

# **local** environment agency plan

**SID & OTTER**

**CONSULTATION DRAFT**

**NOVEMBER 1999**



**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 Catchment contributes to the achievement of global sustainability in accordance with the spirit of the 1992 Rio de Janeiro 'Earth Summit' agreement.

The catchment 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 Consultation Draft sets out what we believe to be the environmental issues in the catchment, together with suggested actions both for ourselves and in partnership with others.

You are invited to read this draft, discuss it and then write to us with your views on how to improve it, so that when we publish it as our Action Plan we will have the best possible plan for a more environmentally sustainable catchment.

*Geoff Bateman*

**GEOFF BATEMAN**

Area Manager (Devon)



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## Your Views

We hope that this report will be read by everyone who has an interest in the environment of the Sid and Otter Catchment. Your views will help us finalise this Action Plan.

Have we identified all the problems in the catchment?

If not, we would like to know.

Are there any issues that you would like to highlight?

Are you able to help us in any way to resolve any of the issues highlighted? We are keen to receive your view and comments on this report. Please send your response by **29 February 2000** to:

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Alternatively you may contact us via E-mail at: **richard.parker@environment-agency.gov.uk**

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

Published November 1999



### Map 3 - Development/Waste Disposal



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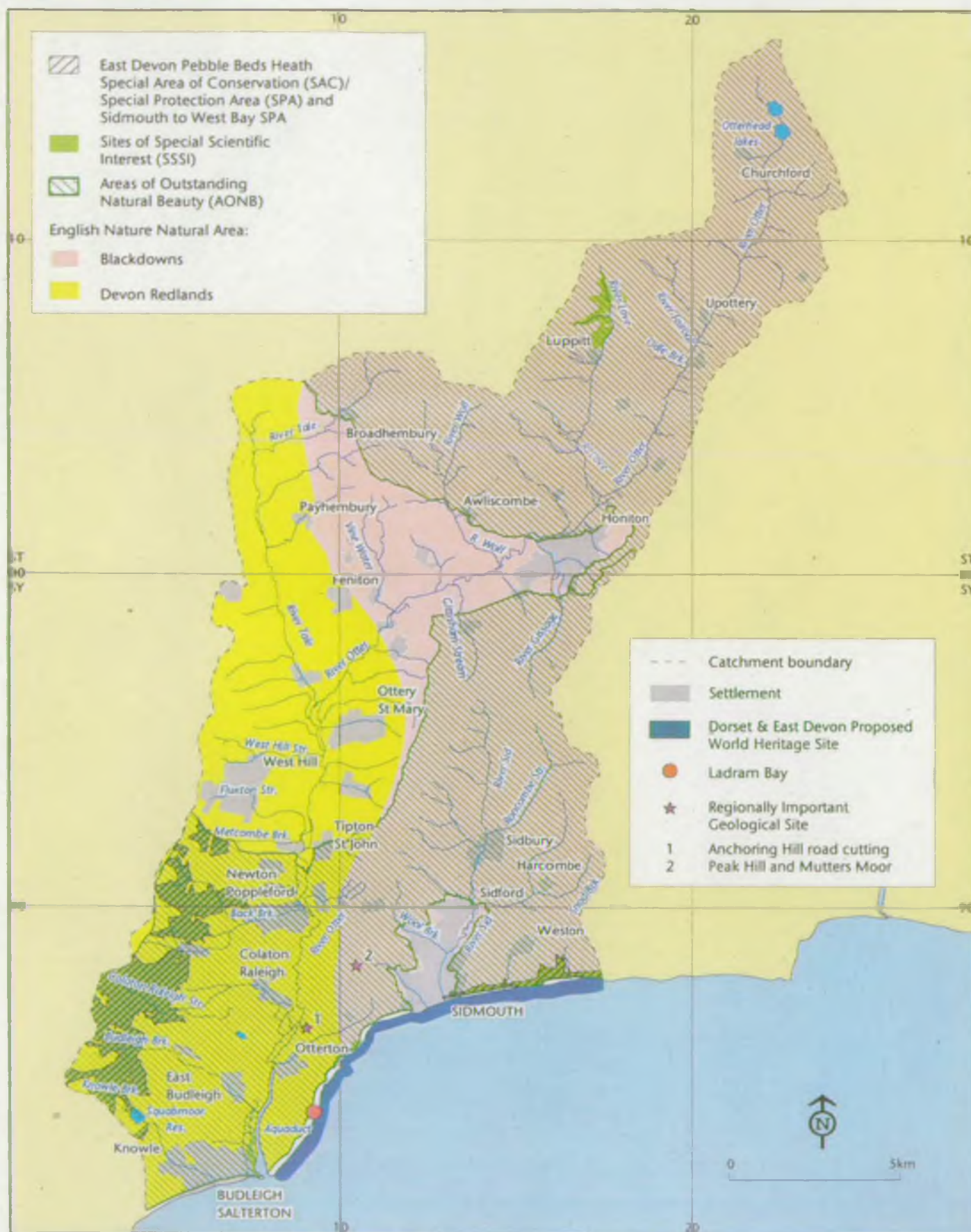
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## Map 4 - Conservation



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Map 6 - Sid and Otter Simplified Geology



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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"<sup>1</sup>.

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

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

### Our vision is:

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

### Our aims are:

- to achieve major and continuous improvements in the quality of air, land and water
- to encourage the conservation of natural resources, animals and plants
- to make the most of pollution control and river-basin management
- to provide effective defence and warning systems to protect people and property against flooding from rivers and the sea
- to reduce the amount of waste by encouraging people to re-use and recycle their waste
- to improve standards of waste disposal
- to manage water resources to achieve the proper balance between the country's needs and the environment
- to work with other organisations to reclaim contaminated land
- to improve and develop salmon and freshwater fisheries
- to 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 us 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 marks the start of a three-month period of public consultation. The purpose of the consultation period is to enable external organisations and the general public to put forward their views on the environmental issues which affect the catchment. At the end of the consultation period we will produce a Summary of Public Consultation which will give the results of the process and our response to the comments made.

**The Action Plan** - The Action Plan will take into account the results of consultation and will be published in Autumn 2000. It will set out actions that take account of costs and benefits, identifying timescales and partner organisations. Agreed actions will be incorporated into our annual business plans.

**Annual Reviews** - We will monitor implementation of the Action Plan and report on progress in a published Annual Review. The Annual Review will also identify any additional issues and actions needed to maintain progress in the light of any changes in the LEAP area, and also whether any actions need removing or amending where they are no longer appropriate. After five years, or sooner if required, we will carry out a major review of the progress we have made. At this stage we will produce a new LEAP Consultation Draft to reflect these changes to further improve the local environment.

*The Annual Review published in February 1999 is the last to be produced for the Catchment Management 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 be an opportunity to add new issues and actions as they may arise. **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.**

Many of the actions identified in the Catchment Management Plan (CMP) have been carried out and some of the original issues have been resolved. Details can be found in the Rivers Sid and Otter CMP Annual Reviews. Unresolved issues and incomplete actions have been transferred to this LEAP unless they now form part of our routine activities.

Some issues can be resolved through our statutory and routine work programme, others require action over and above our day-to-day business and funding for these is not generally certain; matched project funding is often required in these cases. Because of the short-term nature of our funding we can only firmly commit ourselves to action in the current and next financial years. Our priorities, policies and budget may alter so changing our action programme. These changes will be reflected at each Annual Review.

Some issues require solutions beyond the scope of our existing budgets or technology - they are nevertheless valid issues and earn their place in this plan, in the hope that a solution may be found in the future.



In most cases we show the anticipated cost against an action, but often we cannot give a definite cost because the action is part of an Area, Regional, National or Partnership Project. Therefore, the costs shown are indicative to give the reader an idea of the relative size and resource implications for each section.

### What we want from you

On 3 March 1999 we held a Community Consultation Day in the catchment which was attended by approximately 50 people. The aim of this event was to invite individuals and organisations who live and work in the catchment to give their views on what should go into this Plan.

In addition to this the LEAP Steering Group were also asked to highlight any issues of environmental concern to help us produce this Plan (see Section 5 – A Better Environment Through Partnership).

**We now want everyone with an interest in the environment of the Sid and Otter Catchment to read this Plan and write to us with answers to the following questions.**

- Is the information in the Plan accurate?
- Have we identified all the issues? If not, what are the new issues?
- Are there any other viable actions to resolve the issues?
- Can you or your organisation contribute partnership funding, technical advice or other resources to enable any environmental enhancement projects to go ahead?
- If you are part of an organisation working in, or using, the environment can you suggest ways of improving liaison with us?

## 2. The LEAP Area

### Key statistics for the Sid and Otter Catchment

|   |  |
|---|--|
| <b>Catchment Area</b>                                 | 283 km <sup>2</sup> approximately  |
| Length of river monitored for classification purposes | River Otter 73.5 km<br>River Sid 14.7 km   |
| Average annual rainfall                               | 1130 mm per annum over the Blackdown Hills<br>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 Catchment Area

The catchment covers an area of approximately 283 km<sup>2</sup> 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.

There are two river systems in the catchment. The River Otter rises on the Blackdowns 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 catchment is dominated by rural industries such as agriculture and forestry. Quarrying is also important, particularly in the south-east of the catchment. The main urban areas are Honiton, Sidmouth, Ottery St Mary and Budleigh Salterton, with numerous smaller settlements throughout. In the Local Plan<sup>2</sup> the main area for housing provision is located at Honiton. Communications in the catchment are generally good. The A30/A303 which is the main east/west route into Devon runs through the catchment as does the main rail link between Exeter and London.

Recreation in the catchment 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 catchment 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 catchment several kilometres inland.

### Geology & Soil

The geology of the catchment 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 catchment 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 catchment is underlain by Permo-Triassic deposits, the oldest of which is the Budleigh Salterton Pebble Beds which outcrop to the west of the catchment. The East Devon Pebble Bed Heaths which are of great ecological value have formed over this geological deposit.

Overlying the Pebble Beds and outcropping over much of the southern part of the catchment 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 Catchment 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 Pebble Beds 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 Pebble Beds 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 catchment. 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 catchment. 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 catchment. Headwater tributaries in both 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.

