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Photo
Maps



local environment agency plan

NORTH CORNWALL

ACTION PLAN

JULY 1998



ENVIRONMENT
AGENCY



Abbreviations

BATNEEC	Best Available Technique Not Entailing Excessive Cost
BPEO	Best Practicable Environmental Option
BSG	Biodiversity Steering Group
CCC	Cornwall County Council
CWT	Cornwall Wildlife Trust
DETR	Department of the Environment, Transport and Regions
EN	English Nature
FAS	Flood Alleviation Scheme
FWAG	Farming and Wildlife Advisory Group
GIS	Geographic Information System
HSE	Health and Safety Executive
LPA	Local Planning Authority
NCDC	North Cornwall District Council
PESCA	National body promoting sustainable local marine aquaculture and marine fisheries
RQO	River Quality Objectives
RSPB	Royal Society for the Protection of Birds
SSO	Storm sewage overflow
STW	Sewage Treatment Works
SWW	South West Water

9. References

North Cornwall Local Environment Agency Plan Consultation Report, Environment Agency, December 1997. SW-12/97-0.8K-E-BAJH

Camel Estuary Management Plan. Padstow Harbour Commissioners, October 1996.

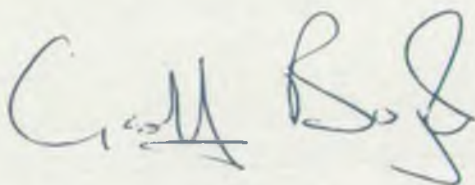
Nature's Way - Designing for Pollution Prevention, International Association of Water Quality, 1996.



Foreword

This Action Plan sets out the tasks that the Agency and others will carry out over the next five years. The actions address problems that arise from the pressures on the environment, and seek new opportunities to enhance it. Other solutions will be looked at in a longer-term perspective or a wider area. The effects of these issues on the area are also described.

We thank all who responded during the consultation period for this action plan. The spirit of partnership needed to implement this plan is represented by their valuable contributions; a spirit that will ensure that all who care for the environment can work together to enhance the whole.



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Contents

1. Vision	1
2. Introduction	2
3. Review of the Consultation Process	4
4. Catchment Overview	5
5. Protection through Partnership	8
6. Actions	11
6.1 Effects of sewage discharges	11
6.2 Safeguarding Special Areas of Conservation	12
6.3 Protection of habitats, wildlife and historic features	13
6.4 Freshwater and estuarine fisheries management	16
6.5 Meeting current and future demand for water	19
6.6 Generation and management of wastes	20
6.7 Farming	22
6.8 Nutrient enrichment of surface waters	23
6.9 Development	24
6.10 Flooding	26
6.11 Sea level rise	26
6.12 Recreation	27
6.13 Oil spill contingency planning	28
6.14 Air quality	29
6.15 Targets for river water quality	29
7. Appendices	31
8. Glossary	37
9. References	39

1.Vision

Our vision is of this area being managed in a sustainable way, that balances the needs of all users with the needs of the environment.

We look forward to a future where a healthy local economy leads to:

- biodiversity and physical habitat for wildlife being enhanced
- people's enjoyment and appreciation of the environment continuing to grow
- pressures from human wants being satisfied sustainably.

We cannot realise this vision on our own and will seek to work in partnership with local authorities, local industry and local people to turn this vision into reality.

Vision

2. Introduction

2.1

The Environment Agency

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

Our Principal Aim

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

Our Objectives

The Environment Agency works towards sustainable development through seven objectives, set by Ministers:

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

Our Role

Our work is divided into seven main functions:

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

These roles are explained in further detail in Appendix 1.

2.2

Local Environment Agency Plans

The environment is subject to a wide variety of uses which invariably interact with and sometimes conflict with each other. The process of environment planning has been developed to help manage these interactions and conflicts for the overall benefit of the environment and its users.

The Local Environment Agency Plan process within the Environment Agency includes the production of two documents; a Consultation Report and an Action Plan. The Consultation Report describes our vision for each catchment, identifies problems and acts as a focus for consultation between the Environment Agency and other interested parties. Following consultation, the Action Plan identifies actions to resolve the problems and issues. The Plans are part of an ongoing dialogue between ourselves and the various organisations and individuals involved in the protection and management of the environment. They also provide background data for Agency responses to development plans and highlight our concerns about development.

This Action Plan follows the production of the North Cornwall Consultation Report and the consultation period. The Action Plan will form the basis for improvements to the environment and primarily covers the five year period from 1998 to April 2003. Achievement of the Action Plan will be monitored and reported annually. Future annual reviews will include new issues as they arise.

The Catchment Steering Group

The Steering Group represents a range of commercial, local authority and environmental interests who endorse the Consultation Report and Action Plan prior to public release. They will monitor the implementation of the Action Plan and provide the Agency with specific advice on the importance of issues within the catchment. They act as a communication link between the local community, the Agency and its committees and will help to promote and develop initiatives of benefit to the environment within the catchment. The Catchment Steering Group will meet once a year during the life of this plan. They are:

Name	Representing
Mr P Edwards	REPAC
Mr T Jackson	Cornwall Fisheries Forum
Cllr Mrs E Heard	RFDC, County Councillor
Mr R Walton	Camel Trail, Cornwall County Council, Coast and Countryside Service
Mr S Ford	National Trust
Mr F Stephens	NFU
Mr R Morgan	Newquay Association of Tourism and Commerce
Mr M Cherry	AEG
Mrs V Tomlinson	Friends of the Earth
Capt. T Platt	Netsmen, Padstow Harbour Commissioners
Mr R McCawley	South West Water
Cllr M Boorer	Bude-Stratton Town Council
Mrs J Chappell	North Cornwall District Council
Mr R Turner	Bude Canal Angling Association
Mr H Stott	Surfers Against Sewage

3. Review of the Consultation Process

3.1

Public Consultation

The issues listed in this Action Plan were identified in the Consultation Report or resulted from the consultation process. The North Cornwall LEAP Consultation Report was launched on 2 December 1997. The consultation period closed on 9 March 1998. During this time the Consultation Report was promoted by:

- Radio, television and press reports
- Advertisements in local newspapers
- Displays at Bude, Padstow, Camelford, Bodmin, Wadebridge and Newquay, with Agency staff available to answer questions on specified days
- The distribution of over 700 copies of the reports.

