East Devon Pebblebed Heaths candidate SAC (dry and wet heath) and SPA (breeding birds) and the Sidmouth to West Bay candidate SAC (vegetated sea cliffs). Like all other Competent Authorities, we will exercise our powers to contribute towards the conservation objectives for these sites. We are currently reviewing the existing authorisations and activities which we licence within Devon and this review will enable us to identify activities likely to affect the integrity of any sites protected under the Directive. The East Devon Pebblebed Heaths have been identified as a priority site in this review, with a particular focus on abstractions. In addition, any *new* proposals that may affect Natura 2000 sites will also be subject to an appropriate assessment in accordance with the Directive. This is an ongoing activity (see Issue 6 - Managing Our Water Resources).

Under Article 10 of the Habitats Directive[12] member states are also required to encourage the management of linear features such as watercourses and hedges which often provide a corridor link between important habitats. Government guidance is also given within Policy Planning Guidance for Nature Conservation (PPG 9), which describes how Government policies for the conservation of our natural heritage are to be reflected in land-use planning.

English Nature have identified Lyme Bay as a Sensitive Marine Area (SMA). This is a non-statutory designation drawing attention to the importance of the marine animal and plant communities. It relies upon the co-operation of users and the local community to achieve sustainable management.

The following table lists the key habitats, species and geological features in the LEAP area which are relevant to our activities. A summary of their relevance in the biodiversity planning process is given within Table F in Appendix 4. Many of the actions required from us to protect these will be carried out as part of our routine work (e.g. ensuring that abstractions do not damage wetland sites) and will therefore not be included as distinct actions within the LEAP.

Table E - Key habitats and species within the LEAP area

Key Habitats/*Associated Species*/*Geomorphological Feature*	Reason for Inclusion	Perceived threat in this LEAP area (*Other than habitat loss*)	Assoc. Issue
Wet woodland	Nationally important	Clearance, grazing pressure, inappropriate management	2, 4
Invertebrates	Rich communities		
Lichens	Declining	Air pollution	
Rhôs pasture	Nationally threatened	Lack of/inappropriate management, habitat fragmentation, agricultural improvement/intensification, afforestation, pond creation	4
Marsh fritillary	Threatened in Europe		
Southern damselfly	Internationally threatened		
Curlew	Declining in UK & Europe		
Rivers, streams and fluvial processes		Loss of riparian habitat/ geomorphological features through neglect, inappropriate/lack of management, Alder root disease, invasive alien plants.	2, 4, 5 9
Otter	Threatened in Europe	Road deaths	
Water vole	Nationally threatened	Nationally threatened	
Sand martin	Declining in UK & Europe	Bank protection work, excessive erosion	
Kingfisher	Declining in UK & Europe		
Atlantic salmon	Internationally threatened	Climate change/possible international exploitation	
River, brook and sea lamprey	Internationally threatened	Threat not fully understood	
White-clawed crayfish	Threatened in Europe	Pollution incidents, crayfish plague, lack of information on distribution	
Exposed riverine sediments (ERS) and other River channel features	Wildlife/Geomorphological value	Inappropriate in-river works, lack of understanding of importance	
Standing open water	Nationally threatened	Loss through neglect or infilling, loss of conservation value through fish/waterfowl stocking, invasive alien plants	2, 3, 9
Lowland heath	Nationally threatened	Neglect, afforestation	4
Nightjar	Severe decline in UK & Europe		
Dartford warbler	Rare UK species		
Curlew	Declining in UK & Europe		
Skylark	Declining in UK & Europe		
Southern damselfly	Nationally threatened		
Coastal and floodplain Grazing marsh	Nationally threatened	Agricultural intensification, nutrient enrichment of ditches, unsympathetic water level management	2, 4, 8
Curlew	Declining in UK & Europe		
Lapwing	Declining in the UK		
Barn owl	Declining in the UK		
Reedbed	Nationally rare	Lack of management	2, 4
Estuary and associated habitats	Internationally threatened	Nutrient enrichment, climate change/sea level rise, siltation	4, 5
Rocky foreshore	Vulnerable habitat	Recreational pressure, pollution by oil and other contaminants	8
Peacock's tail (Padina pavonia)	Nationally scarce		
Red seaweed (Lophosiphonia reptabunda)	Sub-tropical species occurring at only two sites within UK		
Sea cliffs	International scientific & educational importance	Recreational pressure, lack of awareness of geological importance	5, 8

In addition to the internationally protected sites within the LEAP area, there are sites of national conservation importance which are protected under the Wildlife & Countryside Act 1981, being designated as National Nature Reserves or Sites of Special Scientific Interest (SSSI). The coastline of the LEAP area is considered of particular wildlife and geological/geomorphological importance and boasts three SSSIs. Sites of County importance are designated as either County or Local Wildlife sites and may also be designated as Local Nature Reserves (where various degrees of management are undertaken). Whilst these sites are afforded no statutory protection, local authorities generally recognise their importance, which will be reflected in appropriate policies within their Local Plan conferring various degrees of protection. We have supported the development of inventories for these sites within other Districts in Devon and we will, where possible, continue to support the updating of the East Devon inventory through work such as resurveying. **Action 7a.**

Table 7 Action for county wildlife sites

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Support the updating of wildlife inventories.	DWT, LPAs, DCC, EN, Agency	unknown	●	●	●	●	●

Wet woodland - This habitat, dominated by willow and alder, occurs on land with poor or impeded drainage, areas which are often difficult to farm. The combination of a wet local climate and heavy soils has ensured that wet woodlands are a characteristic feature in the Devon landscape. Found commonly around springs or meandering watercourses, wet woodland is most abundant within the upper reaches of the River Otter on the Blackdown Hills. A diverse ground flora is often associated with this habitat as well as a rich community of lichens, mosses and invertebrates (particularly *Diptera* - flies). The full extent of wet woodland in this area is currently unknown, although a decline in extent is believed to have arisen through agricultural improvement and an increase in pasture, and neglect. Although most commercial forestry has little or no wetland interest, it is worth noting that there is some commercial forestry within the LEAP area, mainly concentrated along the East Hill Strips. In order to establish standards for sustainable management and best practice, the Forestry Commission has developed the UK Forestry Standards[14]. All forestry activities should be undertaken in accordance with these guidelines. **Actions 8a, 8b & 8c**.

For alder root disease see Rivers, streams and fluvial processes below.

Target: Determine extent of resource by 2001, recreate 5 ha of wet woodland by 2005

Table 8 Actions for wet woodland

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from the Devon BAP for wet woodland by assisting with assessment of extent of resource, seeking potential new sites and promoting use as buffer strips.	EN, DWT, *Agency, MAFF/FRCA, FWAG, NFU, CLA*	<1k p.a.	●	●	●	●	●
b	Identify areas of river valleys where tree planting can be encouraged without adversely affecting flood risks.	Blackdown Hills Project, *Agency*	unknown	●				
c	Create new areas of wet woodland through planting and appropriate management.	Blackdown Hills Project, *Agency*	unknown		●	●	●	●

Rhôs pasture - Rhôs pasture (also known as Culm Grasslands in north and west Devon) is an internationally important species-rich wet grassland. It comprises a mixture of marshy grassland, bog, wet heath and scrubby woodland found on the spring lines of the Blackdown Hills. The damp climate and heavy soils of Devon provide the right conditions for the development of this community and the county contains 80% of this resource in England, although most occurs within the north and west of the county. The true extent of the habitat is difficult to assess as it often occurs within a complex mosaic of wet habitats.

Rhôs pasture is of particular importance to the marsh fritillary butterfly in providing its preferred larval food plant devil's-bit scabious. This species of butterfly is threatened in Europe and the UK is a major stronghold, with Devon holding 20% of the UK population. In addition, Hense Moor (see below) once supported populations of the nationally endangered southern damselfly. Opportunities exist for reintroducing the species in conjunction with favourable management of these sites. Agricultural improvement and lack of appropriate management has caused a decline in the extent of Rhôs pasture and many of the vulnerable associated species, such as curlew and barn owl. (Also see Rivers, streams and fluvial processes below). **Action 9a, 9b & 9c**.

The most extensive area of Rhôs pasture within the LEAP area occurs at Hense Moor, particularly along the spring-line mires. This site comprises some of the best remaining examples of lowland mixed valley bog in Devon and is considered of national importance being designated a SSSI. The wide range of habitats found within the site include moss dominated springs, wet and dry heath, rush dominated marshy grassland with scrub and wet woodland. Having identified the site as a priority for restoration, we are currently collaborating with the Blackdown Hills Project, English Nature, Devon Wildlife Trust, RSPB and the Luppitt Commons Trustee Committee to restore and maintain the site to a more open nature with a mosaic of grassland, bog, heath and scrub. In addition, sites in other LEAP areas have also been identified as part of this restoration project. **Action 9d**.

Target: Ensure no further loss of resource, restore 20 ha of habitat by 2005, maintain existing marsh fritillary populations. Enter 80% of total area resource into protective management schemes by 2005. Restore breeding populations of southern damselfly to Hense Moor.

Table 9 Actions for Rhôs pasture

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from the Devon BAP for Rhôs pasture by encouraging sympathetic management and/or restoration of sites. Also discourage inappropriate creation of lakes/ponds within Rhôs pasture.	DWT, EN, Agency, Blackdown Hills Project	<3k p.a.	●	●	●	●	
b	Promote and implement actions from the Devon BAP for curlew, southern damselfly & marsh fritillary by promoting sympathetic management and restoration of breeding sites.	DWT, Blackdown Hills Project, EN, BC, *Agency, MAFF/FRCA*	1k p.a.	●	●	●	●	
c	Promote and implement actions from the Devon BAP for barn owl by promoting appropriate management of riparian feeding habitats and providing nest boxes to encourage recolonisation	Agency, BOT, Hawk & Owl Trust, landowners	1k p.a.	●	●	●	●	
d	Support measures from the National Fen, Carr, Marsh, Swamp & Reedbed Habitat Statement, and enter 80% of spring-line mire resource into protective management by 2005.	EN, Blackdown Hills Project, *Agency*	3k p.a.	●	●	●	●	

Rivers, streams and fluvial processes - The Rivers Sid and Otter are typical of rivers in East Devon and notably different from the spatey fast-flowing rivers in the west of the county. Of particular interest are reaches with extensive meandering along much of the Otter. Associated with these features are varied in-stream habitats including eroding bank faces and Exposed Riverine Sediments (ERS). It has recently been recognised that these exposed areas of sand and gravel ('shoals'), deposited by the river, are particularly valuable as habitats for invertebrates (especially beetles). However, the existence of these sediments are vulnerable to erosion control works and some flood defence activities. A survey has been undertaken of the invertebrates, particularly beetles, found in exposed riverine sediments on a number of rivers in Devon and Cornwall. Results from this survey show that ERS studied on the River Otter had a high diversity of associated species with many specialised species found only within this type of habitat. Their conservation status ranks high in the context of the county. We are continuing to undertake research and development to improve our understanding and develop appropriate policy to protect these features (see Issue 5 - Soil and Riverbank Erosion). **Actions 10b & 10g**.