Due to 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<sup>3</sup>/s and a Q95 (the flow exceeded for 95% of the time, on average) of 0.134 m<sup>3</sup>/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 1963-1998 shows a mean daily flow of 3.106 m<sup>3</sup>/s and a measured Q95 of 0.934 m<sup>3</sup>/s. The Q95 flow represents 30% of the mean daily flow. There is a large difference between the maximum daily mean flow recorded at Dotton of 61.881 m<sup>3</sup>/s recorded on 27/12/79 and the instantaneous flow of 347.013 m<sup>3</sup>/s recorded on 10/7/68.

**Water Quality** - We monitor 88.2 km of rivers in the Sid and Otter Catchment. 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 (see Section 3). We are due to carry out an assessment of the biological quality in 2000.



## Wildlife - Habitats & Species

The Sid and Otter Catchment contains a wide variety of habitats and species of high conservation value. The south-west of the catchment is dominated by the East Devon Pebblebed Heaths, an area of international 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 the traditional farming practices and financial incentives are available through the Blackdown Hills Environmentally Sensitive Area scheme to encourage the continuation of traditional low-intensity farming practices (see Issue 8 - Enhancing Biodiversity).

## Archaeology & Heritage

The area surrounding the River Sid and Otter has been subject to human activity since the Paleolithic period and there is evidence of Paleolithic, Mesolithic and Neolithic occupation in coastal and inland areas. However, the earliest major surviving evidence of human activity in the area are the Bronze Age barrows on the high ground, found in their greatest concentration in Broad Down cemetery situated between Gittisham and Farway 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 Dumptdon. Whilst not all sites were ever occupied during the Iron Age, occupation at others such as Hembury continued 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. It is likely that 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.



## Landscape

The landscape of the catchment 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 catchment, 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. The designation is recognised by local authorities within structure and local plans and sites are therefore protected through the development control process. The East Devon coastline east of Budleigh Salterton is also recognised for its natural beauty and is designated as a Heritage Coast. Again protection is afforded through structure and local plans.

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 Catchment lies within three of these Natural Areas, namely the Devon Redlands, the Blackdowns and Lyme Bay Maritime.

The whole coastline of the catchment 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 catchment are the eroding Triassic Sandstone outcrops at Budleigh Salterton and Ladram Bay.

### 3. Targets for Water Quality

#### Managing Water Quality

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). 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 **National Water Council** 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 may also 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 Catchment 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.

**Table B - RQO Classification for Catchment (1998)**

| River           | Stretch                                   | RQO | 1998 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                        |               |                               |



| River                                   | Stretch                                  | RQO | 1998<br>Compliance<br>with RQO | Long<br>Term<br>RQO | Compliance<br>with Long<br>Term RQO |
|---|--|-----|--------------------------------|---------------------|-------------------------------------|
| Tale<br>Gissage<br>Love<br>Knowle Brook | 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   | C                              |                     |                                     |
|   | Source - Otter confluence                | 2   | C                              |                     |                                     |
|   | Source - Otter confluence                | 1   | M                              |                     |                                     |
|   | Source - Otter confluence                | 2   | C                              | 1                   | S                                   |
|   | Squabmoor Reservoir - Normal Tidal Limit | 2   | U                              | 1                   | U                                   |

C = Compliant

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"<sup>3</sup> 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 catchment we have identified a series of environmental issues and proposed actions, upon which we are now seeking 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 Plan Action Plan. 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.



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

Improvements to Sidmouth STW are being carried out under AMP2 to meet the requirements of the EC Urban Waste Water Treatment Directive<sup>6</sup> (UWWTD) and EC Bathing Waters Directive<sup>5</sup>. These improvements, which are required by December 2000, include the provision of secondary and ultraviolet (UV) treatment (see Issue 2 – Impact of Development).

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

The STWs in the Sid and Otter Catchment area where we expect improvements 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  | 2005   |
| Sidmouth     | Lyme Bay        | Outfall improvement      | UWWTD   | 2005   |
| Otterton     | Lyme Bay        | UV treatment             | Bathing Waters Directive<br>(achieving guideline compliance at designated bathing waters) | 2005   |

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<sup>4</sup>. 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 no applications for first time sewerage in the Sid and Otter Catchment.



**RQO non-compliance** - The River Otter below Ottery St Mary STW to Tipton St John marginally failed to meet its RQO of RE2 in 1998 as a result of elevated BOD. This was due to a single high result. The failing sample was taken following a thunderstorm with very heavy rainfall when river flows were elevated. Samples taken upstream of Tipton St John on the same date show that BOD was substantially elevated along the river and that the cause was not the two STWs serving Ottery St Mary. However, operation of the storm overflow at Ottery St Mary (Fluxton) STW does appear to have exacerbated poor water quality in the watercourse. It has not been possible to trace the source of this elevated BOD.

The River Otter from Hoemore Farm to Rawridge significantly failed to meet its long term RQO of RE1 as a result of elevated BOD occurring on two occasions (see Issue 5 – Impact of Farming).

**Impact on biological quality** - The biological quality of the watercourses in the Sid and Otter Catchment is good, except at Taleford where the quality has declined. This is believed to be due to organic pollution from septic tank discharges. An investigation of the whole of the River Tale will be undertaken as part of the GQA survey to provide an assessment of the biological quality, and establish any potential for improvement.

There have been historical problems 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 catchment identified under the EC Bathing Waters Directive<sup>5</sup> as requiring compliance with the mandatory standards of water quality set out in the Directive (see Appendix). 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 have met the mandatory standards for the Directive<sup>5</sup> since 1995.

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<sup>5</sup>, 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<sup>5</sup> at Sidmouth Town in future.

**Aesthetic Impact** - Although the water quality at Sidmouth is compliant with the EC Bathing Waters Directive<sup>5</sup>, 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 are developing a national strategy for dealing with eutrophication, which will focus on a partnership approach to the management of the problem.

The Urban Waste Treatment Directive<sup>6</sup> 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 sensitive based on studies undertaken by ourselves. If sites are designated as sensitive, 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.



**Table 1**      **Impact of effluent discharges**

| Actions |  | Action By<br>Lead/Other | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|--|-------------------------|--------------------------|----------------|----|----|----|----|
|         |  |                         |                          | 00             | 01 | 02 | 03 | 04 |
| a       | Complete improvements to Sidmouth STW under AMP2 and AMP3.<br>  | SWWL, Agency            | n/a                      | ●              |    |    |    |    |
| b       | Pursue improvements to Otterton STW and Churchinford STW under AMP3.<br>   | SWWL, Agency            | n/a                      |                | ●  | ●  | ●  | ●  |
| c       | Review results of monitoring of the River Otter at Tipton St John to see if RQO failure recurs.<br>                              | Agency                  | <1k                      | ●              |    |    |    |    |
| d       | Carry out an investigation to assess the biological quality of the River Tale and identify potential areas for improvement.<br>  | Agency                  | unknown                  | ●              | ●  |    |    |    |

## Issue 2: Impact of Development

Development within the catchment 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.

We welcome early contact by the local planning authorities on development plan preparation and provide support, information and guidance where appropriate. We also welcome informal approaches by local planning authorities and developers to discuss the potential impact of a proposal.

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 activities.

Increased development can put pressure on our water resources and sewage treatment works which can lead to failure of water quality targets (see Issue 1 – Impact of Effluent Disposal), 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 does occur, appropriate mitigating measures are taken.

The Devon County Structure Plan First Review Proposed Modifications to Deposit Plan July 1998, proposes the development of 75,800 dwellings in Devon by 2011. One of the policies of the Structure Plan (S6), which has to be reflected in all Local Plans<sup>2</sup>, is that: "Planning Authorities should not provide for development unless the infrastructure which is directly required to service the development can be made available at the appropriate time. In determining the location of development, the adequacy of infrastructure will be taken into account. Provision for new development will be made where the infrastructure required to service it is in place or will be provided in phase with development in an environmentally acceptable way. Developers will be expected to contribute to, or bear the full cost of, such new or improved infrastructure and facilities where it is appropriate for them to do so".

**Road Improvements** - The Honiton to Exeter A30 road improvements have been under construction for approximately five years. We have the responsibility to consent a range of proposed works to watercourses under the terms of the Water Resources Act 1991 and Land Drainage Act 1991. We received the first formal applications for works in watercourses for the road construction in 1994, and since that date in excess of 60 applications for the piping of watercourses have received approval. In addition, the three major river crossings along the route, the Rivers Otter, Tale and Clyst, have all been consented following detailed hydraulic and hydrological study by both the road builders and ourselves. Where appropriate, much effort has gone into securing watercourse improvements and habitat enhancement that will benefit a range of interests such as Flood Defence, Fisheries and Conservation. This work is still ongoing. We have been working to ensure rivers and streams have not been adversely affected by the works. In the forthcoming year it is anticipated that the road will become fully open to the public. The project is due for completion in the year 2000 by which time it is anticipated that all of our outstanding regulatory work associated with the road will be complete.

The A30 improvements have presented new problems for otters as the works have created a new physical barrier to their movement. We worked closely with the contractor and their consultants to ensure that nine otter underpasses were constructed along the length of the new road. Roadside fencing will also be erected in association with these underpasses to ensure that access to the road is restricted in areas where otters might attempt to cross. Although a number of difficulties were experienced in delivering these underpasses, we believe that they should, in the main, provide safe passage for otters and significantly reduce the risk of road casualties. Underpasses have also been included for badgers (see Issue 8 – Enhancing Biodiversity and Issue 10 – Management of Our Freshwater Fisheries).



**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 one result linked to heavy rainfall is believed to be the result of urban runoff. The cause of the other elevated result is unknown.

**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) are required to enable the sewage works to be able to manage the increased loading. Improvements to the sewage works at Churchinford, where a small industrial park and housing development has been proposed, have been sought under AMP3 (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.

**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 catchment 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. Two sites in the catchment at Ottery St Mary and Honiton have already been visited. Three further sites still need risk assessments to be carried out.