Results of Consultation and Further Action

A Statement on Consultation was produced in May 1998 and was distributed to all respondents. Copies are available on request from the address at the front of this plan.

Forty three written responses were received of which twenty four were questionnaire replies. The respondents included statutory organisations, industry, landowners, sport and recreation groups and the public (see Appendix 2).

Our vision for the catchment was shared or fully supported by a large number of organisations. All comments have been considered and, where appropriate, incorporated in the Action Plan. No additional issues have been added but many have been modified in response to the comments received and the negotiations which followed the end of the consultation period.

Suggestions were received regarding the wording and the layout of the Consultation Report. Although we will not republish the report, we will use some of the ideas suggested in future publications.

We asked consultees to list what they felt were the most important issues highlighted in the Consultation Report. The responses indicated that the following were the most significant issues:

- Impact of development
- Generation and management of wastes
- Impact of sewage discharges
- Meeting current and future demand for water

We list actions to tackle these issues, amongst others, in the Action Tables.

4. Catchment Overview

Landscape, wildlife and archaeology

The area consists of some distinctive landscapes and a range of habitats which fall into three natural areas, Bodmin Moor, Cornish Killas and Granites and Culm Measures. Throughout the area there are Red Data Book species (lists of threatened species) and other rare plants and animals, many occurring in designated sites.

The spectacular rocky coastline runs along the whole length of the area. The coastline displays nationally significant geological exposures, as well as maritime grassland, heathland and stunted woodland of high biological value.

Woodland is generally scarce, although many of the steep valleys are thickly wooded. Culm grassland is found in the Bude hinterland and damp, rushy meadows are still quite common. Sturdy Cornish hedges criss-cross the area, many with characteristic wind-sculpted trees on top.

In the south east is Bodmin Moor with its rocky tors punctuating the skyline. This ancient landscape is of great importance for its Bronze Age settlements and barrows, its stone walls and its moorland and heathland. It is a unique area, and one of the most valued landscapes in the South West.

One of Cornwall's major rivers, the Camel, wends its way through the heart of the area. The River Camel and its tributaries is of international importance for its otters. Rare mosses and liverworts are present in the river and a number of areas of heathland and bog of national importance lie in the headwaters.

Across the wider countryside, other fragments of semi-natural habitat remain (Semi-natural habitat - habitats or communities that have been modified to a limited extent by man, but still consist of species naturally occurring in the area). These are linked by vegetated stream and river valleys and Cornish hedges.

The activities of past generations have shaped the landscape of the catchment. Bronze Age remains survive on higher ground within the area and Iron Age cliff forts occur in several places along the coastline, most notably an Iron Age fort at Dunmere and Roman settlement at Nanstallon.

Mining has taken place in some parts of the catchment, but not to the extent that it did in the rest of Cornwall. Iron extraction being the most significant activity in the Camel Valley and coastal lead mines now form an important habitat for bats. Quarrying has been, and continues to be, more significant.

Economy

The whole of the catchment is popular with visitors and tourism is an important part of the local economy. Seasonal population increases have implications for infrastructure and service provision. Visitors come for traditional seaside holidays and for water-based activities, such as sailing and surfing. Padstow is an important fishing port and fishing takes place all around the coast.

Climate change

Recent and continued research is showing that climate change is likely to change rainfall patterns in the future. It is expected that rainfall will be less frequent, but when it occurs, it will fall in larger quantities in shorter time. The small but steep catchments in Cornwall are extremely vulnerable to flash flooding at present and this change could exacerbate the situation.

Fisheries

The catchment contains riverine salmonid fisheries, lake-based coarse and game fisheries and a coarse fishery on the Bude canal. In particular the River Camel has a renowned Atlantic salmon and sea trout rod fishery and seven licensed estuary netmen.

The Camel estuary is an important nursery area for bass as well as for other marine species. Coastal areas of the catchment also support many marine fish species, some of which are commercially important. There are established shellfish beds for Pacific oysters, mussels and cockles within the Camel Estuary.

Farming

Agricultural land covers approximately 93% of the total area. The majority of the agricultural land, over 74%, is grass reflecting an area largely devoted to livestock farming.

Recreation

Many people spend their spare time enjoying our rivers and coasts. Where we can we try to improve facilities for these people but we must always safeguard the environment from the damage which visitor pressure might cause. We maintain rivers so that they can sustain angling at an appropriate level and seek to develop the amenity and recreational potential of inland and coastal waters and associated land.

Activities such as surfing, snorkelling, water-skiing, diving and windsurfing take place along much of the coast. The beaches are a valuable recreational and economic asset. We monitor and report on the water quality at the most heavily used beaches.

Built environment and development plans

The plan area lies within areas administered by North Cornwall District Council, Restormel District Council and Carrick District Council. All council local plans covering the catchment area have incorporated a number of policies for positively protecting the environment. Development restraints are requests by the Agency to planning authorities to prevent development which would make an existing environmental problem worse. There are currently seven recommended areas of development restraint in the area.

Seasonal population increases also put pressure on infrastructure and services.