Immediately south of Ottery St Mary, there are large areas of floodplain meadow along the western banks of the River Otter where the pasture has been agriculturally improved. Further south, towards Newton Poppleford and Colaton Raleigh, the floodplain continues although much of the land is given to arable production and its wildlife value is restricted to areas of set-aside, headlands and hedges. Wherever possible we will continue to ensure that natural floodplain development is permitted to continue in an unrestricted manner. We will also investigate opportunities for the restoration of floodplain and floodplain woodland and devise appropriate targets. **Action 10a**.

Otters have partially recovered from the major decline of the 1960s and 1970s. Mortality from road traffic is a significant factor in preventing spread, however, to date we have no records of road casualties within the LEAP area. It is nevertheless important that we continue to monitor the situation as road kills represent one of the greatest potential threats to an eastward expansion of otters from the west of the county. In addition to identifying road death blackspots, we collect otter road casualties to undertake post-mortems on retrieved corpses. This helps us to gain an understanding of the general health of the population, particularly with regard to the build-up of pesticides and other contaminants within the body tissues. The Devon Wildlife Trust's 'Operation Otter' is also gathering further information on the distribution of otters and latest information indicates patchy distribution throughout the LEAP area. Both the River Otter and the River Sid have shown positive signs within their middle and upper reaches. **Action 10c.**

Target: Increase otter territories within LEAP area to pre-1970 levels, ensure breeding populations present on both rivers by 2010, ensure road casualties are minimised by appropriate preventative measures.

Current information indicates that the water vole, a protected species, does not occur within the LEAP area, but may be present in the neighbouring Exe and Axe & Lim river catchments. Once we have determined the current distribution and, if appropriate, we will work to encourage recolonisation of this LEAP area. This can be achieved by promoting the establishment of marginal and bankside vegetation by buffer strip fencing schemes for example, particularly in areas where mink are absent. The slow recolonisation of the LEAP area by otters may help to displace mink, which combined with habitat loss has been instrumental in the catastrophic decline of the species. (See Issue 5 - Soil and Riverbank Erosion.) **Action 10d**.

Target: Identify current distribution by 2001, restore 2 km of suitable habitat by 2005

Many bat species use river corridors for feeding and roosting. We therefore have a particular interest in ensuring that river management and water quality control takes full account of their needs. **Action 10e**.

Target: Ensure protection of all known roosts. Achieve a 30% increase in bat populations within the LEAP area by 2010.

Both sand martins and kingfisher are breeding within the LEAP area. Breeding sites can be vulnerable to riverbank erosion control and other river maintenance activities, which may not only destroy nests but also stabilise eroding faces, leading to abandonment of sites. Where we have a control over riverbank work and where appropriate, we will work to ensure favourable status for these species as part of our routine activities.

The barn owl is endangered within the UK and Europe and, by encouraging the establishment of buffer zones along rivers and ditches, we can provide hunting habitat of rough grassland in areas where tree establishment is not required. **Action 9c**.

The Atlantic Salmon is a species of international concern and, whilst the precise cause of its decline is not known, it is believed that changes in temperature patterns in the North Atlantic, as a result of climate change, may be responsible (see Issue 9 - Management of Our Freshwater Fisheries).

The exact status of the endangered brook, river and sea lampreys within the LEAP area is unknown, although lamprey (species not verified) have been recorded within the River Otter and the estuary. We need to determine the status of each of the three species to determine whether any action is necessary to ensure the conservation of this species.

Target: Determine status of each lamprey species within LEAP area by 2001

We have a historical record of a population of the nationally endangered freshwater white-clawed crayfish (*Austropotamobius pallipes*) on the lower reaches of River Otter. This species has become endangered since the introduction of the signal crayfish (*Pacifastacus leniusculus*), which is more aggressive than our native species and can also carry crayfish plague. The *LEAP area* is included within a statutory 'no-go' area, where the keeping of non-native crayfish is effectively prohibited. **Action 10f**.

Target: Determine current status of white-clawed crayfish within LEAP area and assess the possibility of re-introducing the species to historic sites.

In addition to the above issues, the River Otter catchment has seen the spread of non-native plant species. Several plants are causing concern; they include Japanese knotweed (*Reynoutria japonica*) and Himalayan balsam (*Impatiens glandulifera*), which have spread along the banks of many watercourses. Giant hogweed (*Heracleum mantegazzianum*) is not known to occur within the catchment. Whilst Himalayan balsam is now so widespread that control would be impossible, the distribution of Japanese knotweed is more localised and we encourage its control. Similarly we are concerned about the spread of many non-native aquatic species, which are widely available to the public for use in garden ponds etc, species such as parrot's feather (*Myriophyllum aquaticum*) and water fern (*Azolla filiculoides*). Many of these species are vigorous growers and once released into the wild can spread rapidly at the expense of our native flora, reducing biodiversity. We know that parrot's feather occurs within the catchment and we will encourage its control. We have written to the relevant trade associations urging them to encourage garden centres and other suppliers to withdraw these plants from sale and help to increase public awareness. **Action 10h**.

Target: Prevent the spread of aquatic non-native invasive plant species. Restrict the spread of Japanese knotweed and giant hogweed.

Alder root disease (*Phytophthora* sp.) occurs within the catchment and has continued to spread across the UK although there was a decline in the rate of spread during 1997. Evidence from the Forestry Commission suggests trees with severe crown symptoms may recover in subsequent years. Observations also suggest that the fungus may sometimes die out and that coppicing gives new growth a chance to develop. No planting of alder should be undertaken in areas liable to flooding where the disease is present and riparian owners should encourage natural regeneration of alder where possible. Further information on the disease is contained within the Forestry Commission leaflet 'Phytophthora Disease of Alder - July 1998', available from the Forestry Commission or ourselves. **Action 10i**.

Table 10 Actions for Rivers, streams and fluvial processes

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Establish criteria for the designation of rivers and streams as County Wildlife Sites and examine potential for creating demonstration sites for best working practice techniques.	Agency, DWT, EDDC, *EN*	unknown	●	●	●	●	●
b	Promote and implement actions from the Devon BAP for Rivers, streams and fluvial processes by promoting measures to conserve, enhance or interpret earth science features linked to the water environment.	Agency, EDDC, EDCCS	unknown	●	●	●	●	●

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
c	Promote and implement actions from the Devon BAP for otter by continuing the post-mortem programme and identify road casualty blackspots and investigate other possible causes for the slow colonisation of the LEAP area. Promote habitat creation/restoration.	Agency, DWT, EN, DCC, LPAs	3k	●	●	●	●	●
d	Promote and implement actions from the Devon BAP for water vole by determining the status within the LEAP area and investigating opportunities for habitat restoration and population re-establishment if appropriate.	Agency	2k	●	●	●	●	●
e	Promote and implement actions from the Devon BAP for bats by protection and restoration of wetland and riparian habitats, encouraging water quality levels which will help support populations of aquatic insects on which bats feed.	Agency, EN, Devon Bat Group, DWT, *Others*	unknown	●	●	●	●	●
f	Promote and implement actions from the Devon BAP for freshwater white-clawed crayfish by surveying historical sites to confirm presence and initiate appropriate habitat management, and develop and implement actions to protect and/or reintroduce populations dependent upon survey.	Agency	2k	●	●	●	●	●
g	Implement recommendations of exposed riverine sediments invertebrate research and development.	Agency, EN	2k p.a.	●	●	●	●	●
h	Continue to monitor spread of marginal and aquatic invasive plants, encourage and facilitate control and raise public awareness of the issue. Ensure continued control on Agency-owned land, where necessary.	Agency, LPAs, Riparian owners	<1k p.a.	●	●	●	●	●
i	Continue to raise public awareness of the spread of *Phytophthora* (alder root disease), encourage the reporting of diseased trees and provide guidance.	Agency, FC	1k p.a.	●	●	●	●	●

Standing open water (including ponds and lakes) - There are a number of lakes within the LEAP area. These range from the Otterhead Lakes in the upper part of the River Otter catchment to the ornamental lake at Bicton and the old mineral workings at West Hill. Ponds are not a common feature of the Devon landscape, but do occur infrequently and provide an important habitat for a wide range of associated flora and fauna. Although we have no comprehensive county-based record for amphibians, we know that the great crested newt does occur within the Sid and Otter LEAP area. A population was discovered near Fenny Bridges during the environmental assessment for the A30 improvements between Honiton and Exeter. We need to improve our information on amphibians within the county as a whole, especially where the rarer species are concerned. **Action 11a**.

Invasive aquatic plants can be a particular problem within areas of standing open water and we are concerned about the spread of a number of aquatic plants within the LEAP area (see Rivers, streams and fluvial processes above).

Target: Establish current status of great crested newt. Develop appropriate actions to maintain and restore populations.