**Honiton Sawmills** - The site of the Honiton Sawmills is being redeveloped for residential housing. The results of soil samples indicate that the use of timber treatment compounds at the sawmill have resulted in the land becoming contaminated and significantly elevated levels of chromium, copper and arsenic have been detected on the site. Prior to development taking place contaminated material is to be removed from the site, and the developers are working with East Devon District Council as the lead regulatory body and ourselves to ensure that the site is remediated to a standard which protects public health and the environment.

**Demand for water** - (See Issue 7 – 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 have been raised with regard to the siting of the new sewage treatment works for Sidmouth. These concerns relate to the proximity of the works to the nearby boreholes. In response to concerns about its proximity to the works, South West Water have 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** - (also see Issue 3 – Flooding at Ottery St Mary). Flooding can happen very quickly, often with little warning. Whilst the risk of flooding can be reduced by defences, floods are a 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.

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<sup>7</sup>. Copies of these were provided to East Devon District Council in 1997.

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 are concentrated in a specific area and involve a greater amount of hydraulic modelling and investigation. Because the 'Level B' studies are more closely related to development, closer liaison and consultation with the planning authorities will be required.

A pre-feasibility study was carried out for Newton Poppleford, but upon completion of the study it was decided the cost outweighed the benefit of the scheme and it has now been dropped from the capital programme. The scheme for Otterton is in the capital programme to be carried out during 2003/2004. However, due 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 (see Issue 3 – Flooding at Ottery St Mary).



**Blackhill Quarry** - Bardon Aggregates have quarried within the Budleigh Salterton Pebble Beds 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 SAC, SPA and SSSI. Because of the conservation importance of this site, the permission is to be revoked in line with European legislation and compensation paid to the owners.

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 SAC/SPA. A new planning application has been submitted and work is currently underway to determine the likely impacts from this new application. We know for example 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.




**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 catchment and implement mitigation and enhancement measures where appropriate.

The catchment 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 catchment. 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 catchment. 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.

**Table 2**                      **Impact of development**

| Actions |  | Action By<br>Lead/Other | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|--|-------------------------|--------------------------|----------------|----|----|----|----|
|         |  |                         |                          | 00             | 01 | 02 | 03 | 04 |
| a       | Review results of monitoring of the River Gissage to see if RQO failure recurs.  | Agency                  | <1k                      | ●              |    |    |    |    |
|         |   |                         |                          |                |    |    |    |    |
| b       | Conduct risk assessment at industrial sites at Colaton Raleigh, Talewater and Sidmouth and carry out remediation if necessary. | Agency                  | unknown                  | ●              | ●  | ●  | ●  |    |
|         |   |                         |                          |                |    |    |    |    |



| Actions |  | Action By<br>Lead/Other                   | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|--|---|--------------------------|----------------|----|----|----|----|
|         |  |   |                          | 00             | 01 | 02 | 03 | 04 |
| c       | Liaise with EDDC to ensure effective remediation of Honiton sawmills site prior to development.<br> | EDDC, Developers,<br>Agency               | <1k                      | ●              |    |    |    |    |
| d       | Carry out flood defence work at Otterton.<br>   | Agency                                    | 50k                      |                |    | ●  | ●  |    |
| e       | Support assessment of archaeological and historic value of catchment.<br>                           | DCC, DAS, Agency,<br>NT, EH, EDDC, Others | unknown                  | ●              | ●  | ●  | ●  | ●  |

### Issue 3: Flooding at Ottery St Mary

**Bye Report and Agriculture Select Committee** - The severe flooding which affected large areas of central and eastern England and parts of Wales over the Easter weekend 1998 led to calls for the Environment Agency to take urgent action and to learn the wider lessons from this extreme event.

To help achieve this we called for an independent investigation that would lay out plainly the facts about the floods and our handling of them. This investigation was carried out by Peter Bye and his technical advisor Dr Michael Homer and the report is known as the Bye report. In a Parliamentary Statement on 20 October 1998 on the Bye Report by the Minister Elliot Morley we were given clear targets to achieve a seamless and integrated service of flood forecasting, warning and response by April 2000. To achieve this we were required to undertake a thorough review of the whole system by mid-1999 to ensure that we are focused to deliver the required service, that management arrangements make this possible and that there are clear lines of accountability and responsibility.

Having considered the Bye Report, we have taken due regard of the Minister's statement, compared the needs of the Report with the findings of the Agriculture Select Committee on Flood and Coastal Defence 30 July 1998, considered comments from MAFF and have drawn up a comprehensive action plan.

The action plan is being implemented nationally and includes the following actions:

- Review of flood warning dissemination plans and major incidents plans
- Review current supervisory duties and develop new approach to their use.
- Review and publish consistent flood risk maps for use in regulating development.
- Review emergency response arrangements with local authorities and carry out joint exercises using new arrangements. This must include clear understanding of the roles of all organisations involved.
- Introduce improvements in our network of telemetered river flow monitoring.
- Carry out a complete visual survey of all flood defences including main river, ordinary watercourses, tidal and sea defences and in future carry out regular updates.
- Revise our National Flood Warning Strategy and establish a national flood warning centre.
- Review ways of warning the public, improve provision of data from telemetry systems and its use in giving warnings.
- Target flood warning communications at vulnerable temporary locations such as caravan and camping sites.
- Work with government to review research into the impact of climate change on flood frequency.

In general, the South West region is well advanced in dealing with the issues raised in the actions listed above. However, a very large additional workload is still required to meet these actions within the time allowed.

**Flooding at Ottery** – 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, however, it may not be possible to warn for flooding from surface water runoff.

We carried out a pre-feasibility study into the problem of flooding at Ottery St Mary to find out if an additional scheme was possible, and it concluded that it was. As a consequence a scheme has been put into the medium-term plan for 2003/04. Some initial work to the 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 to flood the industrial area at the lower end of the town. In the meantime, we are investigating carrying out improvements to the overflow weir on the leat, we are also carrying out a soil survey in the catchment to see if improvements to runoff can be made.

We have continued to investigate further improvements to the Furze Brook confluence with the Mill Leat at the Land of Canaan car park and design work is well advanced to ensure that flood water has a path to the River Otter upstream of the Tumbling Weir.







Meetings have taken place between the ourselves and a number of the affected businesses and private residents who were flooded in both 1997 and 1998 and advice has been given on measures to be taken 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. We have also been in touch with Ottery St Mary Town Council about the provision of a central sandbag store close to the properties at risk and they are pursuing this.

Devon County Council have been maintaining the Brook Street culvert and provided a trash screen at its entrance as well as maintaining the highway drains and ditches. They 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. Initial results recommend a further detailed study to follow which is currently being undertaken.

**Table 3**                      **Flooding at Ottery St Mary**

| Actions |   | Action By<br>Lead/Other     | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|---|-----------------------------|--------------------------|----------------|----|----|----|----|
|         |   |                             |                          | 00             | 01 | 02 | 03 | 04 |
| a       | Carry out additional flood defence work at at Ottery St Mary.<br>  | Agency                      | unknown                  |                |    |    | ●  | ●  |
| b       | Provide enhancements to the River Otter Flood Alleviation Scheme at the Land of Canaan car park.<br>   | Agency                      | 50k                      | ●              |    |    |    |    |
| c       | Assess results following investigation into the runoff from East Hill.<br>  | EDDC, DCC, OSMTC,<br>Agency | n/a                      | ●              |    |    |    |    |

#### Issue 4: 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. This is not currently a major concern in the Sid and Otter catchment.

**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 2000.

The Producer Responsibility Obligations (Packaging Waste) Regulations 1997 came into force in March 1997. 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. There are currently no individual companies in the Sid and Otter catchment which are obligated under the regulations. However chains of companies, such as supermarkets, which may have branches in the catchment will be obligated but are registered from their head offices under a group registration.







**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 information provided by Devon County Council and carried out by the Agency will be made to assess the effectiveness of the treatment system.

**Disposal of waste oil** - Oil accounts for one quarter of all pollution incidents in 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 recycling facilities within the catchment area which can be used by the general public. Provision of civic amenity sites is a responsibility of the District Council. We will encourage the provision of disposal facilities where appropriate.



**Table 4 Waste Management**

|   | Actions  | Action By<br>Lead/Other        | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---|--|--------------------------------|--------------------------|----------------|----|----|----|----|
|   |  |                                |                          | 00             | 01 | 02 | 03 | 04 |
| a | Pursue Waste Minimisation Schemes in East Devon with the support of PAYBACK.<br>  | Agency,<br>PAYBACK             | <1k                      | ●              | ●  |    |    |    |
| b | Co-operate with Devon County Council to undertake a risk assessment of the closed landfill sites in the catchment.<br>  | DCC,<br>Agency                 | n/a                      | ●              | ●  |    |    |    |
| c | Review monitoring information from Knapps Copse closed landfill site to assess effectiveness of the treatment system.<br>  | Agency                         | <1k                      | ●              | ●  |    |    |    |
| d | Encourage the provision of waste oil disposal facilities by the Local Authorities.<br>                                     | Agency,<br>EDDC,<br>MDDC, TDBC | <1k                      | ●              | ●  | ●  | ●  | ●  |

## Issue 5: Impact of Farming

Farming is the major land use in the catchment 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 catchment 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 catchment has increased, there has been a decline in the number of larger holdings.

**Table C – Agricultural Land Use in the Catchment**

|                 | 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<sup>a</sup>)

**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<sup>s</sup>)

Over the last ten years 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, which can cause pollution during periods of heavy rain. During the past ten years, we have visited all the farms in the Otter valley providing advice on good practice and pollution prevention.

The Sid and Otter Catchment 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** - The River Otter from Hoemore Farm to Rawridge significantly failed to meet its long term RQO of RE1 as a result of elevated BOD occurring on two occasions. We identified a potential source of pollution on a farm adjacent to this stretch of river, which may have contributed to elevated BOD in the past. Remedial action has been taken and there do not appear to be any further problems at this site. We also worked with householders in Rawridge to stop pollution from septic tanks which was impacting on the watercourse. Both failing samples also show elevated ammonia levels and are rainfall related, indicating that the most likely cause of this poor water quality is diffuse pollution.