Mineral extraction

There are eight slate quarries and two active granite quarries in the plan area, De Lank and Hantergantick.

China clay is worked at Stannon, near Roughton on Bodmin Moor. It is close to important wetland and acid grassland habitats.

Flood defence

The North Cornwall coast is historically vulnerable to tidal surges, although what development there has been has usually taken this into account. Both high sea levels and the combination of high river flows with high sea levels have been a factor in the design of the flood alleviation schemes in Padstow and around Wadebridge. High sea levels combined with severe weather have caused problems in Mawgan Porth, Polzeath, Boscastle and Bude.

Flood alleviation schemes have been constructed at Wadebridge, Padstow, Camelford, Stratton and Bude. Further work is currently in progress at Bude to increase the standard of defence of the scheme, whilst minor local works to relieve flooding have been undertaken at Helebridge and Boscastle (Paradise Stream). There are local walls at Mawgan Porth protecting a few riverside properties.

There are extensive flood embankments on the Camel Estuary and a number of smaller flood alleviation schemes on other rivers in the catchment. We provide a flood warning service for the major rivers in the catchment and for the North Cornwall Coast.

Water supply and abstractions

On average the total quantity of water available in the catchment is of the order of 485,000 Megalitres/year. This water represents the proportion of rainfall not evaporated or taken up by plants.

In the catchment there are currently 38 licensed surface water and 375 licensed groundwater abstractions for public water supply and for private water use. The annual total of water which is authorised to be abstracted from the catchment is 50,776 Megalitres/year (MI/y), 47,910 MI from surface waters and 2,866 MI from groundwater sources (1MI = 1 million litres). The total volume licensed for abstraction therefore represents 10%, on average, of the total available natural resource. However, this is a distortion of actual resource consumption. In reality many abstractors take less than their authorised quantity and abstracted water is often returned to the catchment and so is available for re-use.

South West Water (SWW) are responsible for maintaining public water supply and abstract water from a combination of surface water sources. The area covered by this plan lies within the Colliford Strategic Supply Zone and so is fed by sources both within and outside the plan area.

An influx of holiday-makers into the area during the summer months can also lead to increased demands.

Effluent disposal

In areas served by mains sewerage both trade effluents and sewage are normally treated at the local sewage treatment works (STW). In this area, the sewerage undertaker is South West Water Services Ltd (or SWWSL), which operates 34 STWs of which 13 are small works which receive no trade effluent and have descriptive consents. There are also two Deemed consents and two long sea outfalls, one of which has a Deemed consent.

Extensive parts of the area covered by this plan are unsewered and therefore there are many small domestic treatment plants, septic tanks and soakaways in operation.

Most trade effluents are discharged to the catchment via STWs; there are also 48 consented private trade discharges of greater than 5m³/day volume

Waste management

The area was until quite recently served by a number of landfill sites taking household, commercial and industrial wastes. There is now only one putrescible landfill in the plan area at Tiscott Wood near Bude. At present waste from the Newquay area is disposed at the United Mines landfill near St Day via a waste transfer station at Trevenson, Newquay. Waste from the remainder of the area is carried by the collection vehicles direct to Tiscott Wood landfill.

Recycling

Within the plan area there are a number of initiatives by local authorities to promote the reduction and re-use of waste, including recycling points. Cornwall County Council provides recycling points at major supermarkets throughout Cornwall.

North Cornwall District Council operates a mobile collection service for household recyclables. There are also fixed recycling banks for various materials throughout the Plan Area operated by County and District Councils and charity groups. District Councils have Recycling Plans which identify their proposals to meet national targets.

Integrated pollution control

There is one Integrated Pollution Control (IPC) process within the area, Maybridge Chemical Company which manufactures fine organic chemicals.

5. Protection through Partnership

Working with others

The Agency is well placed to influence many of the activities affecting the environment through the Environment Act 1995 and other legislation. Local authorities are responsible for controlling land use and it is primarily land use change in the long term and the opportunities presented by redevelopment that will tackle the issues of urban runoff, contaminated land and the renewal of river corridors. In addition the support of community groups, individuals, landowners and businesses will be needed to tackle issues such as litter, pollution, private sector investment and river corridor enhancement.

The Agency must work in partnership with others to ensure that the Actions in this plan are implemented and that the key objectives and the long term vision can be realised. The Agency is working closely with local authorities in particular. Education also has an important role in changing attitudes and work practices.

The following organisations are included in the five year action programme:

- Bude Town Council
- Camel Fisheries Association
- Cornwall County Council
- Cornwall Wildlife Trust
- English Nature
- Farming and Wildlife Advisory Groups
- National Trust
- North Cornwall District Council
- MAFF
- PESCA
- Padstow Harbour Commissioners
- Royal Society for the Protection of Birds
- South West Rivers Association
- South West Water
- West Country Rivers Trust

Local Agenda 21

In 1994 the UK government produced a national sustainable development strategy and action plan for the UK. At the local level, most authorities are working with local communities to produce their own Local Agenda 21 (LA21) programmes, to promote sustainable development and to improve quality of life. The majority of district councils have LA21 officers in place. At the heart of the LA21 concept is the idea of "thinking globally, acting locally". We welcome the opportunity to work with local authorities on Local Agenda 21 matters.

The Agency is keen to be seen as a source of locally based environmental information, and a promoter of environmental initiatives suitable for delivery through LA21 groups. These include initiatives such as "Use Water Wisely", the Oil Care Campaign, and ideas to promote composting, also supported by County and District Council campaigns.

We would welcome the opportunity to work with Local Agenda 21 groups to help deliver some of the actions listed in the activity tables.