Table 11 Actions for standing open water

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from the South West BAP for standing open water by ensuring favourable management, encouraging creation of new sites and encouraging the development of a county-wide database for amphibians.	DWT, Agency, FWAG, LPAs, EN	2k	●	●	●	●	●

Lowland heath - Lowland heath is a habitat of international importance and the UK contains approximately 20% of the total area occurring in Europe. There are two significant areas of lowland heath within the LEAP area, these occur on the East Devon Pebblebed Heaths and within the Blackdown Hills. The habitat often occurs within a complex association of other habitats and a correspondingly rich complement of plant and animal species are often present, many of which are rare, including the southern damselfly, Dartford warbler and nightjar, which are all found within the East Devon Pebblebed Heaths. In addition two bird species, which are not rare, but are nevertheless experiencing a national decline, also breed on the East Devon Pebblebed Heaths, namely skylark and curlew. The East Devon Pebblebed Heaths have been identified as a priority site in the review of existing authorisations and activities that we licence within sites protected under the Habitat's Directive. Work is currently being undertaken to determine whether any existing abstractions may affect the integrity of the site (see Issue 6 - Managing Our Water Resources). **Actions 12a, 12b, 12c & 12d**.

Target: Ensure no further loss of existing resource, restore 130 ha by 2005, assess impact of Agency licensed activities of East Devon Pebblebed Heaths by 2004, maintain existing populations of southern damselfly and restore breeding population to Venn Ottery Common.

Table 12 Actions for lowland heath

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from the Devon BAP for lowland heath and East Devon Heathlands BAP by supporting the implementation of heathland restoration within the LEAP area.	Agency, EN, RSPB, EDDC, DWT	unknown	●	●			
b	Support and contribute towards implementing heathland restoration initiatives within the LEAP area.	Agency, EN	2k	●				
c	Promote appropriate management for conservation of southern damselfly, and ensure hydrology of occupied and potential reintroduction sites is protected.	RSPB, DWT, EN, Agency, *Clinton Devon Estates*	3k	●	●	●	●	
d	Promote appropriate conservation management for curlew and nightjar.	RSPB, DWT, EN, *Agency, Clinton Devon Estates*	<2k	●	●	●	●	

Floodplain grazing marsh - In Devon grazing marsh is only found in association with estuaries, however most have been lost due to agricultural improvement. Within the LEAP area an important area of grazing marsh occurs along the western margins of the Otter Estuary. These marshes contain species-rich ditches and although there is a flood bank between the marshes and the estuary to prevent extensive tidal flooding, we manage the bank sympathetically for wildlife whilst ensuring it fulfils its flood defence functions. The floodplain grassland of the lower Otter has great conservation potential, but changes in existing management will be needed to realise this. The East Devon Coast & Countryside Service has endeavoured to develop a Water Level Management Plan for the marshes adjacent to the Otter Estuary, but the response from landowners has not been favourable. We will continue to seek to influence the levels of payments and priorities for agri-environment schemes through discussions with MAFF to encourage wider uptake. **Action 13a**.

Barn owls are strongly associated with lowland river valleys and floodplains and we have a particular interest in their conservation. (See also Rhos pasture above).

Target: Maintain the extent and quality of existing grazing marsh, restore 20 ha of grazing marsh that has become too dry or is intensively managed, by 2005.

Table 13 Actions for floodplain grazing marsh

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from Devon BAP for grazing marsh and Barn owl by encouraging sympathetic management and identify opportunities for enhancement and restoration.	Agency, RSPB, DWT, EN, EDCCS, BOT, Hawk & Owl Trust	<1k	●	●	●	●	

Reedbeds - Although typically species-poor, reedbeds are an important habitat supporting a distinctive complement of many rare breeding bird species and in many circumstances, large populations of amphibians and invertebrates. This habitat is not particularly common in Devon and is not well-represented within the LEAP area. The most significant area occurs adjacent to the Otter Estuary, on the landward side of the west bank, though the site is not large enough (less than 10 ha) to support many critical species. Reedbeeds are often vulnerable to loss through lack of or inappropriate management; however, this site forms part of a Devon Wildlife Trust Reserve and is managed specifically for conservation purposes. In addition to the wildlife value, reedbeds represent a sustainable method of water treatment and we are keen to promote reedbed creation where it can produce wildlife benefits and/or water quality improvements. The opportunity for the creation of additional reedbed adjacent to the estuary is limited due to the concentration of existing habitats of wildlife value, but there may be opportunities for the creation of reedbeds, albeit on a relatively small scale, elsewhere within the LEAP area. **Action 14a**.

Target : Ensure no loss of habitat and create up to 1ha of additional reedbed by 2005.

Table 14 Actions for reedbeds

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from Devon BAP for reedbed by encouraging appropriate management of existing reedbeds and advise on and encourage the use of reedbeds for wildlife and pollutant/effluent treatment. Identify potential sites for restoration.	Agency, LPAs, SWWL, RSPB, DWT	2k	●	●	●	●	

Estuaries and associated habitats - Estuaries are highly productive environments with high wildlife value, however, most of the estuaries in Devon have been modified by the actions of man. Even though the Otter Estuary is relatively small, it does contain rich invertebrate communities, most numerous of which are the burrowing amphipod *Corophium volutator*, the ragworm *Hediste diversicolor* and in the higher estuary the polychaete *Manayunkia aesturina*. These communities of invertebrates support migrant and wintering wildfowl, with birds often moving between the Otter Estuary and the larger, internationally important Exe Estuary.

The Ottery estuary (a SSSI) contains an area of saltmarsh with one of the widest range of plant communities within the region, and the east bank of the estuary also supports large stands of willow scrub with tall-herb vegetation which are important to breeding birds such as the reed and sedge warbler. All three species of woodpecker also breed near the estuary as do serin (a rare finch), little owl, shelduck and nuthatch. **Action 15a**.

Whilst the anticipated sea-level rise resulting from global warming is expected to result in the loss of many coastal habitats, studies have shown that vertical accretion of saltmarsh is likely to be able to keep pace with the expected sea-level rise of up to 10 mm/year[15].

Target: Ensure no net loss of intertidal area, maintain and seek to increase numbers of waders and wildfowl using Otter Estuary. Establish current extent and quality of saltmarsh by 2001.

Table 15 Actions for estuaries and associated habitats

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from Devon BAP for estuaries by maintaining existing area and conservation value of estuarine habitats. Seek opportunities to enhance the value of estuarine and adjacent habitats for breeding, migrating and overwintering birds.	Agency, EN, DWT, EDCCS	2k	●	●	●	●	

Sea cliffs and slope - The whole coastline of the LEAP area lies within the proposed Dorset and East Devon Coast World Heritage Site, as put forward by the Government to UNESCO. As a World Heritage Site, the coast would receive international recognition as an area with globally important geological interest. The area has great scientific and educational importance, with some of the finest coastal scenery in Britain. Of particular note in the LEAP area are the eroding Triassic sandstone outcrops at Budleigh Salterton and Ladram Bay. Included within the proposed World Heritage Site are sites of European and national importance namely Sidmouth to West Bay candidate SAC (vegetated sea cliffs), which includes Sidmouth to Beer Coast SSSI.

The cliffs are steep and afford little opportunity for colonisation by plants. The cliff tops are colonised by developing scrub, which in places may be developing at the expense of natural maritime cliff top vegetation. Although the cliff faces do not support important seabird colonies, occasional groups of seabirds breed and the cliffs are particularly important for breeding peregrine falcons. There are currently no specific actions proposed for this habitat.

Rocky foreshore - Ladram Bay, near Otterton, represents an important recreational and educational resource along this stretch of coastline. Popular with the public and educational establishments it provides a sheltered shingle beach and a rocky shore which offers opportunity to study rock pool wildlife, biological zonation and coastal erosion. The site houses the Marine Interpretation Centre which has proved highly successful, serving several thousand visitors per year.

Ladram Bay is a complex marine environment containing an outstanding range of wildlife. The sheltered beach is one of the few sites for the rare peacock's tail or turkey feather alga (*Padina pavonia*), which can also be found at Budleigh Salterton and Sidmouth beaches. Populations are ephemeral and substantial changes can occur in relatively short time periods. Rockpool inhabitants include the broad-clawed porcelain crab (*Porcellana platycheles*), edible crab (*Cancer pagurus*) and hairy crab (*Pilumnus hirtellus*). The intertidal rocks are colonised by the brown seaweed *Asperococcus compressus*, which although present around the British Isles is rare. Similarly, the sub-tropical red seaweed *Lophosiphonia reptabunda* also occurs near Ladram Bay, one of only two sites within the British Isles. At the neighbouring Hern Rock Bay the honeycomb worm (*Sabellaria alveolata*) forms spectacular reefs which are considered

to be some of the best examples within the United Kingdom. These reefs are, however, susceptible to damage from trampling and caution is necessary where visitor pressure is uncontrolled. The lower shore at Ladram supports rich underboulder communities of sea squirts, anemones and crabs and the rock surfaces are dominated by the red alga *Mastocarpus stellatus*.

Whilst uncontrolled recreational pressure can have an impact upon the rocky foreshore, one of the greatest potential threats comes from oil pollution. **Action 16a**.

Table 16 Action for rocky foreshore

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Promote and implement actions from Devon BAP for rocky foreshore by encouraging ecologically benign clean-up policies within oil spill contingency plans, and continuing to raise awareness of the high value of, and threats to, the marine environment.	EDDC, *Agency, MAFF/FRCA, DWT, EN, DSFC*	2k	●	●	●	●	

Coastal reefs and rocky seabed - Lyme Bay contains coastal reefs which support diverse communities of marine life including sponges, anemones, cup corals, ross corals and sea fans. Of these, only the area known as the Exeters lies within this LEAP area. Recent survey information undertaken by the Devon Wildlife Trust (DWT) showed that this reef contained a low abundance of species diversity with occasional sightings of scallops (*Pecten maximus*) and a few hydroids (*Nemertesia antennina*) attached to rock fragments and empty shells. The survey suggested that the site had been extensively dredged which may account for the low species diversity. Further marine surveys have been undertaken by DWT, although these have mainly looked at reefs to the east of Beer Head which fall within the Axe and Lim LEAP area. **Action 17a**.

Table 17 Action for coastal reefs and rocky seabed

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Work with Devon Sea Fisheries Committee to ensure damage to valuable marine habitats and features is minimised.	Agency, DSFC, DWT	2k	●	●	●	●	

Regionally Important Geological Sites - The geology of Devon is unique giving rise to a wealth of exposed features and impressive landscapes associated with particular underlying geology. Exposed features can occur in a variety of situations including riverbanks and cliffs. The Devon RIGS (Regionally Important Geological/ Geomorphological Sites) Group has been established to identify and describe sites of county importance. In line with its conservation duties, the Agency is keen to support this initiative and has in the past made financial contributions to this work. A similar initiative has also been undertaken in Somerset, where information on RIGS is held at the Somerset Records Centre. **Action 18a**.