The River Otter from Rawridge to Clapperlane Bridge significantly failed to comply with the long term RQO of RE1 as a result of elevated BOD. An investigation in 1998 found a farm discharge to the watercourse and improvements were made in the summer of 1998. This site is also affected by urban runoff from Honiton. The monitoring site for this stretch is not considered representative of the whole stretch as cattle can access the watercourse immediately upstream. A more suitable site would be upstream of the cattle drinking point.

The River Love from source to Otter confluence significantly failed to meet its long term RQO of RE1 as a result of a single elevated BOD sample on 24 November 1998. As this sample was taken following a period of heavy rain, and ammonia levels were also elevated, the most likely cause of poor water quality is diffuse agricultural pollution.



**Pesticides** - The area of maize grown in the catchment, 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. A persistent herbicide, Atrazine, is used for controlling weeds in maize fields and low concentrations have been detected in the groundwater of some boreholes used for public water supplies. Atrazine has been banned for concentrated use as a weedkiller, e.g. besides roads and railways.

We have visited over fifty farms providing advice on the use of pesticides, which has resulted in lower concentrations of Atrazine being used. Alternatives are generally not considered to be as effective, but some farms are now using substitute methods for controlling weeds. 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 will continue to review the levels of Atrazine in the catchment, and encourage farmers to use alternative methods of weed control where possible. 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<sup>9</sup>. 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 groundwater** - Nitrate pollution of water can reduce the quality of drinking water supplies and disturb the balance of plants and animals. 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 such areas, known as "Nitrate Vulnerable Zones" (NVZs) have been designated in England and Wales. NVZs are subject to four-yearly reviews, the next of which is due in 2001. There is at present one large NVZ in the catchment in the area around Colaton Raleigh.

The rules set by the Regulations are known as Action Programme Measures, and have been applicable since 19 December 1998. They require that farmers within NVZs manage fertilisers and manures carefully to reduce the risk of pollution. The Measures address record-keeping, crop requirements for fertilisers, spreading controls and storage, and restrict when and how much fertiliser can be applied. The Environment Agency is responsible for assessing farmers' compliance with the regulations, which will be carried out by prearranged farm visits as part of our routine activities.

**Siltation** - Changes in farming practices have led to increased silt input into rivers. Farming practices, such as growing maize and pig-rearing in the open, leave land bare during the winter, which leads to silt washing off the fields into watercourses (see Issues 6 – Catchment Erosion and Issue 10 Management of Our Freshwater Fisheries). One area of concern is the stretch from Ottery St Mary down to Budleigh Salterton where the geology produces more mobile soil types and inappropriate farming practices can lead to excessive soil runoff.










Buffer zones, which are uncultivated strips of land created between farmland and riverbanks, can be used to achieve a range of benefits. They can provide a valuable wildlife habitat, help stabilise riverbanks and reduce soil and nitrate loss from farmland entering rivers following periods of heavy rain.

**ESA/Countryside Stewardship schemes** - The Blackdown Hills in the north of the catchment have been designated an Environmentally Sensitive Area (ESA) under a scheme run by MAFF. The ESA scheme has been designed to maintain and enhance the landscape, wildlife and historic value of an area by encouraging beneficial farming practices with the emphasis on biodiversity. Farmers who 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 with other conservation bodies. The scheme was recently subject to a five year policy review (1999 – 2004) on which we were consulted.

The Countryside Stewardship scheme is also operated by MAFF and 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 catchment, 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.

**Table 5 . Impact of Farming**

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



## Issue 6: Catchment Erosion

Riverbank erosion is evident along both the Rivers Sid and Otter. The strong geological influence of the local sandstone is particularly evident along much of the length of the River Otter where the sandy banks often lack cohesion and are easily eroded. This is a natural process, which is important in creating new habitats for wildlife, such as gravel/sand deposits and eroding banks, which are utilised by nesting birds and specialist bees and wasps (see Issue 8 – Enhancing Biodiversity). In some circumstances however, bank erosion can destabilise structures within and adjacent to rivers such as weirs, property, roads, footpaths and farm buildings (where there can be serious implications for water quality). We will endeavour to strike an appropriate balance, when consenting or undertaking bank erosion control works. In cases where erosion control is required, we will encourage the use of soft engineering techniques (e.g. using willow), where appropriate, in preference to the use of hard solutions such as blockstone. Soft engineering benefits wildlife and absorbs erosive forces, whereas hard engineering can be locally effective but can often redirect erosion problems elsewhere.




In recent years there has been a decline in general riverbank management due in part to rising labour costs and the advent of a wide range of machinery capable of undertaking work which was previously manual in nature. Bankside trees which in the past would have been managed by coppicing or pollarding, have developed full crowns and have been 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. A collaborative project initiated by the East Devon Coast & Countryside Service and Clinton Devon Estates has been recently undertaken using willow to protect these eroding banks. In consultation with the Agency, which also provided funding, a combination of faggots and spiling were used along a 200m stretch of bank. The project has thus far proved effective in providing robust protection.

Many parts of the Otter catchment suffer from bank erosion which has been exacerbated by agricultural practices. Livestock physically erode the banks at crossing and watering points, and also graze away vegetation which is important in providing bank cohesion and stability. Ploughing too close to the riverbank can also contribute to erosion. Excessive erosion contributes to a high sediment loading in the river which in turn results in siltation of spawning areas. This 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 catchment, 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 loss can, to some extent, also be redressed by the establishment of buffer zones to encourage natural regeneration. The introduction of riverbank management by riparian owners should be encouraged in addition to bankside fencing and planting in appropriate locations<sup>10</sup>. 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.

We have in the past been keen to promote the use of bankside fencing in areas of the catchment to help stabilise riverbanks. This scheme has had limited success due to lack of funding and the unwillingness of farmers and landowners to fence off access to rivers (see Issue 5 – Impact of Farming and Issue 10 – Management of our Freshwater Fisheries).

**Table 6 Catchment erosion**

| Actions   | Action By Lead/Other                     | Cost to Agency (£) | Financial Year |    |    |    |    |
|---|--|--------------------|----------------|----|----|----|----|
|   |  |                    | 00             | 01 | 02 | 03 | 04 |
| <b>a</b> Encourage riparian owners to provide suitable conditions for development of more extensive marginal vegetation.<br>   | Agency                                   | unknown            | ●              | ●  | ●  | ●  | ●  |
| <b>b</b> Where appropriate, promote bankside fencing schemes to limit bank erosion and reduce sediment input to the river.<br> | Agency, Landowners, Farmers, MAFF        | unknown            | ●              | ●  | ●  | ●  | ●  |
| <b>c</b> Promote formal stock watering points and buffer zones and encourage the planting of appropriate bankside trees.<br>   | Farmers, River Otter Association, Agency | <1k                | ●              | ●  | ●  | ●  | ●  |



## Issue 7: Managing our Water Resources

We 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.

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.

**Managing Current Demand** - To manage water resources we issue abstraction licences for specific volumes of water from identified sites. The abstraction licence may include conditions to control abstraction where environmental damage is likely. The abstraction licensing system for England and Wales was reviewed during 1997/98 and a number of changes were proposed and consulted on. Taking Water Responsibly, a paper detailing the Government decisions following consultation, was published in March 1999 and is available from the Department of the Environment, Transport and the Regions (DETR). The full nature and impact of changes will not be confirmed until the final papers are approved by Parliament. We will need to implement any changes that arise from this process and amend licensing policies as appropriate. Whilst we do not propose specific actions at present, they will be added once changes to licensing procedures are known.

**Public Water Supply** - We are not responsible for the supply of water to households and industry but have a central role in water resources planning in England and Wales. We contribute to the protection of the environment by looking at current water use in the home and at work and the water that is available for these uses without damaging the environment. This may involve correcting any imbalances or over-abstraction. We continue to protect the environment by comparing future demands for water with water availability and balancing the two in an environmentally sustainable manner. To achieve this we work closely with the water companies requiring them to submit detailed Water Resource Plans.

Water companies use areas known as Resource Zones in order to help manage the way in which they supply water. Most of this catchment is part of the SWWL Wimbleball Resource Zone which supplies water to East Devon. This Resource Zone is supplied primarily by Wimbleball reservoir supported by a number of other smaller sources in the area.

**Meeting Future Demand** - Water resource planning is carried out over large geographic areas often extending over several LEAP boundaries. It is therefore difficult to obtain data for a specific LEAP and the precise impact of new development on water resources in the plan area can be difficult to predict. 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.

Demand management involves a number of different initiatives including metering. Meters are installed in all new domestic properties connected to the water company supply and South West Water Ltd and Wessex Water Services Ltd (WWSL) offer their domestic customers the following options:

SWWL – to have their home metered at a subsidised price between now and April 2000. After this they will be able to have a meter fitted free of charge. People who have a garden sprinkler are asked to register it with the company on the understanding that they may be metered at a later date.

WWSL – to have their home metered free of charge. WWSL also operate a tariff scheme which metered customers who have a low water use can opt for to make further financial savings. People who have a garden sprinkler are asked to register it with the company and pay a sprinkler licence but they are not required to have a meter.

The Water Companies have a duty to promote efficient use of water and we expect them to pursue this duty with imagination and vigour. SWWL and WWSL have both published water efficiency plans which contain strategies to deliver water savings by the customer.



Extra resources can be obtained from making savings through reducing leakage. The Water Companies are now set leakage targets each year by the Government's financial regulator OFWAT. They are bound to meeting these but can set lower targets if they wish.

Both SWWL and WWSL achieved their targets in 97/98 and are working towards achieving the tougher targets which have been set for 1999/2000.

**Promotion of water-saving measures** - The average family uses approximately 146 cubic meters (32,000 gallons) of water per year and within the home there are many opportunities to help reduce this figure. There are also many opportunities for water saving in the workplace. A wide range of water-saving measures are detailed in the document "Saving Water - on the Right Tracks 2", which can be obtained from us free of charge.






**Non-public water supply abstractions and demand** - It is possible that there may be local environmental problems associated with full 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 will be assessed through abstraction licensing procedures. These take into account the justified need for water and the demonstrated extent of the provision of water-efficiency measures within the proposals.