Land Use Planning and Environment Planning

Land use is the single most important influence on the environment. It follows therefore, that land use change has important implications for the environment which can be both positive and negative. Government planning guidance highlights the importance of communication between local planning authorities (LPAs) and the Agency, and the relationship between land use and environmental matters.

The control of land use change is primarily the responsibility of LPAs, through implementation of the town and country planning acts. Local development plans provide a framework for land use change and are the key consideration in the determination of planning applications.

The Agency is a statutory consultee on development plans and certain categories of planning application. This allows the Agency's views to be considered by the council prior to a planning application being decided or policies in a development plan being approved.

The Agency has produced guidelines to local planning authorities on environmental policies and why they are important.

Initiatives in the area

There are a range of initiatives by various bodies which at some level cover the area of this plan. These are both statutory and non statutory in nature and cover a variety of topics from environmental to social and economic interests. A number of bodies have produced, or are producing some form of documentation. It is important for all parties that where different interests overlap discussion occurs on those areas of common interest. In this way we can integrate action, being more efficient in our actions, avoiding duplication (or conflict) and make the most of limited budgets.

Shoreline Management Plans (SMPs)

SMPs are being produced, by a coastal group with statutory interests working together, for the coastline covered within this plan. They provide a forum for an integrated review of coastal processes and sustainable coastal defence policies to set objectives for the future management of the shoreline.

Camel Estuary Management Plan

The Camel Estuary Management Plan was published in 1996. The plan is intended to provide a strategic overview for estuary management. The issues and management requirements for the Camel Estuary have been highlighted in the Camel Estuary Management Plan⁸. The Agency sits on the Advisory Group overseeing actions coming out of the plan and is supportive of the aims of the initiative. Issues and actions contained within that plan will not be raised in this document unless they are a particular Environment Agency responsibility.

Farming and Wildlife Advisory Group (FWAG) Camel Valley Project

The Agency supports this group farm project, where local farmers co-ordinate the management of their land, productive and non productive, for the benefit of wildlife and landscape. This is done through whole farm plans which pick out the networks and corridors which link areas of high wildlife value across their holdings. Many of these corridors are associated with the rivers and watercourses.

South West Forests Project

The aim of the South West Forests Project is to use forestry planting and management as a catalyst for positive land use changes, and stimulate other sectors of the rural economy. The project comes at a time of uncertainty and change in the long-established agricultural structure of north west Devon and north Cornwall. This project seeks to regenerate the rural area through large-scale tree planting. The Agency is keen to work with the project to ensure that proper consideration is given to the protection of existing habitats, notably Culm grassland which only occurs in this area in the UK, and for protection of landscape quality.

Alder tree disease

When carrying out other duties the Agency will continue to report instances of this disease to the Forestry Authority. Our current advice is not to plant alder for fear of introducing the disease to new areas. We have produced a leaflet offering advice, available from our Bodmin office.

6. Actions

The following tables outline the actions needed to address the issues we identified in the Consultation Report. The issues and activities are not presented in any order of priority. Issues have been renumbered from the Consultation Report. Appendix 5 shows where issues listed in the Consultation Report are located in this plan.

The tables show the following information:

- Organisations which will implement the proposed activities, either in a lead role or as a key supporter.
- A timetable for the activity.
- An estimate of cost to the Agency over the next five years, where available. The initial 'U' means that no cost estimate is available at present.
- The financial years covered by this plan are represented by a single year, for example, '98' is the financial year April 1998 to March 1999.
- Those actions where we are not currently able to commit resources will remain empty.
- The man-days marked against actions is an indication of the trained resource that is likely to be required to fulfill the action.

In order for the Agency to make the best use of its available resources all work has to be prioritised. This may mean that lower priority work cannot be undertaken at a particular time. However, work identified in the plan can be reassessed should resources become available.

The following points should also be noted:

Our everyday work commits substantial resources to monitoring and managing the environment. Some of this work was explained in the Consultation Report.

Some actions will require feasibility studies and cost-benefit appraisal of options prior to work commencing. In some cases, depending on the outcome of these studies, further action may not be justified. The Environment Agency and the participating organisations have limited resources and powers, and some work may take longer than indicated owing to funding availability, government policy and more urgent priorities.

Should more issues become apparent during the life of this Plan, further actions will be added at succeeding Annual Reviews.

6.1

Effects of sewage discharges

There are a number of locations where monitoring has shown an environmental impact by consented discharges. In these locations we will progressively seek improvements to the discharge. However, we recognise the need for improvements to SWW's discharges to be prioritised through SWW's expenditure programme. We also seek support from local planning authorities in preventing any new development in the areas served by these works which would make the problem worse until improvement schemes are implemented.

Improvement works

Improvements are already planned and in progress at Crantock (Newquay) and Bude. Improvements for the Camel scheme (Padstow and Porthilly works) are now complete.

Year-round UV treatment at Perranporth STW came on line in May at the start of the 1998 bathing season.

Water quality

Detailed investigations at Mawgan Porth were undertaken during 1997 bathing season following failures of the EC Bathing Water Directive. This included additional monitoring of the River Menalhyl catchment and an extensive rainfall survey. A report is currently being finalised.

A rainfall survey of Porthcothan Stream was undertaken in 1996 following failure of the EC Bathing Waters Directive. A draft report is currently in preparation.

SWW will be completing a scheme at Newquay, which includes secondary treatment and ultraviolet disinfection, by the end of 1998. This level of treatment meets and exceeds the requirements of the UWWTD.

Each year we assess the monitoring results we have collected to ascertain compliance with RQOs and EC Directives. St Columb SSOs and a large caravan site on Wanson Water have been possible causes of past failures. The need for investigations will be prioritised once the 1997 results are fully assessed.