Two RIGS sites have been identified within the Sid and Otter LEAP area, both of which are in Devon. Where possible we will continue to support the identification of RIGS and the updating of inventories.

Table 18 Actions for RIGs

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Support identification/documentation of Earth science features and sites and promote the understanding of the importance of geomorphology in natural river processes and support identification and documentation of County Geological Sites (RIGS).	Agency, RIGS Groups, EDDC, EDCCS	1k p.a.	●	●	●	●	●

Issue 8: Recreation

Use of our rivers and coasts has become a popular leisure activity. We have a duty to promote the use of inland and coastal waters and associated land for recreational purposes for all, including provision for the less able. In carrying out this duty we need to balance carefully the potential conflicts between conservation and recreation. We will, where landowners and other interested parties are supportive, encourage access and promote the use of particular rights of way.

Most of Devon's rivers lie within private ownership and without the co-operation of landowners there are few opportunities for improving access to rivers and wetlands beyond the public footpaths already in existence. The Government recently pledged its commitment to achieving greater public access on foot to open countryside. In general we support the principle of increasing access for the enjoyment of the countryside; however, universal unrestricted access could generate significant problems. It is important that decisions on access must include consideration of the impact on the environment, taking account of Biodiversity Action Plans and sustainability of fragile natural habitats. Areas of undisturbed or quiet land are important wildlife havens even if they are not covered by statutory designations. Where access can be achieved in co-operation with landowners and without adversely affecting the conservation value of the water environment, significant benefits for people can come from improved access to rivers and wetlands.

Development of footpaths - We own land around the flood defence scheme in Ottery St Mary and here an opportunity exists to link the popular footpath along Canaan Way to Finnimore Industrial Estate and beyond, using the banks of the flood defence scheme for part of the route. Further south, immediately downstream of St Saviours Bridge, Ottery Town Council is developing a scheme for a circular footpath crossing over the River Otter as part of a Millennium bid. Honiton Town Council are also looking into the possibility of developing a footpath along the river connecting each end of the town. **Action 19a**.

Concern has been raised by the Otter Valley Association regarding potentially dangerous sections of the footpath between Budleigh Salterton and Ottery St Mary. Diversions along dangerous roads have to be taken at Tipton St John and Cadhay Bridge, Ottery St Mary. We are willing to assist with negotiations to improve the situation. **Action 19b**.

Following an increase in funding of public transport, targeting rural areas, Devon County Council is promoting improved links throughout East Devon. This improvement to rural public transport will enable better linkage of existing footpaths throughout the district and encourage wider usage.

Concerns have also been raised about the inappropriate disposal of dog excrement into watercourses (for example) around the Honiton area, and the River Gissage in particular, by people exercising their dogs. Despite the provision of dog bins in popular dog walking areas along the River Gissage, these are not always used. We will work with members of the LEAP steering group to highlight the problems caused by this activity. **Action 19c**.

Cycling - Sustrans, the civil engineering charity promoting sustainable transport, are currently developing the National Cycle Network in response to the Government's National Cycling Strategy launched in 1996 which aims to quadruple the amount of cycling activity within a decade. It is proposed that part of this route will run through Budleigh Salterton and Sidmouth. Devon County Council promotes a number of existing cycling routes within East Devon and the Blackdown Hills, and East Devon District Council have developed the 'Buzzard' route, much of which lies within this LEAP area. **Action 19b**.

Disturbance to wildlife - While the benefits of public access to watercourses are recognised, there are concerns over the level of disturbance that this may pose to the river environment. Wildlife, particularly shy species, may be deterred by large numbers of people and dogs regularly walking the banks, especially when dogs are off the lead. We will continue to encourage habitat creation along watercourses, which can provide relative seclusion for wildlife, especially where public use is high (see Issue 7 - Enhancing Biodiversity and Earth Sciences).

A highly used public footpath runs along the western bank of the Otter Estuary and conflict between walkers and wildlife is minimal as there is a semi-continuous hedge running between the footpath and the estuary. Screened viewing platforms were erected by the East Devon Coast & Countryside Service in 1995 and have significantly helped to balance the needs of wildlife whilst providing a popular recreational resource. **Action 19d & 19e**.

Canoeing - There are no access agreements for canoeing in the LEAP area, other than within the Otter estuary where there is a public right of navigation. There may be opportunities for canoeing agreements at locations where conflicts would not arise with anglers or riparian owners, by permitting access at particular times or on pre-arranged dates for example. It is important to note, however, that significant lengths of the area's rivers are within private ownership and any agreements for access will be dependent upon attaining the full support of riparian owners. We would seek to act as an unbiased broker in any discussions on access and follow guidance contained within our leaflet 'Agreeing Access to Water for Canoeing'. **Action 19f**.

Table 19 Recreation

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Develop proposals for a new footpath route in Ottery St Mary by 2001 using Agency Flood Alleviation Scheme for part of the route, implement as appropriate.	Agency, Ottery Town Council, EDDC	unknown	●	●	●	●	●
b	Support the development of circular and regional footpath and cycle routes and encourage the development of safe alternative routes where dangerous footpath links exist.	DCC, EDDC, Landowners, *Agency*	<1k	●	●	●	●	●
c	Work with Honiton Town Council and East Devon District Council to publicise the problem of dog excrement being disposed of in the River Gissage.	Agency, EDDC, HTC	<1k	●	●	●	●	●
d	Work with others to provide access to and interpretation of, the water environment.	EDCCS, EDDC, DCC, *Agency*	<1k	●	●	●	●	●
e	Raise public awareness of the potential disturbance to wildlife from public access.	EDCCS, DCC, DWT, Blackdown Hills Project, Agency, BTCV	<1k	●	●	●	●	●
f	Encourage discussions between interested parties to investigate the possibilities of allowing canoe access to the River Otter.	BCU, *Riparian Owners, Agency, EDDC, Anglers*	<1k	●	●	●	●	●

Issue 9: Management of our Freshwater Fisheries

The River Otter supports stocks of brown trout which are exploited by rod and line on the main river and some of the major tributaries. The River Sid and its tributaries support a small population of brown trout. There are no significant coarse fishing interests within the LEAP area.

Barriers to fish migration - With the completion of the fish pass at Otterton during 1999, migrating fish are now able to gain access to several miles of the River Otter. Surveys of other obstructions in the LEAP area have identified several weirs which inhibit fish migration. Among the most significant are the weirs at Tipton St John and Head Weir in Ottery St Mary. The latter has an informal blockstone fish pass installed which makes this otherwise complete barrier passable, but its efficiency is almost certainly less than a formal fish pass and there is a constant need to maintain it as the blocks have a tendency to move.

At Tipton, conditions could be improved significantly by making adjustments to the existing weir face, and perhaps importing a small quantity of blockstone to create a pool and overfall effect. Further upstream at Langford, a weir associated with the road bridge creates difficulties for migrating brown trout. Together with the River Otter Association, we are currently developing a low-cost solution to the problem. Other weirs which would benefit from improvement include Marles Farm on the Wolf, and the Colhayes weirs on the Otter. **Actions 20a & 20b**.

Decline in brown trout - The first phase of an investigation into the decline of mature brown trout in Devon rivers was completed in 1999. The problem was most evident on rivers other than the Otter and these are now being used for a second phase of the investigation to determine the causes of the decline. A final phase will be to recommend solutions which, where appropriate, could be applied to the Otter. The findings of Phase 2 are expected to be available at the end of 2000. We are also considering whether an investigation should be carried out into current stock levels in the River Sid. **Action 20c**.

Historically, many riparian interests within the LEAP area have stocked stretches of the River Otter with farmed brown trout from various sources. This practice may have a detrimental effect on the native population by creating competition for food and available habitat, and increasing predation of juveniles. Furthermore, the introduction of farmed fish will modify the genetic integrity of stocks native to the river catchments when farmed fish breed with wild fish. **Action 20d**.

Fish-eating birds -There has been a long-running debate on the perceived impact of fish-eating birds (namely cormorants) on fish populations and angling catches. We have no legal powers to issue licences for the control of these birds. This lies with MAFF. We recognise that there is concern over the levels of predation and where serious damage to a fishery is occurring we will support licensed culling. There is a well-established legal process for fishery owners to pursue if they consider fish-eating birds are having a serious impact on their fishery and we will continue to provide information to fishery and conservation interests to help determine the impact. Following a four-year period of research into the matter, the Government indicated it would like to consider the view of fishing and bird conservation interests before making any final decisions on whether to change legislation. MAFF, DETR and selected organisations will meet to discuss whether the current government policy needs to be revised in the light of the report's findings. We will only be in a position to determine our own approach to the recommendations made once this review has taken place. We are mindful that there will be circumstances where maintaining the population of fish (e.g. salmon) will be the primary concern. **Action 20e**.

Siltation - (See Issue 5 - Soil and Riverbank Erosion)

Gravel removal - There have been instances in the past of riparian owners excavating the river channel flowing through their land. Whilst many of these works do not require the consent of the Agency, they can cause serious damage to the fishery by destroying spawning beds and nursery areas. This activity will take on particular significance if sea trout are to be encouraged to return to the river. **Actions 20f & 20g**.

EC Freshwater Fish Directive[17] - Historically the River Otter has not been designated under the EC Freshwater Fish Directive. In 1995 we recognised that three stretches of the River Otter should be designated as salmonid waters. These stretches are Otterhead Lakes to Cottarson Farm, Cottarson Farm to Tipton St John, and Tipton St John to Tidal Limit.

These stretches were included on our monitoring programme in 1995, and reported on to the DETR, identifying the stretches for designation. However, these stretches were not included in the Notice Classifying Waters in accordance with the Surface Waters (Fishlife) (Classification) Regulations 1997 which was issued by the DETR in July 1998. This omission was identified to the DETR in December 1998, and we await their inclusion in any revision of the Notice. In

the meantime we will continue to regulate the water quality in these stretches of the River Otter as if they were formally designated. All stretches identified for salmonid designation complied with the imperative standards of the Directive for the period 1996 - 1999 inclusive. **Action 20h**.