**Water resource licensing** - We licence proposals to abstract water from the environment under various national legislation some of which is required under European law. A review of the impact of particular abstraction licences in the East Devon Pebble Beds Heath SSSI has been undertaken by us as required under the National Habitats Directive Regulations, 1994<sup>11</sup> and this has revealed a number of licences which may need revising (see Issue 2 – Impact of Development and Issue 8 – Enhancing Biodiversity).

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. This 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 uncertainty remains about the likely impact of the cumulative groundwater abstractions on fisheries and macro-invertebrates.

The study's key recommendation was that we review the capability of SWWL to take up in full its licensed groundwater resource in the catchment. Plans are in hand to do this as part of a revised strategy for licensing abstractions in the Otter catchment, mindful of the conclusions of the Otter Low Flow Study and future legislative changes.

**Table 7 Managing our water resources**

| Actions |   | Action By<br>Lead/Other | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|---|-------------------------|--------------------------|----------------|----|----|----|----|
|         |   |                         |                          | 00             | 01 | 02 | 03 | 04 |
| a       | Revise Regional Water Resources Development Strategy.<br>  | Agency                  | unknown                  | ●              |    |    |    |    |
| b       | Complete Stage II of the Habitats Review on East Devon Pebble Bed Heath, (Priority SAC and SPA site), assessing which, if any, licences are having a significant effect on the site.<br>  | Agency                  | 3k                       | ●              |    |    |    |    |
| c       | Develop an approach to abstraction licensing in the Otter Valley in accordance with conclusions of the Otter Low Flow Study.<br>    | Agency                  | unknown                  | ●              | ●  |    |    |    |

NB. It should be noted that 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 8: Enhancing Biodiversity

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 the UK Government. The convention requires each country to 'develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity'. Since the UK signed the Biodiversity Convention in June 1992, Biodiversity Action Plans have been produced, 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 at a regional and local level contributing to the production of these plans for the South West and Devon. Each National Plan identifies a Contact Point (responsible for stimulating action), a Lead Partner (responsible for preparing detailed work plans, directing resources, etc.) and a Responsible Agency (responsible for progressing actions).

We are the UK Contact Point and/or Lead Partner for 35 "priority" species in the UK Biodiversity Action Plan. These priority species are either globally threatened or rapidly declining within the UK (i.e. by more than 50% in the last 25 years). Of these species, two are known to be present within the catchment; the otter and the southern damselfly. Evidence suggests that two other species may occur within the catchment; the water vole and the white-clawed crayfish. As contact point for otter and water vole we are responsible for stimulating action to achieve targets, monitoring results and reporting progress to the national group. As joint Lead Partner for the otter we are responsible for preparing detailed work plans, directing resources and overseeing plan implementation.

In addition, other "priority" species listed within the national Action Plan require specific actions by us as a responsible body and some occur within this catchment. These include the great crested newt, marsh fritillary and 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<sup>12</sup> 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<sup>13</sup> as Special Protection Areas (SPAs). The Directive requires that all Competent Authorities must use their powers to ensure sites are maintained at favourable conservation status.

There are three sites from the Natura 2000 network which lie wholly or partially within the catchment; 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 7 – Managing Our Water Resources).

Under Article 10 of the Habitats Directive<sup>12</sup> 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 catchment which are relevant to our activities. 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. Where we have proposed actions, they are to specifically protect key habitats and species in addition to our routine work. (For a list of species present in the catchment please see Appendix).



Table E – Key habitats and species within the catchment

| Key Habitats/ Associated Species/Geological Feature  | Reason for Inclusion  | Perceived threat in this Catchment  | Assoc. Issue |
|--|---|---|--------------|
| <b>Wet woodland</b>  | Nationally important  | Clearance, grazing pressure, inappropriate management, air pollution  | 2, 5         |
| <i>Invertebrates</i><br><i>Lichens</i>   | Rich communities<br>Declining   |   |              |
| <b>Spring-line mire/Rhôs pasture</b>   | Nationally threatened   | Lack of/inappropriate management, habitat fragmentation, agricultural improvement/intensification, afforestation, pond creation                   | 5            |
| <i>Marsh fritillary</i><br><i>Southern damselfly</i><br><i>Curlew</i>                                      | Threatened in Europe<br>Internationally threatened<br>Declining in UK & Europe  | Disturbance<br>Disturbance<br>Disturbance   |              |
| <b>Rivers, streams and fluvial processes</b>   |   | Loss of riparian habitat/ geomorphological features through neglect, inappropriate/lack of management, Alder root disease, invasive alien plants. | 2, 5, 6, 10  |
| <i>Otter</i><br><i>Water vole</i><br><i>Sand martin</i><br><i>Kingfisher</i><br><i>Atlantic salmon</i>     | Threatened in Europe<br>Nationally threatened<br>Declining in UK & Europe<br>Declining in UK & Europe<br>Internationally threatened | Road deaths<br>Nationally threatened<br>Bank protection work, excessive erosion<br>Climate change/possible international exploitation             |              |
| <i>River, brook and sea lamprey</i><br><i>White-clawed crayfish</i>  | Internationally threatened<br>Threatened in Europe  | Threat not fully understood<br>Pollution incidents, crayfish plague, lack of information on distribution  |              |
| <u>Exposed riverine sediments (ERS)</u>  | Wildlife value  | Inappropriate in-river works, lack of understanding of importance   |              |
| <u>River channel features</u>  | Wildlife/Geomorphological value   | Inappropriate in-river works  |              |
| <b>Standing open water</b>   | Nationally threatened   | Loss through neglect or infilling, loss of conservation value through fish/waterfowl stocking, invasive alien plants                              | 2, 4, 10     |
| <b>Lowland heath</b>   | Nationally threatened   | Neglect, afforestation  | 5            |
| <i>Nightjar</i><br><i>Dartford warbler</i><br><i>Curlew</i><br><i>Skylark</i><br><i>Southern damselfly</i> | Severe decline in UK & Europe<br>Rare UK species<br>Declining in UK & Europe<br>Declining in UK & Europe<br>Nationally threatened   |   |              |
| <b>Coastal and floodplain<br/>Grazing marsh</b>  | Nationally threatened   | Agricultural intensification, nutrient enrichment of ditches, unsympathetic water level management  | 2, 5, 9      |
| <i>Curlew</i><br><i>Lapwing</i>  | Declining in UK & Europe<br>Declining in the UK   |   |              |
| <b>Reedbed</b>   | Nationally rare   | Lack of management  | 2, 5         |
| <b>Estuary and associated habitats</b>   | Internationally threatened  | Nutrient enrichment, climate change/sea level rise, siltation   | 5, 6         |
| <b>Rocky foreshore</b>   | Vulnerable habitat  | Recreational pressure, pollution by oil and other contaminants  | 9            |
| <i>Peacock's tail (Padina pavonia)</i><br><i>Red seaweed (Lophosiphonia reptabunda)</i>                    | Nationally scarce<br>Sub-tropical species occurring at only two sites within UK   |   |              |
| <b>Sea cliffs</b>  | International scientific & educational importance   | Recreational pressure, lack of awareness of geological importance   | 6, 9         |

In addition to the internationally protected sites within the catchment, 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 catchment 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 wildlife inventories in some of the districts of Devon and will, where possible, continue to support the updating of the East Devon inventory through activities such as survey work.





**Table 8 Action for county wildlife sites**

| Actions  | Action By<br>Lead/Other       | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|--|-------------------------------|--------------------------|----------------|----|----|----|----|
|  |                               |                          | 00             | 01 | 02 | 03 | 04 |
| a Support the updating of wildlife inventories.<br> | DWT, LPAs, DCC, EN,<br>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 catchment on the Blackdown Hills. A diverse ground flora is often associated with this habitat as well as a rich community of lichens and invertebrates (particularly *Diptera* – flies). The full extent of wet woodland in this catchment is currently unknown, although a decline in extent is believed to have arisen through agricultural improvement and an increase in pasture. For alder root disease see below - Rivers, streams and fluvial processes.

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

**Table 9 Actions for wet woodland**

| Actions   | Action By<br>Lead/Other                     | Cost to<br>Agency<br>(£) | 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.<br>  | EN, DWT, Agency,<br>FRCA, FWAG, NFU,<br>CLA | <1k p.a.                 | ●              | ●  | ●  | ●  | ●  |
| b Identify areas of river valleys where tree planting can be encouraged without adversely affecting flood risks.<br>   | Agency                                      | unknown                  |                | ●  |    |    |    |












**Spring-line mire/Rhōs pasture** - Spring-line mires comprise wet boggy areas concentrated along spring lines and occur predominantly within the Blackdown Hills. The true extent of the habitat is difficult to assess as it often occurs within a complex mosaic of wet habitats. Rhōs pasture (also known as Culm Grassland 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 Blackdowns. 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.

Both spring-line mire and Rhōs pasture are of particular importance to the marsh fritillary butterfly in providing its preferred larval food plant devil's-bit scabious. The species is threatened in Europe and the UK is a major stronghold for the species with Devon holding 20% of the UK population. It is clear, however, that agricultural improvement and lack of appropriate management has caused a decline in the extent of these habitats. Other vulnerable species associated with these habitats include curlew, which breed here and barn owl which hunt for small mammals within the rough grassland areas.

The most extensive area of spring-line mire/Rhōs pasture within the catchment occurs at Hense Moor. 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 Site of Special Scientific Interest (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 catchments have also been identified as part of this restoration project.