Table 1 Effects of sewage discharges

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Assess compliance with RQOs and LT RQOs	<i>The investigations will be prioritised once 1997 data is assessed</i>	Agency/ SWW	U						
Assess compliance with EC Bathing Waters Directive	<i>Sewerage improvements at Bude. There are possible links with sewage storm overflows and water quality problems are being investigated</i>	Agency/ SWW	U		●				
	<i>Investigate cause(s) and suggest remedial action at Mawgan Porth and Porthcothan</i>	Agency	U	10	●				
	<i>Investigate effectiveness of constructed reedbeds to resolve the effects of bacteriological quality of streams on Bathing Beach Directive failures, such as at Mawgan Porth</i>	Agency/ SWW/ landowners	30k	150 plus analysis	●	●			
Assess compliance with EC Urban Waste Water Treatment Directive	<i>New STW and sewerage improvements at Newquay</i>	SWW	U				●		

6.2

Safeguarding Special Areas of Conservation

There are three areas designated as candidate or possible Special Areas of Conservation (SACs) in North Cornwall.

The River Camel Valley and Tributaries is being notified as a Special Site of Scientific Interest (SSSI) because of its outstanding and varied wildlife interest. In addition to its possible SSSI status English Nature have recommended to the government that subject to the site becoming a SSSI it should be consulted on as a possible Special Area of Conservation (SAC) under the EC Species and Habitats Directive because of its importance for otters and bullheads. If Government accepts that recommendation there will be a period of consultation with owners/occupiers and other interested parties.

Tintagel-Marsland-Clovelly has been recommended to become a SAC because it is an outstanding example of Vegetated Sea Cliffs.

Newlyn Downs SSSI is proposed for its rare Dorset Heath. A recent planning application for a waste transfer station within the site has been withdrawn.

Consented discharges

There are a number of licensed discharges within the catchment. As part of any SAC designation we are required to review consents thought to impact on the SAC. The Agency seeks to ensure that through its activities, licences and authorisations it maintains and contributes to achieving favourable conservation status. One means of achieving this will be through the agreement of a Strategy and Consenting Protocol with English Nature.

We already have a number of designations in place against which we monitor and protect water quality (EC Freshwater Fish, Surface Water Abstraction and Dangerous Substances Directives). In addition, as part of this consultation exercise, we have set water quality targets using the River Ecosystem Classification.

Table 2 Safeguarding Special Areas of Conservation

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Review existing consents/licences and activities potentially affecting the proposed SACs	<i>Review relevant existing consents and licences impacting upon SAC areas in relation to designation</i>	<i>Agency/ SWW/ Private dischargers</i>	U			●			
Develop Strategy and Consenting Protocol for the River Camel SSSI/SAC which aims to achieve favourable conservation status for the system	<i>Develop a methodology for accumulative impact assessment in order that discharges and licences in candidate SACs can be reviewed appropriately</i>	<i>Agency/ EN</i>	U		●				
Part-fund a Camel SAC officer post		<i>Agency (plus others)</i>	10k		●				

6.3

Protection of habitats, wildlife and historic features

Conservation in its broadest sense should be an integral part of all activities, and many of the actions within this plan promote sustainability, or seek to make up for serious losses or impacts. However, additional, specific conservation actions are required.

Semi-natural habitat

Semi-natural habitat is a habitat or wildlife community that has been modified to a limited extent by man, but still consist of species naturally occurring in the area.

An inventory of all Cornish Culm grassland is being completed for the Cornwall Culm Measures Biodiversity Action Plan. It identifies and lists the total area of this habitat that remains. Further actions arising from the Cornwall Biodiversity recommendations include identifying funding for marsh fritillary and dormouse surveys.

Biological assessment

During spring and summer 1997 we undertook an intensive freshwater biological survey throughout the catchment. The assessment was undertaken to update the previous set of data. It included the application of new methods: Trophic Diatom Index (TDI) and Mean Trophic Rank (MTR). These methods were used for establishing a baseline to assess the impact of possible nutrient loads in sensitive catchments. The information gained contributed to the biodiversity audit and will provide baseline information.

Water level management

A Water Level Management Plan is currently being produced for Amble Marshes. The plan seeks to balance the needs of conservation, flood defence and agriculture.

Consultation was held in March 1997 with all landowners at this site to gauge the level of interest in carrying out works to enhance the nature conservation value of the site. It was generally felt that a significant scheme was unsuitable due to financial constraints, but it may be feasible to carry out more localised works in the near future. This possibility will be discussed with the relevant landowners.

Cornwall Biodiversity Action Plan

Conservation of habitats and species is co-ordinated through the production of Biodiversity Action Plans (BAPs). This process, which began at the Rio Earth Summit in 1992, enables us and other conservation bodies to prioritise and concentrate our efforts where they are most needed.

In Cornwall, the Cornwall Wildlife Trust (CWT), supported by the Agency and other groups, has produced the document 'Cornwall's Biodiversity Volume 1: Audit and Priorities'. This was published in June 1997, and together with digitised habitat, species and land use data for the whole county it will be a powerful tool for use in drawing up priorities for action. The extent of loss of various habitats between 1988 and 1995 can be measured as can the degree of threat to that remaining.

Within this catchment the key species and habitats which are particularly relevant to the activities in which the Agency has an involvement are shown in Table A. The table also shows major threats, where known. The table only gives an indication of the key nature conservation features of the catchment. For a full description of habitats and species the Cornwall BAP should be consulted.