Shad - The Allis and Twaite shad are both rare and threatened species. In many areas they have been affected by pollution and a deterioration in the habitat. In addition, river structures such as weirs can block their migratory routes. Whilst we are not aware of any sightings of either species in the Sid and Otter river catchments to date, they are known from the Dart and the Exe. Shad are occasionally caught while fishing for salmonids and we are asking that any sightings of these species are reported to us. This will enable us to develop a clearer picture of the current status in Devon as a whole. **Action 20i**.

Table 20 Management of our freshwater fisheries

	Actions	Action By Lead/*Other*	Cost to Agency (£)	Financial Year 00	01	02	03	04
a	Improve conditions for fish migration through partnership funding at Langford, Tipton, Marles Farm and Colhayes weirs.	Agency, *Others*	unknown		●	●	●	●
b	Identify other obstructions to fish migration and plan for improvements.	Agency, *River Otter Association*	unknown	●	●	●		
c	Investigate ova survival in the river catchments at selected sites.	Agency, Fishery Associations	unknown		●			
d	Discourage the stocking of the river catchments with farmed brown trout and promote habitat improvements and recovery of natural fish populations.	Agency, *Riparian Owners, Fishery Associations*	<1k	●	●	●	●	●
e	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*	unknown	●	●			
f	Seek to dissuade riparian owners from carrying out gravel removal or to limit the extent of the operation.	Agency, *Riparian Owners*	<1k	●	●			
g	Continue to press for changes to legislation to allow increased control of in-river works where damage to the fishery is likely to result.	Agency	<1k	●	●	●	●	●
h	Continue to pursue designation of stretches of the River Otter under the EC Freshwater Fish Directive[17]	Agency, *Fishery Associations*	unknown	●	●	●		
i	Encourage reporting of sightings and catches of Allis and Twaite Shad in the river catchments.	Agency, Anglers, Riparian Owners	<1k	●	●			

5. A Better Environment through Partnership

A common thread to all our work programmes is the use of our influence in areas where we may not have direct powers, or where other players have a more significant impact. We work in partnership with a range of organisations and individuals who are concerned with the protection and enhancement of the environment. In the UK as a whole much has been achieved already, but much more is possible by continuing to work closely with others. We are primarily a regulatory body and do not give grants, so to achieve some of our aims we must co-operate with others such as the local authorities and the Ministry of Agriculture, Fisheries and Food to harness their financial resources and technical expertise. We can also work towards our objectives by working with voluntary groups such as the wildlife trusts and recreational associations. In some cases partnerships are already well established with other statutory bodies, especially where there is joint responsibility, such as enhancing biodiversity.

Community Participation

We involve the local community by the establishment of a Steering Group to represent the interests of the commercial sector, local authorities and environmental groups. The Steering Group comment upon the Consultation Draft and Action Plan prior to public release. They will monitor the implementation of the Action Plan and provide us with specific advice on the importance of issues within the LEAP area. They act as a communication link between ourselves and the local community and help to promote and develop initiatives of benefit to the environment of the Sid and Otter LEAP area. The Steering Group members are:

Name	***Representing***
Mr D Dixon	Blackdown Hills AONB Officer
Mr P Gotham	Royal Society for the Protection of Birds
Mr M Hallett	Farmers/National Farmers Union
Mr A Knights	River Otter Association
Mr R T Marker	Riparian Owner
Mr B Myers	Sid Vale Association
Mr S Noar	Tourism & Leisure
Mr C Pulteney	English Nature
Brig H Sheppard	Riparian Owner
Cllr R Webb	Honiton Town Council
Mr M Williams	South West Water Ltd

Development Plans

We can control some of the factors influencing the quality of the environment, but we have limited control over the way that land is developed. This is the responsibility of local planning authorities.

Local authorities prepare statutory development plans. The policies in these plans will guide the way that land is developed in the future. We provide advice and guidance to local planning authorities and work with them to develop and adopt policies which minimise the impact of any development upon the environment. We will reinforce these policies, where we can, when commenting on planning matters or in making our own decisions. LEAPs are one way we aim to influence the content of Local Authority plans.

Associated Statutory and Non-Statutory Plans

In addition to the actions highlighted in the LEAP, we work with a number of other organisations to develop partnerships and collaborative projects. The actions are highlighted in the following statutory and non-statutory plans.

- Biodiversity: The UK Steering Group Report, Volumes I - IV
- Blackdown Hills AONB
- Devon County Structure Plan
- Devon County Waste Strategy

- Devon's Local Agenda 21 Network Issues Report
- East Devon AONB
- East Devon District Council Air Quality Review Stage 1
- East Devon District Local Plan
- East Devon Heritage Coast Management Plan
- English Nature Natural Area Plans
- Lyme Bay and South Devon Shoreline Management Plan (in preparation)
- Somerset Air Quality Steering Group First Stage Air Quality and Review Report
- The Biodiversity of the South West: an audit of the biological resource 1996
- The Nature of Devon: A Biodiversity Action Plan 1998
- East Devon Heathlands BAP

Local Agenda 21

Agenda 21 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 - from national government to individuals in their homes and workplaces.

Local authorities are assisting their local communities in developing strategies and action plans for sustainable development.

Mid Devon District Council have produced a LA21 Strategy in partnership with the community. This strategy will be implemented by a local steering group which will forge links with the local authority decision making process. The Council supports an LA21 Steering Group and there are a number of active local groups.

In **East Devon** the District Council acknowledge that sustainable development has a place in the work of the Council. They now have a pro-active LA21 sub-committee and officers are setting up an LA21 Working Group to advance the Council's contribution to sustainable development in East Devon. In addition, an external LA21 group is being set up, which will be co-ordinated through a council-funded post, to develop LA21 in the community.

We are committed to encouraging more sustainable lifestyles for all, through our work and in partnership with others. This is captured in our vision which is 'a better environment in England and Wales for present and future generations.'

In Devon, we have nominated an officer with responsibility for Agenda 21 who will liaise with the above local authorities and other individuals or groups to progress sustainable development in the county. We are already involved in a number of groups and projects across Devon.

Taunton Deane Borough Council have yet to implement Local Agenda 21 in their area. They have produced a Corporate Plan which is intended to lead to LA21 Partnership.

Integrated Coastal Zone Management

Devon and Cornwall have one of Europe's finest natural and historic coastlines. Over a number of years numerous bodies in this area have formed partnerships to develop coastal initiatives, including Estuary Management Plans, Heritage Coasts, Shoreline Management Plans and Marine Action Plans.

The Atlantic Living Coastlines Project - The aim of this project was to draw together the numerous plans for coastal areas of Devon and Cornwall to produce a strategy for Integrated Coastal Zone Management. This project was funded from the EU TERRA fund with funding matched by existing expenditure on coastal zone management in the area (including the Agency's LEAPs for Devon and Cornwall). Currently there are no specific resources for the implementation of the strategy.

Shoreline Management Plan (SMP) - This document sets out a strategy for coastal defence for a specified length of coast, taking account of natural coastal processes, human and other environmental influences. SMPs are part of an initiative on the future planning of our coastline, backed by MAFF, the Association of District Councils, English Nature and ourselves.

In partnership with local authorities, County Councils and English Nature, we have prepared the Lyme Bay and South Devon SMP which was adopted in December 1998. This SMP covers the coastal cell from Portland Bill to Rame Head and sets out a strategy for coastal defence. This LEAP considers conservation and recreation issues and the preservation and enhancement of the landscape interest of the coastline in relation to sea defence and coastal protection policies.

Dorset and East Devon World Heritage Site - The Dorset Coast Forum has proposed a stretch of coastline from Poole in Dorset to Budleigh Salterton in Devon as a World Heritage Site. East Devon District Council, Devon County Council and Dorset County Council have supported this nomination which was to be put before UNESCO in July 2000, with a decision expected in 2001. Following approval, a World Heritage Steering Group will be formed to advise on the development and management of the area covering a wide range of interests including landowners, user groups, conservation and tourism, to promote and ensure a sustainable future for the coastline.

The Environment Agency and public information

We are committed to being an open organisation; we will provide information about our decisions and actions and ensure consultation for our customers on plans and reports. Our Customer Charter sets out how we aim to achieve this commitment. We must maintain a set of public registers which hold information on the activities we regulate and the monitoring we carry out. In addition to the information we place on registers, we make available most other environmental information that we hold.

We have produced a guide to information available to the public, which sets out what information is accessible and how to obtain it. Information is usually provided free of charge, but for large and complex requests we may charge for staff time and materials. Confidential information, incomplete or draft reports, and information where disclosure may lead to environmental damage are generally not available. Some environmental details and information about our public registers are available on the internet on http://www.environment-agency.gov.uk.