*Target: Ensure no further loss of resource, restore 20 ha of habitat by 2005, maintain existing marsh fritillary populations. Enter 80% of total catchment resource into protective management schemes by 2005.*

**Table 10**      **Actions for spring-line mire/Rhōs pasture**

| Actions   | Action By<br>Lead/Other  | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---|--|--------------------------|----------------|----|----|----|----|
|   |  |                          | 00             | 01 | 02 | 03 | 04 |
| a. Promote and implement actions from the Devon BAP for Rhōs pasture by encouraging sympathetic management and/or restoration of sites. Also discourage inappropriate creation of lakes/ponds within Rhōs pasture.<br>   | DWT, EN, Agency, Blackdown Hills Project                               | <3k p.a.                 | ●              | ●  | ●  | ●  |    |
| b. Promote and implement actions from the Devon BAP for curlew & marsh fritillary by promoting sympathetic management and restoration of breeding sites.<br>     | DWT, Blackdown Hills Project, EN, Agency, FRCA, Butterfly Conservation | 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.<br>   | Agency, BOT, landowners  | 1k p.a.                  | ●              | ●  | ●  | ●  |    |
| d. Support measures from the National Fen, Carr, Marsh, Swamp & Reedbed Habitat Statement, and enter 80% of spring-line mire catchment resource into protective management by 2005.<br>  | EN, Blackdown Hills Project, Agency                                    | 3k p.a.                  | ●              | ●  | ●  | ●  |    |



**Rivers, streams and fluvial processes** - The River Otter is typical of rivers in East Devon, being notably different from the spatey fast-flowing rivers in other parts of the county. There are nevertheless abundant meanders within these lower reaches, where geomorphological processes produce varied in-stream habitats including eroding bank faces and exposed riverine sediments.

It has recently been recognised that areas of sand and gravel ("shoals") deposited by the river, termed Exposed Riverine Sediments (ERS), are particularly valuable as habitats for invertebrates (especially beetles). These sediments are vulnerable to erosion control works and some flood defence activities. We are currently undertaking research and development to improve understanding and develop appropriate policy to protect these features (see Issue 6 – Catchment Erosion). A survey is being undertaken of the invertebrates, particularly beetles, found in exposed riverine sediments on a number of rivers in Devon and Cornwall, including the River Otter.

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.

A variety of plants and animals associated with river-based habitats are of particular conservation concern. Otters have partially recovered from the major decline of the 1960s and 1970s, although their distribution within this catchment is still patchy. Evidence suggests that otters are slowly colonising areas to the east of their stronghold in West Devon, however progress is slow. One significant factor in preventing spread is mortality caused by road traffic. We record otter deaths on roads and carry out post-mortems on retrieved corpses where possible to help achieve 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. Whilst to date we have no records of road casualties within the catchment, it is 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 (see Issue 2 – Impact of Development). The Devon Wildlife Trust's "Operation Otter" is gathering further information on the distribution of otters. This survey, undertaken quarterly by volunteers, looks for signs of otters at over 200 sites within Devon. Both the River Otter and River Sid have shown positive signs, within their upper and middle reaches.

*Target: Increase otter territories within catchment, ensure breeding populations present on both rivers by 2010, ensure road casualties are minimised by appropriate preventative measures*

We are not sure whether water voles occur within the catchment. The species has experienced a catastrophic decline during the last fifteen years due, it is believed, to the interrelated factors of habitat loss and predation by mink. Water voles have been protected under the Wildlife & Countryside Act (1981) since 1998 and the need for further action has been recognised. We believe the species occurs within the adjacent Exe catchment and that once sustainable populations develop, there will be opportunities for expansion to the Sid and Otter catchment. The relatively rapid rise and fall of river levels within the catchment may reduce the success of colonisation as will the continued presence of mink. We will seek to identify watercourses and waterbodies least affected by these factors and work to promote the creation of habitat suited to this species.

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

We supported a countywide survey of breeding sand martins and kingfishers, co-ordinated by the Devon Birdwatching and Preservation Society, carried out during 1997. The results confirm both species are breeding within the catchment. 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.

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 10 – Management of Our Freshwater Fisheries).

The exact status of the endangered brook, river and sea lampreys within the catchment 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 catchment 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 the 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 catchment is included within a statutory "no-go" area, where the keeping of non-native crayfish is effectively prohibited.




*Target: Determine current status of white-clawed crayfish within catchment*











In addition to the above issues, the 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.

*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 by coppicing.

**Table 11**      **Actions for rivers, streams and fluvial processes**

| Actions   | Action By<br>Lead/Other    | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---|----------------------------|--------------------------|----------------|----|----|----|----|
|   |                            |                          | 00             | 01 | 02 | 03 | 04 |
| a 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.<br> | Agency, DWT, WRT, FWAG, EN | unknown                  | ●              | ●  | ●  | ●  | ●  |
| b 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.<br>   | Agency, DWT, EDDC, EN      | unknown                  | ●              | ●  | ●  | ●  | ●  |
| c 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.<br>   | Agency, EDDC, EDCCS        | unknown                  | ●              | ●  | ●  | ●  | ●  |



| Actions |  | Action By<br>Lead/Other       | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|--|-------------------------------|--------------------------|----------------|----|----|----|----|
|         |  |                               |                          | 00             | 01 | 02 | 03 | 04 |
| d       | 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 catchment. Promote habitat creation/restoration.<br>  | Agency, DWT, EN, DCC, LPAs    | 3k                       | ●              | ●  | ●  | ●  | ●  |
| e       | Promote and implement actions from the Devon BAP for water vole by determining the status within the catchment and investigating opportunities for habitat restoration and population re-establishment if appropriate.<br>  | Agency                        | 2k                       | ●              | ●  | ●  | ●  | ●  |
| 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 populations dependent upon survey.<br>  | Agency                        | 2k                       | ●              | ●  | ●  | ●  | ●  |
| g       | Implement recommendations of exposed riverine sediments invertebrate research and development.<br>  | 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.<br><br><br> | Agency, LPAs, Riparian owners | <1k p.a.                 | ●              | ●  | ●  | ●  | ●  |
| i       | Continue to raise public awareness of the spread of <i>Phytophthora</i> (alder root disease), encourage the reporting of diseased trees and provide guidance.<br><br><br>   | Agency, FC                    | 1k p.a.                  | ●              | ●  | ●  | ●  | ●  |

**Standing open water (including ponds and lakes)** - There are a number of lakes within the catchment. These range from the Otterhead Lakes in the upper part of the 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 catchment. 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.

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 catchment (see Rivers, streams and fluvial processes above).



**Table 12**      **Actions for standing open water**








| Actions   | Action By<br>Lead/Other     | Cost to<br>Agency<br>(£) | 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.<br>  | 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 catchment, 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 7 – Managing Our Water Resources).

The loss of lowland heath is attributable to a number of factors, which include lack of, or inappropriate management, accidental/uncontrolled fires, afforestation and recreational pressure.

*Target: Ensure no further loss of existing resource, restore 130 ha by 2005, assess impact of Agency licensed activities of East Devon Pebblebed Heaths, maintain existing populations of Southern damselfly and establish new populations at two sites by 2005.*



**Table 13**      **Actions for lowland heath**

| Actions   | Action By<br>Lead/Other                      | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---|--|--------------------------|----------------|----|----|----|----|
|   |  |                          | 00             | 01 | 02 | 03 | 04 |
| a 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.<br>  | Agency, EN                                   | unknown                  | ●              | ●  |    |    |    |
| b Support and contribute towards implementing heathland restoration initiatives within the catchment.<br>   | Agency, EN                                   | 2k                       | ●              |    |    |    |    |
| c Promote appropriate management for conservation of Southern damselfly, and ensure hydrology of occupied and potential reintroduction sites is protected.<br>                                  | RSPB, DWT, EN, Agency, Clinton Devon Estates | 3k                       | ●              | ●  | ●  | ●  |    |
| d Promote appropriate management conservation for curlew.<br>  | 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 catchment 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 may 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.

*Target: Maintain the extent and quality of existing grazing marsh*



**Table 14**      **Actions for floodplain grazing marsh**

| Actions |   | Action By<br>Lead/Other      | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|---|------------------------------|--------------------------|----------------|----|----|----|----|
|         |   |                              |                          | 00             | 01 | 02 | 03 | 04 |
| a       | Promote and implement actions from Devon BAP for grazing marsh by encouraging sympathetic management and identify opportunities for enhancement.<br>  | Agency, RSPB, DWT, EN, EDCCS | 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. This habitat is not particularly common in Devon and is not well-represented within the catchment. 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. Reedbeds 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 for relatively little cost 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 catchment.

*Target: Ensure no loss of habitat*

**Table 15**      **Actions for reedbeds**

| Actions |   | Action By<br>Lead/Other       | Cost to<br>Agency<br>(£) | 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.<br>  | Agency, LPAs, SWWL, RSPB, DWT | <1k                      | ●              | ●  | ●  | ●  |    |




**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 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 type of finch), little owl, shelduck and nuthatch.

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<sup>15</sup>.

*Target: Ensure no net loss of intertidal area, maintain and seek to increase numbers of waders and wildfowl using Otter Estuary*

**Table 16**                      **Actions for estuaries and associated habitats**

| Actions   | Action By<br>Lead/Other | Cost to<br>Agency<br>(£) | 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.<br> | Agency, EN, DWT, EDCCS  | 2k                       | ●              | ●  | ●  | ●  |    |

**Sea cliffs and slope** - The whole coastline of the catchment 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 coastline includes best examples of landslips, sandspits, coves and barrier beaches found in Britain. Also of particular note 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 and Ladram Bay to Sidmouth 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 sea bird 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 provides opportunity to study rock pool wildlife, biological zonation and coastal erosion. The East Devon Coast & Countryside Service recognised the importance of Ladram Bay and, with the assistance of Agency funding, opened the Marine Interpretation Centre in 1997. The centre has proved highly successful serving 10,000 visitors within the first year of opening.

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. The honeycomb worm (*Sabellaria alveolata*) forms spectacular reefs at the neighbouring Hern Rock Bay, 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.

**Table 17**      **Actions for rocky foreshore**

| Actions  | Action By<br>Lead/Other           | Cost to<br>Agency<br>(£) | 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.<br> | EDDC, Agency, MAFF, DWT, EN, DSFC | 2k                       | ●              | ●  | ●  | ●  |    |
| b Work with Devon Sea Fisheries Committee to ensure damage to valuable marine habitats and features is minimised.<br>   | Agency, 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 catchment. 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<sup>16</sup> 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 catchment. Protecting the biodiversity of these reefs will be addressed in the forthcoming LEAP for that catchment. There are currently no specific actions proposed for this habitat in the Sid and Otter LEAP.