Table A Key habitats and species

Key habitats	Species	Status	Threats
Boundary features e.g. Cornish Hedges, watercourses	ferns	National priority	Removal, neglect, poor management
Grasslands esp. maritime e.g. Amble Marshes	wildfowl	National priority	water level management
Heathlands , wet, dry, maritime e.g. Newlyn Downs	lower plants, Dorset Heath, invertebrates	Internationally important	Removal, neglect/undergrazing, burning, pond creation
Culm Grassland	marsh fritillary, whorled caraway, wavy leaved St Johns wort, barn owl, curlew etc.	Internationally important	drainage, waste spreading, tipping, pond creation
Freshwater - ponds, rivers/streams e.g. River Camel system	otters, bullhead, salmon, lower plants	International priority	Nutrient enrichment, changes in land use, runoff, water abstraction
Estuaries e.g. Camel, Gannel	wading birds	Locally important	Pollution, recreation
Maritime cliff slopes, shingle, rocky shoreline e.g. Tintagel, Marsland SAC	cliff vegetation, chough, large blue butterfly	Internationally important	Recreation, lack of grazing
Arable land - clifftop arable fields	skylark, rare arable weeds	Locally important	Herbicides
Bodmin Moor	moorland species including golden plover	Nationally important	Overstocking, recreation

The next stage of the Cornwall BAP process is to produce Action Plans for the most vulnerable and threatened species and habitats. By analysis of the digitised land cover data, as well as the more traditional monitoring techniques such as carrying out field surveys, the causes of habitat and species loss can be assessed.

The extent of loss or degradation of habitats between 1988 and 1995 varies between habitat types. Wetland habitat has suffered the greatest loss of all county-wide, with a decrease of over 7% during the study period, compared with a loss of 3% over the last decade for all habitat types. In addition to total loss, habitat quality has become degraded through neglect and fragmentation into smaller blocks.

It is widely believed that by looking after habitat its component species will be safeguarded also. This is true to a degree, but there are some species that need specific help too. An example is the otter. Otters have a relatively large territory and cannot be effectively conserved just by protecting a few sites. Measures such as ensuring acceptable water quality is achieved, and carrying out works at specific locations to prevent road kills need to be put in place also. The otter will be the subject of its own Species Action Plan.

Partnership schemes

Schemes exist to encourage appropriate management of biologically rich habitat. Countryside Stewardship, administered by MAFF, various SSSI Management Agreements agreed with English Nature, as well as positive advice on habitat issues by the Agency, FWAG, CWT and others helps to ensure conservation of this natural resource. The Uplands Bodmin Moor pilot project, which is seeking EU match funding, is an example of partnership working to preserve semi-natural habitat through environmental management. Schemes should target, as a priority, those areas and features noted as priorities in the Cornwall BAP (see Table A).

Invasive plant species

As a result of the Japanese Knotweed conference on 25th November 1997, organised by the Environment Agency and hosted by the National Trust, a co-ordinated control policy for Japanese Knotweed is being developed to prevent further spread and control of the existing areas. Representatives from County and District councils, the Agency, the National Trust, Cornwall Wildlife Trust, SWW, ECCI and many more were present at the conference.

The Agency has sponsored a countrywide survey of Japanese Knotweed which is being compiled by the Botanical Society of the British Isles, and will be available in a GIS format.

Agency flood defence maintenance teams have adopted the best practice for the control of Japanese Knotweed developed by the group. A leaflet explaining how to prevent the spread of Japanese Knotweed is available.

Swan mortality

Whilst investigating swan health and mortality on the Fal Estuary, archived tissue from dead mute swans from the Camel Estuary were investigated to provide scientific control birds from a 'clean' estuary. In most respects these birds were found to be normal except that they had grossly enlarged thyroid glands.

The cause is unknown and may be due to anthropogenic influences. The Agency with MAFF will seek to carry out post-mortem, histopathology, and tissue analysis on any further dead swans reported to us from the Camel Estuary in order to try and find the cause. No swans have been reported dead in the last 12 months.

Table 3 Protection of habitats, wildlife and historic features

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Implement Biodiversity Action Plans	<i>Launch biodiversity action plans, Summer 98. Set targets. Feed into existing and proposed environmental schemes i.e. Countryside Stewardship and Uplands Bodmin Moor pilot project</i>	Agency	10k p.a.		●	●	●	●	●
	<i>Promote new and repeat surveys for key species and habitats</i>				●	●	●	●	●
Draw up and implement where possible Water Level Management Plan for Amble Marshes		Agency/ landowners	U		●				
Promote eradication campaign for invasive plant species		knotweed group participants	U		●				

6.4

Freshwater and estuarine fisheries management

Background

Natural fisheries are important ecological assets and are also of commercial value for angling and netting. Fish are good indicators of the overall health of our rivers. We use information from our routine population surveys and fishing catch returns to assess the diversity and health of fish populations. We are currently involved in implementing a classification scheme following a research and development project which will enable us to set targets for the catchment and also to put the fisheries into a national context.

The Rivers Camel and Allen have been consistently recorded as being amongst the most productive rivers for salmon and sea trout in the South West. This is due to a combination of high water quality, suitable habitats and sufficient water flows. Non-intensive use of land adjacent to the rivers throughout much of their length contributes to this high productivity.

Low juvenile fish densities found during 1997 fisheries survey of the River Allen

Fisheries survey data recently gathered on the River Allen indicate a serious problem in both trout and salmon stocks on the River Allen catchment. Densities in some areas are considerably down on the 1994 survey. It is not thought that the drought of 1995 and subsequent dry winters are entirely responsible. The Agency will be carrying out investigations in 1998. The initial desk study has now been completed.