6. 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 the Agency's work is advisory, with the relevant powers resting with other bodies such as local planning authorities. The following table therefore summarises the Agency's 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.	● Grant or vary water abstraction and impoundment licences on application with appropriate conditions imposed to safeguard the needs of the environment whilst allowing reasonable and justified use of available and sustainable water resources - with the aim of achieving an equitable balance between competing demands. ● Revoke or vary existing licences to reinstate flows or levels to surface waters or groundwater which have become depleted as a result of abstraction. Compensation may be payable if such powers are used. ● Secure the proper use of water resources through our role in water resources planning, and the assessment of reasonable need for abstractions and the promotion of more efficient use of water resources. ● Monitor and enforce abstraction and impoundment licences. ● Issue conservation notices to direct appropriate practices with regard to water resources issues associated with exempt dewatering activities.	● 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.	● The Agency uses its position as a statutory consultee to the planning authorities to secure conditions and agreements that protect the water environment and that encourage water conservation measures. ● The Agency also seeks to influence planning decisions for new development by ensuring that planning authorities allow for any lead-time required for resource development. ● The Agency is committed to water-demand management and will work closely with water companies and developers, local authorities and relevant organisations to promote the efficient use of water. ● The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand-management measures.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership
Flood Defence			
The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each LEAP area.	• Control, through Land Drainage consents, 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.	• Granting of planning permission throughout a LEAP area but especially floodplains where development can significantly increase flood risk. This permission is granted by local planning authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Supervising the maintenance of ordinary watercourses which is a local authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance.	• 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.
Water Quality			
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.	• 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.	• 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.	• 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.	• 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.	• The vast number of smaller industrial processes which are controlled by local authorities. • Control over vehicular emissions and transport planning.	• 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.	• To issue certificates to users of radioactive materials and disposers of radioactive waste, with an overall objective of protecting members of the public.	• The health effects of radiation.	• 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.	• Vary waste management licence conditions. • Suspend and revoke licences. • Investigate and prosecute illegal waste management operations.	• 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.	• The Agency will work with waste producers, the waste management industry and local authorities to reduce the amount of waste produced, increase re-use and recycling and improve standards of disposal.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership
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.	• 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.	• Securing with others, including local authorities, landowners and developers, the safe remediation of contaminated land.	• 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.	• 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.	• 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.	• 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.	• 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.	• The landscape impact of new development, particularly within river corridors. This is controlled by local planning authorities.	• 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 advisory activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	• The Agency must promote its archaeological objectives through the exercise of its water management and pollution control powers and duties.	• Direct protection or management of sites of archaeological or heritage interest. This is carried out by local planning authorities, County Archaeologists and English Heritage.	• 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.	● Regulate fisheries by a system of licensing. ● Make and enforce fisheries byelaws to prevent illegal fishing. ● Promote the free passage of fish and consent fish passes. ● Monitor fisheries and enforce measures to prevent fish entrainment in abstractions. ● Promote its fisheries duty by means of land drainage consents, water abstraction applications and discharge applications.	● The determination of planning applications which could affect fisheries.	● 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.	● The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management.	● Promotion of water sports. This is carried out by the Sports Council and other sports bodies.	● 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.

Appendices

Appendix 1: Actions from Consultation Draft

The following is a list of the actions which were proposed in the Sid & Otter Consultation Draft and their status within this Action Plan, together with actions which have been developed subsequently.

	Former Consultation Draft Action	Number in this Action Plan
1a	Complete improvements to Sidmouth STW under AMP2 and AMP3.	Completed
1b	Pursue improvements to Otterton STW and Churchinford STW under AMP3.	Amended action 1a
1c	Review results of monitoring of the River Otter at Tipton St John to see if RQO failure recurs.	Amended action 1b
1d	Carry out an investigation to assess the biological quality of the River Tale and identify potential areas for improvement.	Action 1c
2a	Review results of monitoring of the River Gissage to see if RQO failure recurs.	No longer necessary due to current RQO results
2b	Conduct risk assessment at industrial sites at Colaton Raleigh, Talewater and Sidmouth and carry out remediation if necessary.	Action 2a
2c	Liaise with EDDC to ensure effective remediation of Honiton sawmills site prior to development.	Completed
2d	Carry out flood defence work at Otterton.	Action 2b
2e	Support assessment of archaeological and historic value of LEAP area.	Action 2e
3a	Carry out additional flood defence work at Ottery St Mary.	Amended action 2c
3b	Provide enhancements to the River Otter Flood Alleviation Scheme at the Land of Canaan car park.	Combined with action 2c
3c	Assess results following investigation into the runoff from East Hill.	Action 2d
4a	Pursue Waste Minimisation Schemes in East Devon with the support of PAYBACK.	Action 3a
4b	Co-operate with Devon County Council to undertake a risk assessment of the closed landfill sites in the LEAP area.	Completed
4c	Review monitoring information from Knapps Copse closed landfill site to assess effectiveness of the treatment system.	Action 3b
4d	Encourage the provision of waste oil disposal facilities by the Local Authorities, where appropriate.	Action 3c
5a	Investigate cause of poor water quality in the River Otter from Hoemore Farm to Clapperlane and in the River Love.	Action 4a
5b	Relocate monitoring site at Clapperlane Bridge to a more representative site.	Action will not be progressed
5c	Continue to influence ESA scheme objectives through attendance at the Liaison Group meetings and ensure our interests are protected.	Action 4b
5d	Encourage uptake of Countryside Stewardship scheme by eligible landowners.	Action 4c
6a	Encourage riparian owners to provide suitable conditions for development of more extensive marginal vegetation.	Amended action 5b
6b	Where appropriate, promote bankside fencing schemes to limit bank erosion and reduce sediment input to the river.	Action 5c
6c	Promote formal stock watering points and buffer zones and encourage the planting of appropriate bankside trees.	Action 5d
7a	Revise Regional Water Resources Development Strategy.	Action 6a

7b	Complete Stage II of the Habitats Review on East Devon Pebblebed Heath, (Priority SAC and SPA site), assessing which, if any, licences are having a significant effect on the site.	Action 6b
7c	Develop an approach to abstraction licensing in the Otter Valley in accordance with conclusions of the Otter Low Flow Study.	Replaced by new action 6c
8	Support the updating of wildlife inventories.	Action 7a
9a	Promote and implement actions from the Devon BAP for wet woodland by assisting with assessment of extent of resource, seeking potential new sites and promoting use as buffer strips.	Action 8a
9b	Identify areas of river valleys where tree planting can be encouraged without adversely affecting flood risks.	Action 8b
10a	Promote and implement actions from the Devon BAP for Rhôs pasture by encouraging sympathetic management and/or restoration of sites. Also discourage inappropriate creation of lakes/ponds within Rhôs pasture.	Action 9a
10b	Promote and implement actions from the Devon BAP for curlew & marsh fritillary by promoting sympathetic management and restoration of breeding sites.	Amended action 9b
10c	Promote and implement actions from the Devon BAP for barn owl by promoting appropriate management of riparian feeding habitats and providing nest boxes to encourage recolonisation.	Action 9c
10d	Support measures from the National Fen, Carr, Marsh, Swamp & Reedbed Habitat Statement, and enter 80% of spring-line mire resource into protective management by 2005.	Action 9d
11a	Promote and implement actions from the Devon BAP for rivers and streams by providing guidance on best practice for riverbank management, promoting the creation of riparian buffer strips through advice and provision of fencing.	New actions 5a, 5b & 5c
11b	Establish criteria for the designation of rivers and streams as County Wildlife Sites and examine potential for creating demonstration sites for best working practice techniques.	Action 10a
11c	Promote and implement actions from the Devon BAP for fluvial processes by promoting measures to conserve, enhance or interpret earth science features linked to the water environment.	Action 10b
11d	Promote and implement actions from the Devon BAP for otter by continuing the post-mortem programme and identify road casualty blackspots and investigate other possible causes for the slow colonisation of the LEAP area. Promote habitat creation/restoration.	Action 10c
11e	Promote and implement actions from the Devon BAP for water vole by determining the status within the LEAP area and investigating opportunities for habitat restoration and population re-establishment if appropriate.	Action 10d
11f	Promote and implement actions from the Devon BAP for freshwater white-clawed crayfish by surveying historical sites to confirm presence and initiate appropriate habitat management, and develop and implement actions to protect populations dependent upon survey.	Action 10f
11g	Implement recommendations of exposed riverine sediments invertebrate research and development.	Action 10g
11h	Continue to monitor spread of marginal and aquatic invasive plants, encourage and facilitate control and raise public awareness of the issue. Ensure continued control on Agency-owned land, where necessary.	Action 10h
11i	Continue to raise public awareness of the spread of *Phytophthora* (alder root disease), encourage the reporting of diseased trees and provide guidance.	Action 10i
12a	Promote and implement actions from the South West BAP for standing open water by ensuring favourable management, encouraging creation of new sites and encouraging the development of a county-wide database for amphibians.	Action 11a
13a	Promote and implement actions from the Devon BAP for lowland heath by investigating the impact of abstractions on East Devon Pebblebed Heaths, devise and implement appropriate actions.	Amended action 12a

13b	Support and contribute towards implementing heathland restoration initiatives within the LEAP area.	Action 12b
13c	Promote appropriate management for conservation of southern damselfly, and ensure hydrology of occupied and potential reintroduction sites is protected.	Action 12c
13d	Promote appropriate management conservation for curlew.	Amended action 12d
14a	Promote and implement actions from Devon BAP for grazing marsh by encouraging sympathetic management and identify opportunities for enhancement.	Amended action 13a
15a	Promote and implement actions from Devon BAP for reedbed by encouraging appropriate management of existing reedbeds and advise on and encourage the use of reedbeds for wildlife and pollutant/effluent treatment.	Amended action 14a
16a	Promote and implement actions from Devon BAP for estuaries by maintaining existing area and conservation value of estuarine habitats. Seek opportunities to enhance the value of estuarine and adjacent habitats for breeding, migrating and overwintering birds.	Action 15a
17a	Promote and implement actions from Devon BAP for rocky foreshore by encouraging ecologically benign clean-up policies within oil spill contingency plans, and continuing to raise awareness of the high value of, and threats to, the marine environment.	Action 16a
17b	Work with Devon Sea Fisheries Committee to ensure damage to valuable marine habitats and features is minimised.	Action 17a
18a	Support identification/documentation of Earth science features and sites and promote the understanding of the importance of geomorphology in natural river processes and support identification and documentation of County Geological Sites (RIGS).	Action 18a
19a	Develop proposals for a new footpath route in Ottery St Mary by 2001 using Agency Flood Alleviation Scheme for part of the route, implement as appropriate.	Action 19a
19b	Support the development of circular and regional footpath and cycle routes.	Amended action 19b
19c	Work with others to provide access to and interpretation of the water environment.	Action 19d
19d	Raise public awareness of the potential disturbance to wildlife from public access.	Action 19e
19e	Encourage discussions between interested parties to investigate the possibilities of allowing canoe access to the River Otter.	Action 19f
20a	Complete installation of fish pass at Otterton Weir and monitor effectiveness.	Completed
20b	Improve conditions for fish migration through partnership funding at Langford, Tipton and Marles Farm weirs.	20a
20c	Ensure satisfactory completion of fish passage facilities at A30 road crossing of river.	Completed
20d	Identify other obstructions to fish migration and plan for improvements.	20b
20e	Continue to pursue designation of stretches of the River Otter under the EC Freshwater Fish Directive	20h
20f	Investigate ova survival in the river catchments at selected sites.	20c
20g	Discourage the stocking of the river catchments with farmed brown trout and promote habitat improvements and recovery of natural fish populations.	20d
20h	Include River Otter in current Environment Agency/Wild Trout Society investigation into the decline of brown trout.	Action will not be progressed
20i	Co-operate with the licensing authority to progress research into fish-eating birds and implement recommendations where appropriate.	Replaced by new action 20e
20j	Continue to work positively with owners and anglers to establish the full facts about fish-eating birds in each situation.	Replaced by new action 20e
20k	Seek to dissuade riparian owners from carrying out gravel removal or to limit the extent of the operation.	Action 20f
20l	Continue to press for changes to legislation to allow increased control of in-river works where damage to the fishery is likely to result.	Action 20g

New Actions

1d	Ensure information leaflets on the care of septic tanks are sent to new property owners on the transfer of Consents to Discharge.
5a	Develop a partnership project in the Otter Valley to raise awareness about the problems of soil erosion, and to promote good agricultural practice.
6c	Implement CAMS for the LEAP area.
8c	Create new areas of wet woodland through planting and appropriate management.
10e	Promote and implement actions from the Devon BAP for bats by protection and restoration of wetland and riparian habitats, encouraging water quality levels which will help support populations of aquatic insects on which bats feed.
19c	Work with Honiton Town Council and East Devon District Council to publicise the problem of dog excrement being disposed of in the River Gissage.
20e	Establish Agency approach to the issue of fish-eating birds following MAFF/DETR decision regarding government policy in the light of R&D findings.
20i	Encourage reporting of sightings and catches of Allis and Twaite Shad in the river catchments.