**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.

Two RIGS sites have been identified within the Sid and Otter catchment, 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<br>Lead/Other          | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---|----------------------------------|--------------------------|----------------|----|----|----|----|
|   |                                  |                          | 00             | 01 | 02 | 03 | 04 |
| <p>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).</p>  | Agency, RIGS Groups, EDDC, EDCCS | 1k p.a.                  | ●              | ●  | ●  | ●  | ●  |

## Issue 9: 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 not encourage new access routes or promote the use of particular rights of way without considering the needs of landowners and other interests.

Most of Devon's rivers lie within private ownership and without 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 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. We support this initiative and will provide guidance to ensure that any structures within the floodplain do not increase the likelihood of flooding within the town. Honiton Town Council are also looking into the possibility of developing a footpath along the river connecting each end of the town.

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.

**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, including the "the Buzzard" route, much of which lies within this catchment.







**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, especially where public use is high (see Issue 8 – Enhancing Biodiversity).

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.

**Canoeing** - There are no access agreements for canoeing in the catchment, other than within the Otter estuary where there is a public right of navigation. There may be opportunities for recreational activities at locations where conflicts would not arise with anglers or riparian owners. Such opportunities include the restriction of access to particular times or on prearranged dates. It is important to note, however, that significant lengths of the catchment'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.



Table 19 Recreation

| Actions  | Action By<br>Lead/Other                                | Cost to<br>Agency<br>(£) | 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.<br>           | Agency, Ottery Town Council, EDDC                      | unknown                  | ●              | ●  | ●  | ●  | ●  |
| b Support the development of circular and regional footpath and cycle routes.<br>   | DCC, EDDC, Agency                                      | <1k                      | ●              | ●  | ●  | ●  | ●  |
| c Work with others to provide access to and interpretation of the water environment.<br>  | EDCCS, EDDC, DCC, Agency                               | <1k                      | ●              | ●  | ●  | ●  | ●  |
| d Raise public awareness of the potential disturbance to wildlife from public access.<br>  | EDCCS, DCC, DWT, Blackdown Hills Project, Agency, BTCV | <1k                      | ●              | ●  | ●  | ●  | ●  |
| e Encourage discussions between interested parties to investigate the possibilities of allowing canoe access to the River Otter.<br>                                       | Agency, Riparian Owners, BCU, EDDC, Anglers            | <1k                      | ●              | ●  | ●  | ●  | ●  |

## Issue 10: 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 catchment.

**Barriers to fish migration** - The River Otter had a run of migratory salmonids until around 1888 when Otterton Weir was constructed, forming an almost complete barrier to fish migration. From then on the river Otter was regarded as a trout river, with salmon only able to spawn below Otterton Weir.

We have been collaborating with a number of organisations and interested parties to work towards the installation of a fish pass in the weir which will allow unimpeded migration from the tidal to freshwater river. This work is expected to be completed by mid-November 1999. Once salmon and sea trout are able to enter the river, following installation of the fish pass at Otterton, it will be important to identify any other weirs that cause difficulties to migrating fish. It is possible that other fish passes may have to be installed, or the weirs modified to allow free passage over a greater range of flows. The weirs which may need modification include Langford Weir and Tipton St John Weir.

The old A30 road created an impassable barrier to fish movement along the River Gitt at Nags Head. As part of the new A30 road construction the contractors agreed to undertake improvements to the culvert and make it passable for migrating fish. It is hoped that this work will be finished in time for the coming year's spawning run.

**Decline in brown trout** - There has been a decline in the brown trout fishery on the River Otter, although rod catch returns suggest that the situation in more recent years may be improving. A similar decline has been reported on other Devon rivers in recent years, and as a result we are working in collaboration with the Wild Trout Society to carry out research to investigate the reported problem. The first phase which commenced in April 1999 was to quantify the problem by analysing a variety of data. Phase I has been completed, and Phase II will now attempt to identify the causes, and make recommendations as to how to arrest the decline and improve wild trout stocks.

Historically, many riparian interests within the catchment 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 catchment when farmed fish breed with wild fish.

**Fish-eating birds** - It is widely felt in angling circles that in recent years there has been a marked increase in the extent of predation by fish-eating birds on freshwater fisheries. The number of cormorants observed frequently in the middle and lower reaches of the River Otter are concerning local anglers. However, we will not support licensed killing of these birds until and unless proof of serious damage has been established and that culling is proven to be the most effective means for preventing significant loss of fish stocks. MAFF have been conducting a research project to ascertain the effect of fish-eating birds on freshwater fisheries over the last three years and the final report is expected shortly.

**Siltation** - Siltation can have an impact on freshwater fisheries by causing the river gravels to be covered with a thin layer of sediment which can affect the growth of eggs laid by salmonids. In recognition of this problem a proposal was developed in conjunction with the Westcountry Rivers Trust (WRT) to seek EU funding for a project to attempt to influence sediment input by the use of fencing and habitat restoration and improvement. The proposal now forms part of a South West peninsula wide initiative which intends to expand the Westcountry Rivers Trust work on the River Tamar to other catchments. The aim is to set about developing sustainable land management practices, conserving and restoring key river and wetland habitats. The proposal is currently being assessed by MAFF and the Heritage Lottery Fund (see Issue 5 – Impact of Farming).



















**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.





**EC Freshwater Fish Directive** - 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 1995 – 1998 inclusive.

**Table 20 Management of our freshwater fisheries**

| Actions  | Action By<br>Lead/Other                                    | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|--|--|--------------------------|----------------|----|----|----|----|
|  |  |                          | 00             | 01 | 02 | 03 | 04 |
| a Complete installation of fish pass at Otterton Weir and monitor effectiveness.<br>   | Agency, Others   | 50k                      | ●              | ●  | ●  | ●  | ●  |
| b Improve conditions for fish migration through partnership funding at Langford, Tipton and Marles Farm weirs.<br>                                     | Agency, Others   | unknown                  |                | ●  | ●  | ●  | ●  |
| c Ensure satisfactory completion of fish passage facilities at A30 road crossing of river.<br>   | BBTA, Agency   | unknown                  | ●              |    |    |    |    |
| d Identify other obstructions to fish migration and plan for improvements.<br>   | Agency, River Otter Association                            | unknown                  | ●              | ●  | ●  |    |    |
| e Continue to pursue designation of stretches of the River Otter under the EC Freshwater Fish Directive <sup>17</sup><br>                          | Agency, River Otter Association                            | unknown                  | ●              | ●  | ●  |    |    |
| f Investigate ova survival in the catchment at selected sites.<br>   | Agency, Fishery Associations                               | unknown                  |                | ●  |    |    |    |
| g Discourage the stocking of the catchment with farmed brown trout and promote habitat improvements and recovery of natural fish populations.<br>  | Agency, Riparian Owners, Fishery Associations              | <1k                      | ●              | ●  | ●  | ●  | ●  |
| h Include River Otter in current Environment Agency/Wild Trout Society investigation into the decline of brown trout.<br>                          | Agency, WTS, River Otter Association                       | 0.5k                     | ●              |    |    |    |    |
| i Co-operate with the licensing authority to progress research into fish-eating birds and implement recommendations where appropriate.<br>  | Agency, MAFF, Landowners, Anglers, Riparian Fishery Owners | <1k                      | ●              | ●  | ●  | ●  | ●  |
| j Continue to work positively with owners and anglers to establish the full facts about fish-eating birds in each situation.<br>  | Agency, Landowners, Anglers                                | <1k                      | ●              | ●  | ●  | ●  | ●  |

| Actions |   | Action By<br>Lead/Other | Cost to<br>Agency<br>(£) | Financial Year |    |    |    |    |
|---------|---|-------------------------|--------------------------|----------------|----|----|----|----|
|         |   |                         |                          | 00             | 01 | 02 | 03 | 04 |
| k       | Seek to dissuade riparian owners from carrying out gravel removal or to limit the extent of the operation.<br>                                  | Agency, Riparian Owners | <1k                      | ●              | ●  |    |    |    |
| l       | Continue to press for changes to legislation to allow increased control of in-river works where damage to the fishery is likely to result.<br>  | Agency                  | <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 catchment. 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 catchment. The Steering Group members are:

| <b>Name</b>     | <b>Representing</b>                       |
|-----------------|---|
| Dr P Beale      | Devon Area Environment Group              |
| 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 | Devon Fisheries Advisory Committee        |
| Mr R Waller     | Clinton Devon Estates                     |
| 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 Regis 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

## 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.

In East Devon the Agenda 21 process is led by East Devon District Council, who intend to complete a Local Agenda 21 strategy for their area within the next few months.

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.

## 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** - This project seeks to draw these threads together to produce a strategy for Integrated Coastal Zone Management. This project is 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). It is intended that the outputs of the project will be extended to other coastal regions across Europe. We are represented on the project's steering group and several focus groups which have been set up to examine various aspects of coastal zone management.

**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 is to be put before UNESCO in 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>.

If you wish to obtain more information about anything presented in this Consultation Draft please contact the LEAPs Team Leader at our Exminster Office (see front of document for address).