Poaching

Rigorous and high profile enforcement within the rivers, estuaries and coast needs to be maintained by the Environment Agency, Ministry of Agriculture, Fisheries and Food (MAFF) and Cornwall Sea Fisheries Committee (CSFC). Whilst the Agency endeavours to respond quickly to all reports of poaching, limitations to staff numbers and funding mean that we rely heavily on information from other bodies and the general public to alert us quickly to poaching incidents. We can then target resources effectively to combat the problem.

Bass fishery

Currently there is a difference in the size limit between bass caught within and those caught outside the Camel Estuary. Within the estuary we are the sea fishery authority and the minimum landing size is the nationally set 36 cm. Outside the estuary Cornwall Sea Fisheries Committee (CSFC) are the authority and the size is set by a local byelaw at 37.5 cm. CSFC have asked us to raise the minimum landing size limit to 37.5 cm to make enforcement easier. We have agreed to pursue this, and will be seeking permission from MAFF to create a new byelaw. External consultation will be required as part of this process.

MAFF are currently putting forward proposals to extend the bass nursery area to a line from Stepper Point to Pentire Point.

Introductions and escapees

Within the catchment there are stillwater lakes containing a variety of fish species not found within the river system. We are concerned about the occurrence and impact of fish escapees on native species. For example, serious diseases can be spread to wild populations and predation by alien species can cause damage.

Perch have also been found in the River Camel recently. Investigations into the origin of the fish are progressing.

Construction of instream structures

Whilst benefiting the river by creating deep water habitat, instream structures may cause flooding, erosion and prevent spawning if placed in inappropriate locations. The Agency is currently undergoing a review of current legislation and procedures for handling applications, including any implications of the designation of the River Camel system as a Special Area of Conservation (SAC). We are currently drawing up a protocol with South West Rivers Association to ensure a consistent and efficient approach to applications.

Potential improvements

Results from freshwater surveys have indicated low fish densities at some sites. We will carry out investigative work when resources allow.

Within the plan area there are several obstructions that are considered to prevent access of migratory fish and where action might be undertaken.

Thousands of tonnes of granite from De Lank Quarry prevent the free passage of migratory salmonids to the upper reaches of the De Lank River and prevents utilisation of a large area of potential sea trout spawning gravel. Removal of the stones is not appropriate. Local angling interests have proposed constructing a fish pass to circumvent the obstruction. This would be a huge undertaking and must be considered in the context of the proposed SSSI/SAC designations. Any proposals to change the existing brown trout fishery in the upper catchment will need full assessment and consultation.

Knowledge of fish populations

Listed fish species under the EC Habitats and Species Directive, such as shad species, sea lamprey, river lamprey, brook lamprey, bullhead and Atlantic salmon have all been identified within the plan area. We will gather further information on their presence and densities during our routine survey.

Rod catch information for sea trout on the Gannel, Porth, Menalhyl, Valency and Strat/Neet is limited. Therefore we would like to add these rivers to the national list of rivers which shows individual monthly records rather than a combined total for a number of rivers. This would give improved information for future fishery management.

Commercial bait collection

The collection of peeler crab/hard backed crab and digging of polychaete worms (such as lugworm and ragworm) in commercial quantities has been raised as an issue in the Camel Estuary Management Plan. Action will be co-ordinated through the Estuary Management Plan.

Cockle harvesting in the Camel Estuary

During 1996 a commercial enterprise harvested, by suction dredging, quantities of cockles from within the Camel Estuary. This caused concern about the impact of dredging on the cockle population as a whole and that of other organisms living on the estuary bed affected by the operation. Investigations revealed that there was no formal control which could be imposed on the dredgers during the period when dredging took place.

With suitable management these populations could support a sustainable fishery, to complement existing shellfish beds. We are currently working with PESCA, landowners, North Cornwall District Council, Cornwall Sea Fisheries Committee and the operators to manage a sustainable fishery.

Table 4 Freshwater and Estuarine Fisheries Management

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Investigate decline in River Allen fish stocks	<i>Electric fishing survey</i>	Agency	24k	180					
	<i>Fish tissue survey</i>								
	<i>Water quality sampling</i>								
Rigorous and high profile enforcement to prevent poaching		Agency/MAFF/CSFC	U	200	●	●	●	●	●
	<i>Create byelaw to increase minimum bass size limit</i>	Agency/MAFF							
Minimise effects of non-native fish species on the freshwater fishery	<i>Update database on distribution of non-native species within still water fisheries</i>	Agency		300					
	<i>Regular inspections of still water fisheries</i>	Agency	U		●	●	●	●	●
	<i>Monitoring of non-native escapees recorded during fisheries work</i>	Agency	U		●	●	●	●	●
	<i>Publicise the effects of escapees, regulations and hazards of fish disease</i>	Agency	U		●	●	●	●	●
	<i>Advise on measures to prevent escapees</i>	Agency	U		●	●	●	●	●
	<i>Produce joint protocol with South West Rivers Association by end June 1998</i>	Agency/SWRA			●				
Review and draw up protocol of best practice for positioning and construction of croys									
Increase fish numbers to target density in freshwaters	<i>Investigate causes of low fish numbers in certain rivers</i>	Agency	50k (Area wide)						
	<i>Identify areas for potential improvement</i>	Agency	part of above						
	<i>Survey obstructions to assess economically feasible actions</i>	Agency	part of above						

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Survey for EC Directive species	<i>Done as part of routine surveys</i>	Agency	U	250					
Investigate and promote appropriate regulation to ensure sustainability of cockles and co-located species in the Camel Estuary	<i>The Agency will seek to investigate the impact of different harvesting methods, the ecology of the Camel cockles and resolution of the ownership issues. Relevant legislation, through byelaw provision or other, will be used to ensure a sustainable stock, if found to be commercially viable, is maintained</i>	Agency PESCA/ landowners/ NCDC/ CSFC	5k						

6.5 Meeting current and future demand for water

The availability of water resources is a high profile topic. We are in a position to develop public awareness of this issue and guide people towards a more sustainable use of water.