Appendix 2: List of Organisations who Responded to Public Consultation

During the consultation process for the Sid and Otter LEAP, we received representations from a number of organisations. The following is a list of both National and Local organisations which responded.

National Organisations

Atlantic Salmon Trust
British Canoe Union
Butterfly Conservation
Clean Rivers Trust
Country Landowners Association
Farming and Rural Conservation Agency
Forestry Commission
Hawk and Owl Trust
Inland Waterways Association
National Farmers Union
The Ramblers

Regional and Local Organisations

Bicton College
Devon Birdwatching and Preservation Society
Devon Farming and Wildlife Advisory Group
East Devon Business Centre
East Devon District Council
Honiton Town Council
Monkton Parish Council
Norman Lockyer Observatory Society
Offwell Parish Council
Otter Valley Association
Payhembury Parish Council
Westcountry Tourist Board
Woodbury Parish Council

Responses were also received from a number of individuals with an interest in the area. A copy of the Summary of Public Consulation for the Sid and Otter LEAP is available on request. If you would like a copy please contact the LEAPs Team at the address at the front of the book.

Appendix 3: EC Directives affecting Water Quality in the Sid and Otter LEAP Area

In addition to setting RQOs for river stretches, we manage water quality by applying the standards set in EC Directives. Failures to comply with these standards are discussed in the Issues section of this LEAP.

Failures of EC Bathing Water Directive[5] - The EC Directive concerning the quality of bathing water seeks to protect public health and the amenity value of popular bathing waters by reducing pollution. The Directive contains standards for nineteen microbiological, physical and chemical parameters to assess bathing water quality. Compliance is assessed mainly by testing against standards for faecal indicator bacteria.

We are responsible for monitoring the quality of identified, popular bathing waters and providing the results to the Department of Environment, Transport and the Regions (DETR) who decide whether the standards in the Directive have been met. Where identified bathing waters fail to meet the Directive, we are responsible for identifying sources of pollution that are causing failures, and making sure that improvements are made. The Agency priority is to ensure compliance with the mandatory standards of the EC Bathing Waters Directive. We will also seek compliance with guideline standards where this is achievable, taking into consideration costs and benefits.

EC Urban Waste Water Treatment Directive[6] - The EC Directive concerning Urban Waste Water Treatment specifies minimum standards for sewage treatment and sewage collection systems. This Directive specifies that secondary treatment must be provided for all discharges serving population equivalents greater than 2,000 to inland waters and estuaries, and greater than 10,000 to coastal waters. Discharges below these populations equivalents receive appropriate treatment as defined in the AMP2 guidance note. We are responsible for making sure that discharges receive the level of treatment specified in this Directive.

The Directive also requires higher standards of treatment for discharges to *sensitive* areas. Sensitive areas are those waters that receive discharges from population equivalents of greater than 10,000, and are or may become eutrophic in the future. The DETR decide if a watercourse is sensitive based on monitoring information provided to them by us. We also ensure that discharges to sensitive areas receive a higher level of treatment.

Improvements have recently been completed at Sidmouth STW in order to meet the requirements of the UWWTD (see Issue 1 - Impact of Effluent Discharges). Part of the River Otter has been identified as a candidate Sensitive Area under the UWWTD. If designated, nutrient reduction may be required at Honiton STW.

EC Surface Water Abstraction Directive[16] - The EC Directive concerning the quality required of surface water intended for the abstraction of drinking water in the Member States protects the quality of surface water used for public supply. This Directive ensures that water abstracted for public supply meets certain quality standards and is given adequate treatment before entering public water supplies.

We are responsible for monitoring the quality of designated surface water abstractions and reporting the results to the DETR who decide whether the standards in the Directive have been met. Where standards are not met, we are responsible for identifying sources of pollution and making sure that improvements are made.

EC Freshwater Fish Directive[17] - The EC Freshwater Fish Directive sets out the quality of waters needing protection or improvement in order to support fish life. The Directive contains two sets of quality standards: one set to protect cyprinid or coarse fish populations, the other set, which is stricter, to protect salmonid or game fish populations.

We are responsible for monitoring the quality of identified fisheries and reporting the results to the DETR who decide whether the standards in the Directive have been met. Where the requirements of this Directive are not met, we are responsible for identifying sources of pollution and making sure that improvements are made. (See Issue 9 - Management of our Freshwater Fisheries.)

EC Groundwater Directive (Groundwater Regulations 1999) - These regulations complete the implementation of the 1980 EC Groundwater Directive in England and Wales. This Directive aims to protect the quality of groundwater by preventing the discharge into groundwater of substances in List I and by limiting the discharge of substances in List II so as to prevent pollution.

List I substances are those that are most harmful to humans or the environment, and include sheep-dip, pesticides, solvents, hydrocarbons, mercury, cadmium and cyanide. List II substances are less dangerous, but could be harmful to groundwater if disposed of in large amounts; these substances include some heavy metals, ammonia and phosphorus.

Anyone disposing of List I & II substances to land (unless covered by certain exclusions) must have a written authorisation from the Agency before doing so. Conditions attached to the authorisation will minimise the environmental risks. If the risk to groundwater is too great, the application will be refused. An authorisation is not required where the activity is already covered by a waste management licence, discharge consent or IPC authorisation.

Appendix 4: Biodiversity

The following table lists the key species associated with the aquatic environment, which are present in the Sid and Otter LEAP area, indicating the relevant Biodiversity Action Plan and the level of our responsibility in delivering actions. (See Issue 7 - Enhancing Biodiversity and Earth Science.)

TABLE F - LEAP Area Species List

Species	Associated Habitat	National BAP - Priority species (with existing or proposed Action Plan)	National BAP - species of conservation concern	Regional BAP	County BAP	Agency Responsibility
Otter*	Rivers, streams & wetlands	●			●	Contact/Lead Partner
Water Vole	Rivers, streams & canals	●		●	●	Contact
Pipistrelle Bat*	Woodland, wetland & hedgerows	●		●		Delivering actions
Sand Martin	Rivers & earth/sand cliffs		●			Biodiversity commitment
Kingfisher	Rivers & streams		●			Biodiversity commitment
Curlew	Rhôs pasture, spring-line mire & moorland		●		●	Biodiversity commitment
Reed Bunting	Wet grassland & reedbed	●				Delivering action
Great Crested Newt	Lakes, ponds & backwaters	●		●		Delivering action
Atlantic Salmon*	Rivers & streams		●		●	Delivering action
River Lamprey	River & streams		●			Biodiversity commitment
Brook Lamprey	Rivers & streams		●			Biodiversity commitment
Sea Lamprey	Rivers, streams & estuaries		●			Biodiversity commitment
White-clawed Crayfish	Rivers & streams	●		●	●	Contact
Southern Damselfly	Wet heath & Rhôs pasture	●			●	Contact
Marsh Fritillary	Rhôs pasture & spring-line mire	●		●	●	Delivering action
Invertebrates of ERS	Riverine sediments	Specific species action plans developed under National BAP	●			Biodiversity commitment

* Specifically protected under the Habitats Directive

Glossary

Ammonia - A chemical found in water often as the result of discharge of sewage effluents. High levels of ammonia affect fisheries and abstractions for potable water supply.

Area of Outstanding Natural Beauty (AONB) - Designated by the Countryside Commission under the National Parks and Access to the Countryside Act 1942, to conserve and enhance the natural beauty of the landscape, mainly through planning controls.

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

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

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

Buffer zone - Strip of land 10-100 metres wide alongside rivers which is removed from intensive agricultural use.

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

Confluence - The point at which two rivers meet.

Demand management - Activities to manage the amount of water required from a source of supply; includes measures to control waste and/or discourage use.

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

Ecosystem - A functioning, interacting system composed of one or more living organisms and their effective environment, in a biological, chemical and physical sense.

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

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

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

Groundwater - Water contained in the void spaces in pervious rocks and also within the soil.

Hydrology - The study of water and its dynamics.

Integrated Pollution Control (IPC) - An approach to pollution control in the UK which takes account of potential effects upon all environmental media. Applies to prescribed processes and uses the principles of BATNEEC and BPEO.

Invertebrates - Animals without a backbone, e.g. insects, worms and spiders.

OFWAT - The Office of Water Services, the water industry regulator.

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

PAYBACK - A business environment association.

Q95 - The flow that on average is equalled or exceeded for 95% of the time.

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

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

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

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

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

Section 105 Survey - Section 105 of the Water Resources Act 1991 allows for Standards of Service Assets and Flood Risk Surveys.

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

Septic tank - An underground tank used to treat sewage from properties without mains drainage. The sewage is settled and some bacterial treatment occurs. Discharge of effluent is usually to a soakaway system.

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

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

Siltation - The deposit of material carried in suspension.