## 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   |
|--|--|--|---|
| <b>Water Resources</b>   |  |  |   |
| The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources. | <ul style="list-style-type: none"> <li>● Grant or vary water abstraction and impoundment licences on application.</li> <li>● Revoke or vary existing licences to reinstate flows or levels to surface waters or groundwater which have become depleted as a result of abstraction, and are subject to a liability for compensation.</li> </ul> | <ul style="list-style-type: none"> <li>● 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.</li> </ul> | <ul style="list-style-type: none"> <li>● The Agency is committed to water-demand management and will work closely with water companies and developers, local authorities and relevant organisations to promote the efficient use of water. The Agency acknowledges that new resources may be needed in the future and supports a twin-track approach of planning for water resource development alongside the promotion of demand-management measures. The Agency seeks to influence planning decisions for new development by encouraging the inclusion of water conservation measures in new properties, particularly in areas where water resources are under stress, and by ensuring that planning authorities allow for the lead time for resource development.</li> </ul> |



| Agency Duty  | The Agency has powers to:   | The Agency has an interest (but no powers) in:  | Partnership  |
|--|---|---|--|
| <p><b>Flood Defence</b></p> <p>The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.</p> | <ul style="list-style-type: none"> <li>● 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).</li> <li>● Produce flood risk maps for all main rivers under S105 of Water Resources Act 1991.</li> <li>● Undertake works to main rivers using permissive powers.</li> <li>● Issue flood warnings relating to main river to the public, local authorities and the police.</li> <li>● Consent mineral working within 16 m of main rivers.</li> </ul> | <ul style="list-style-type: none"> <li>● Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by local planning authorities.</li> <li>● Installation of surface water source control measures e.g. flood attenuation structures.</li> <li>● Supervising the maintenance of ordinary watercourses which is a local authority remit, but may impact on main rivers.</li> <li>● Installation of buffer zones which reduce flood risk and have significant environmental benefits.</li> <li>● Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance.</li> </ul> | <ul style="list-style-type: none"> <li>● As a statutory consultee on planning applications within main river floodplains the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts of proposed floodplain development.</li> <li>● 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.</li> </ul> |

## Water Quality

|   |   |  |  |
|---|---|--|--|
| <p>The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.</p> | <ul style="list-style-type: none"> <li>● Issue discharge consents to control pollution loads in controlled waters.</li> <li>● Regulate discharges to controlled waters in respect of water quality through the issue and enforcement of discharge consents.</li> <li>● Issue 'works notices' where action is required to reduce the risk of pollution.</li> <li>● Prosecute polluters and recover the costs of clean-up operations.</li> <li>● Serve prohibition notices (with or without conditions) on highway authorities to require treatment and pollution measures for highway runoff.</li> </ul> | <ul style="list-style-type: none"> <li>● The greater use of source control measures to reduce pollution by surface water runoff.</li> <li>● Prevention and education campaigns to reduce pollution incidents.</li> <li>● The provision of highway runoff control measures which is a highway authority remit.</li> </ul> | <ul style="list-style-type: none"> <li>● 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.</li> </ul> |
|---|---|--|--|

| Agency Duty  | The Agency has powers to:   | The Agency has an interest (but no powers) in:   | Partnership  |
|--|---|--|--|
| <p><b>Air Quality</b></p> <p>The Agency has a duty to implement Part 1 of the Environment Protection Act 1990.</p> | <ul style="list-style-type: none"> <li>● 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.</li> <li>● Have regard to the government's National Air Quality Strategy when setting standards for the releases to air from industrial processes.</li> </ul> | <ul style="list-style-type: none"> <li>● The vast number of smaller industrial processes which are controlled by local authorities.</li> <li>● Control over vehicular emissions and transport planning.</li> </ul> | <ul style="list-style-type: none"> <li>● 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.</li> </ul> |

### Radioactive Substances

|  |  |  |   |
|--|--|--|---|
| <p>The Agency has a duty under the Radioactive Substances Act 1993 to regulate the use of radioactive materials and the disposal of radioactive waste.</p> | <ul style="list-style-type: none"> <li>● To issue certificates to users of radioactive materials and disposers of radioactive waste, with an overall objective of protecting members of the public.</li> </ul> | <ul style="list-style-type: none"> <li>● The health effects of radiation.</li> </ul> | <ul style="list-style-type: none"> <li>● 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.</li> <li>● The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites.</li> <li>● The Agency will work with the HSE on worker protection issues at non-nuclear sites.</li> </ul> |
|--|--|--|---|



| Agency Duty | The Agency has powers to: | The Agency has an interest (but no powers) in: | Partnership |
|-------------|---------------------------|--|-------------|
|-------------|---------------------------|--|-------------|

### 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 reuse and recycling and improve standards of disposal.

### 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.

| Agency Duty  | The Agency has powers to:   | The Agency has an interest (but no powers) in:  | Partnership   |
|--|---|---|---|
| <b>Landscape</b>   |   |   |   |
| The Agency will further landscape conservation and enhancement when carrying out water management functions; have regard to the landscape when carrying out pollution control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land. | <ul style="list-style-type: none"> <li>● 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.</li> </ul>   | <ul style="list-style-type: none"> <li>● The landscape impact of new development, particularly within river corridors. This is controlled by local planning authorities.</li> </ul>   | <ul style="list-style-type: none"> <li>● 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.</li> </ul>            |
| <b>Archaeology</b>   |   |   |   |
| The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.   | <ul style="list-style-type: none"> <li>● The Agency must promote its archaeological objectives through the exercise of its water management and pollution control powers and duties.</li> </ul>   | <ul style="list-style-type: none"> <li>● Direct protection or management of sites of archaeological or heritage interest. This is carried out by local planning authorities, County Archaeologists and English Heritage.</li> </ul> | <ul style="list-style-type: none"> <li>● 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.</li> </ul>                 |
| <b>Fisheries</b>   |   |   |   |
| The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.  | <ul style="list-style-type: none"> <li>● Regulate fisheries by a system of licensing.</li> <li>● Make and enforce fisheries byelaws to prevent illegal fishing.</li> <li>● Promote the free passage of fish and consent fish passes.</li> <li>● Monitor fisheries and enforce measures to prevent fish entrainment in abstractions.</li> <li>● Promote its fisheries duty by means of land drainage consents, water abstraction applications and discharge applications.</li> </ul> | <ul style="list-style-type: none"> <li>● The determination of planning applications which could affect fisheries.</li> </ul>  | <ul style="list-style-type: none"> <li>● Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers and local authorities to protect fisheries.</li> </ul>                    |
| <b>Recreation</b>  |   |   |   |
| The Agency has a duty to promote rivers and water space for recreational use.  | <ul style="list-style-type: none"> <li>● The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management.</li> </ul>   | <ul style="list-style-type: none"> <li>● Promotion of water sports. This is carried out by the Sports Council and other sports bodies.</li> </ul>   | <ul style="list-style-type: none"> <li>● 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.</li> </ul> |



# Appendix

## EC Directives affecting Water Quality in the Sid and Otter Catchment

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<sup>5</sup>** - 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 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<sup>6</sup>** - 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 are needed at Sidmouth STW in order to meet the requirements of the UWWTD (see Issue 1 – Impact of Effluent Disposal). 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<sup>18</sup>** - 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 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<sup>17</sup>** - 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 are 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.

**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 phosphorous.

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.

## Biodiversity

The following table lists the key species and their associated habitats that are present in the Sid and Otter catchment, indicating the relevant Biodiversity Action Plan and the level of our responsibility in delivering actions.

### Catchment Species List – (See Issue 8 – Enhancing Biodiversity)

| 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              |
| Atlantic Salmon*   | Rivers & streams                          |   | ●  |              | ●          | Delivering action       |
| River Lamprey      | River & streams                           |   | ●  |              |            | Biodiversity commitment |



| 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   |
|-----------------------|---------------------------------|---|--|--------------|------------|-------------------------|
| 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 water 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

|         |   |
|---------|---|
| ADAS    | Agricultural Development and Advisory Service   |
| AMP     | Asset Management Plan   |
| AONB    | Area of Outstanding Natural Beauty  |
| BATNEEC | Best Available Technique Not Entailing Excessive Cost   |
| BBTA    | Balfour Beatty, Tilbury Douglas, Deutsche Asphalt   |
| 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 Agenda 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 <sup>2</sup>   | square kilometres               |
| L                 | litres                          |
| m <sup>3</sup> /s | cumecs; cubic metres per second |
| Mg                | milligrams                      |
| MI                | megalitre                       |
| MI/d              | megalitres per day              |
| Mm                | millimetre                      |
| ng/l              | nanogram per litre              |
| <                 | less than                       |
| >                 | greater than                    |
| ≥                 | greater than or equal to        |
| %                 | percentage                      |

## References

- <sup>1</sup> Our Common Future, The World Commission of Environment and Development, The Brundtland Commission, 1987.
- <sup>2</sup> East Devon District Local Plan, Revised Deposit Version 1997, East Devon District Council.
- <sup>3</sup> An Environmental Strategy for the Millennium and Beyond, Environment Agency, 1997, HO-9/97-199k-D-BABF.
- <sup>4</sup> Water Industries Act, 1989.
- <sup>5</sup> European Council Directive of 8 December 1975 concerning the Quality of Bathing Water (76/160/EEC). Official Journal of the European Communities No. L31/1.
- <sup>6</sup> European Council Directive of 21 May 1991 concerning Urban Waste Water Treatment (91/271/EEC). Official Journal of the European Communities No. L135.
- <sup>7</sup> Water Resources Act, 1991
- <sup>8</sup> Agricultural Background Report, Farming & Rural Conservation Agency, 1999.
- <sup>9</sup> European Directive on the Protection of Groundwater Against Pollution Caused by Certain Dangerous Substances (80/68/EEC).
- <sup>10</sup> Living on the Edge; a guide to the rights and responsibilities of a riverside owner, Environment Agency, 1998, HO-3/98-29K-C-AYLI.
- <sup>11</sup> Conservation (Natural Habitats, & c.) Regulations, 1994, HMSO.
- <sup>12</sup> European Council Directive on Species and Habitats (92/43/EEC). Official Journal of the European Communities No. L206, 1992.
- <sup>13</sup> European Council Directive on the Conservation of Wild Birds (EEC/79/409).
- <sup>14</sup> The Wildlife & Countryside Act 1981, HMSO.
- <sup>15</sup> The Implications of Future Shoreline Management on Protected Habitats in England and Wales, Environment Agency R & D Technical Report, W150.
- <sup>16</sup> Lyme Bay – A report on the nature conservation importance of the inshore reefs and the effects of mobile fishing gear, Devon Wildlife Trust, 1993.
- <sup>17</sup> European Council Directive on the Quality of Freshwaters needing Protection or Improvement in order to support Fish Life (78/659/EEC). Official Journal of the European Communities No. L22/1.
- <sup>18</sup> European Council Directive concerning the Quality Required of Surface Water Intended for the Abstraction of Drinking Water in the Member States (75/440/EEC).



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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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