SSSI - Site of Special Scientific Interest. These are sites of national importance designated under the Wildlife & Countryside Act 1981 by English Nature in England.

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

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

Abbreviations and Units

Abbreviations

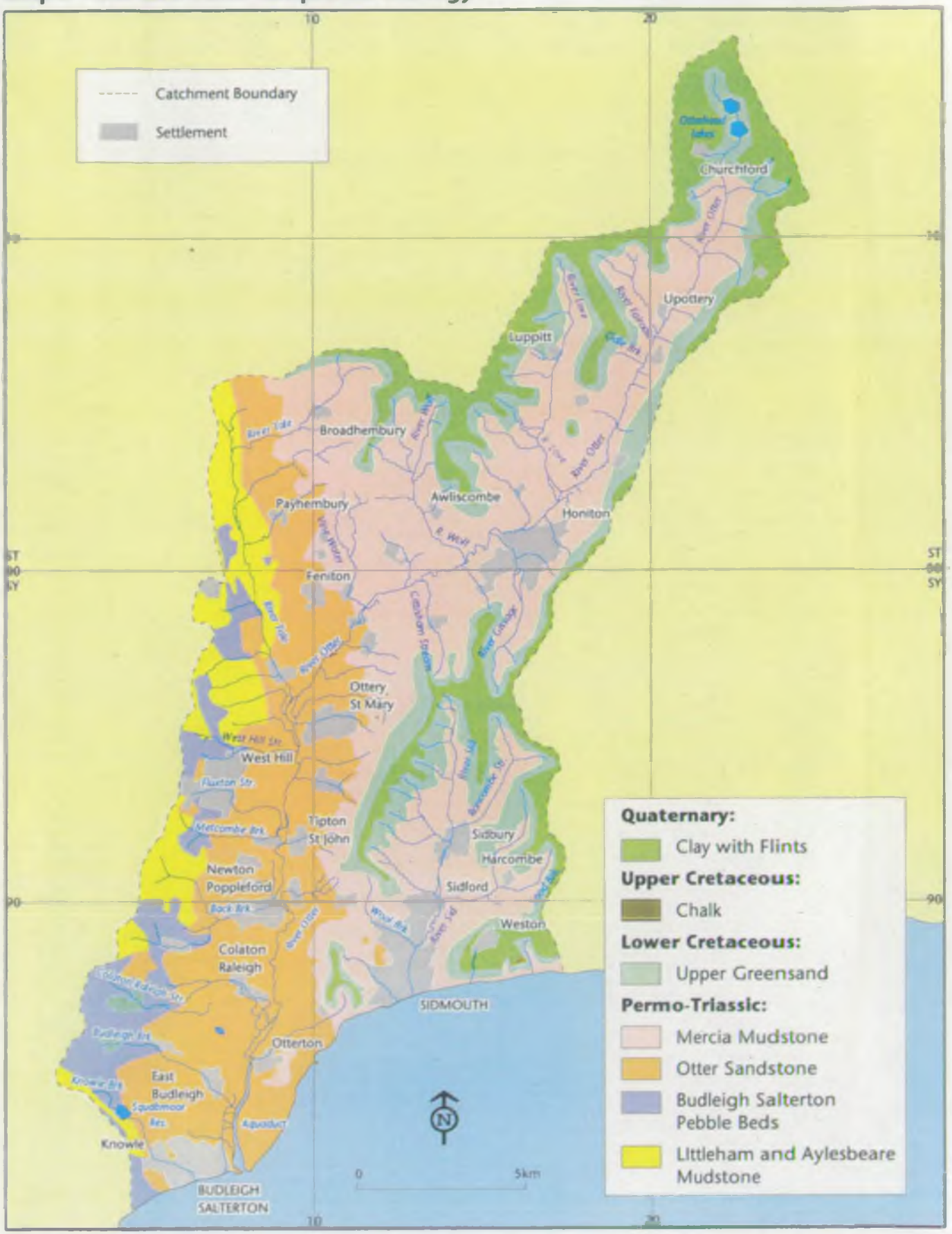
ADAS	Agricultural Development and Advisory Service
AMP	Asset Management Plan
AONB	Area of Outstanding Natural Beauty
BATNEEC	Best Available Technique Not Entailing Excessive Cost
BC	Butterfly Conservation
BCU	British Canoe Union
BOD	Biochemical Oxygen Demand
BOT	Barn Owl Trust
BPEO	Best Practicable Environmental Option
BTCV	British Trust for Conservation Volunteers
CLA	Country Landowners Association
CMP	Catchment Management Plan
DAS	Devon Archaeological Society
DCC	Devon County Council
DETR	Department of the Environment, Transport and the Regions (formerly Department of the Environment)
DSFC	Devon Sea Fisheries Committee
DWT	Devon Wildlife Trust
EDDC	East Devon District Council
EDCCS	East Devon Coast & Countryside Service
EH	English Heritage
EN	English Nature
ERS	Exposed Riverine Sediment
ESA	Environmentally Sensitive Area
FC	Forestry Commission
FRCA	Farming and Rural Conservation Agency
FWAG	Farming and Wildlife Advisory Group
GQA	General Quality Assessment
IPC	Integrated Pollution Control
LA21	Local Agency 21
LEAP	Local Environment Agency Plan
LPAs	Local Planning Authorities
MAFF	Ministry of Agriculture, Fisheries and Food
MDDC	Mid Devon District Council
NFU	National Farmers Union
NT	National Trust
NVZ	Nitrate Vulnerable Zone

OFWAT	Office of Water Services
OSMTC	Ottery St Mary Town Council
RIGS	Regionally Important Geological Site
RQO	River Quality Objective
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SMA	Sensitive Marine Area
SMP	Shoreline Management Plan
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
STWs	Sewage Treatment Works
SWWL	South West Water Ltd
TDBC	Taunton Deane Borough Council
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UWWTD	Urban Waste Water Treatment Directive
WRT	Westcountry Rivers Trust
WTS	Wild Trout Society

Units

°C	degrees centigrade
G	grams
Ha	hectare
Km	kilometres
km^2	square kilometres
L	litres
m^3/s	cumecs; cubic metres per second
Mg	milligrams
Ml	megalitre
Ml/d	megalitres per day
Mm	millimetre
ng/l	nanogram per litre
<	less than
>	greater than
≥	greater than or equal to
%	percentage

Map 7 - Sid and Otter Simplified Geology



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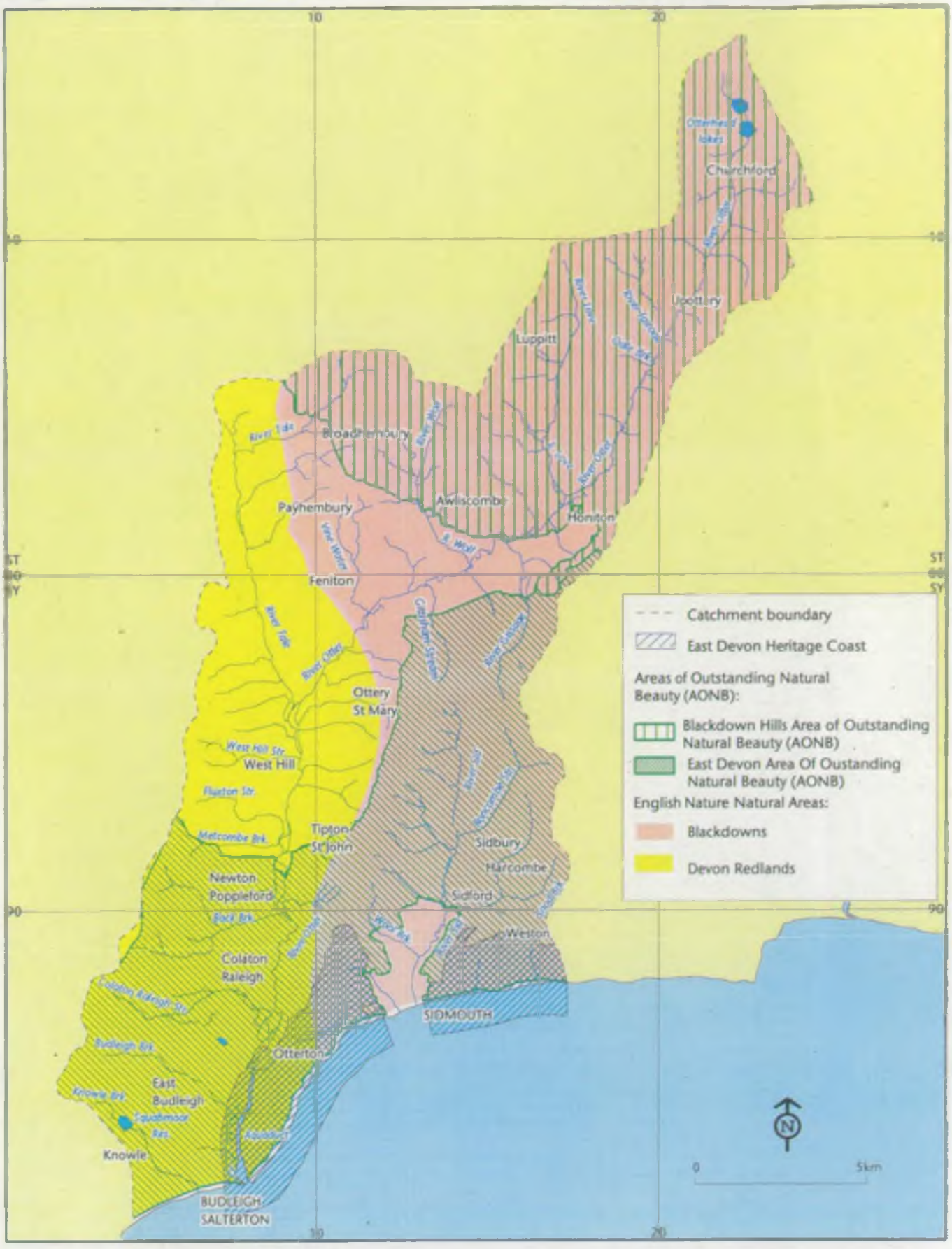
Map 5 - Landscape Areas



Map 6 -Recreation and Fisheries

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.

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