The Environment Agency has a duty under the 1991 Water Resources Act to conserve, redistribute, augment and secure the proper use of water resources in England and Wales. In fulfilling this role the Environment Agency must also carry out its general duties of environmental conservation and have regard to the statutory obligations of water companies. Management of water resources development is planned over long time-scales, usually about 30 years. This allows sufficient time to bring additional resources on line ahead of any forecast potential supply demand deficit.

Normally water is supplied from the Colliford Strategic Supply Zone, however, at certain times local supplies are supported by imports of water into the catchment from Roadford Strategic Supply Zone which includes Upper Tamar Lake. Issues related to these sources will be discussed in the forthcoming Freshwater Tamar LEAP and other plans.

Public water supply - meeting 'normal' demand

The detailed Drought Management Plan for the Colliford Strategic Supply Zone (SSZ) has been incorporated into the recently agreed Colliford Operating Agreement (OA) and Operating Manual (OM) which has recently been reviewed. This establishes a staged programme of water conservation measures to be taken as a drought intensifies. These include operational management of public water supply sources, such as maximising the use of river abstractions within authorised limits to conserve reservoir storage; typical measures also include demand management and enhanced leakage control whilst more extreme measures are those such as hosepipe bans and drought orders / permits where these are deemed necessary.

The public water supply sources in the catchment are included within the Colliford OA and OM to ensure that the need for potentially environmentally damaging drought measures is minimised.

Increased water abstraction

South West Water are assessing the need for additional measures to help assist natural refill of Colliford Lake during the winter months. One option, in addition to the existing scheme using Restormel intake, may involve abstracting water from the Camel system. The Agency advocates the precautionary approach to any abstraction proposals and will examine water transfer schemes carefully to ensure that minimal environmental damage would result from their introduction. We would not approve the development of additional water resources without insisting upon water saving measures, such as reducing leakage. Any proposal must also properly consider the status of the River Camel as a Candidate Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI) as well as an important salmonid fishery.

Non-public water supply abstraction

It is possible that there may be local environmental problems associated with full uptake of the few consumptive private abstractions in the catchment. The Agency will continue to monitor the net commitment to private water abstractions and have regard to the total volume licensed. Future abstraction needs will continue to be addressed through the abstraction licensing procedure.

Table 5 Meeting current and future demand for water

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Ensure efficient use of water by water companies through demand management and leakage control	<i>Ongoing monitoring and consultation</i>	SWW/ Agency	U		●	●	●	●	●
Encourage consumers to undertake water saving measures	<i>Ongoing advice and publicity</i>	SWW/ Agency	U		●	●	●	●	●
Publish updated Water Resources Strategy	<i>Collation of data will begin following the production and public consultation of the water companies' Water Resources Plans</i>	Agency	U				●		

6.6

Generation and management of wastes

With the exception of household wastes, for which closely monitored collection and disposal contracts are in place, there is only sparse information on the types and quantities of wastes generated in Cornwall. Some estimates are being made as part of Cornwall County Council's waste management strategy in their Waste Local Plan for the County. The Environment Agency's forthcoming national survey of waste arisings will provide better data in future. The Agency is to prepare a Regional Waste Management Plan, based on the survey findings.

The Government has stated its intention to redefine Mining/Quarrying/Agricultural wastes as "controlled wastes" to be formally regulated by the Agency.

The Agency liaises with the Cornwall Waste Management Forum, a partnership with the six District Councils and the County Council, and works in collaboration with the Payback organisation in the set up of Waste Minimisation Groups. Through our regular contact with businesses we are advising firms on their environmental management systems including waste minimisation. The Agency has produced a Commercial Recycling Directory that will assist businesses in identifying recycling outlets for recoverable wastes. In time this will stimulate a need for new treatment and recovery facilities locally to provide a more sustainable alternative than just landfill disposal. These waste minimisation initiatives have enabled many companies to discover scope for cost savings whilst changing their approach to waste and other emissions.

Water pollution problems

We are liaising with Cornwall County Council and the Highways Agency to assess what improvements are necessary at Wheal Rose Landfill, a closed waste disposal site. The tip is suspected of causing water quality non-compliance.

Conce Moor is a closed waste disposal site run by Cornwall County Council. There was no form of containment on the site and the council are still involved in active management, irrigating leachate on the site. Leachate does escape, particularly into two streams which are culverted through the site, resulting in pollution. Cornwall County Council are currently undertaking site investigations to assess cost/benefits of possible remedial action.

Improvements have been carried out at Tiscott Wood landfill site over the last few years. The Agency has worked in co-operation with the operators to comply with the licence conditions. Monitoring of gas and leachate will continue to be carried out regularly.

Provision of waste facilities

The County Council's Waste Local Plan for Cornwall will identify the criteria for the provision of sufficient and adequate facilities as guidance to potential operators and to direct planning policy. Specific proposals will then be vetted by the County Planning Authority in consultation with the Agency.

There is an established hierarchy for planning of waste, from national strategy to regional and local planning. There is a requirement from the Environment Agency to produce a regional strategy to outline the current and future needs for waste management. This work will be undertaken in two distinct phases, firstly data on current requirements will be collected in a waste arisings survey. This information will also feed into the national strategy. The second stage is the production of the regional strategy. Due to pressures on facilities Cornwall County Council has had to embark on the production of a local Waste Strategy for consultation, ahead of national and regional plans. The survey is due to start this year.

The development of a waste minimisation plan for Padstow Harbour is being progressed through the Camel Estuary Management Plan.

Waste spreading to land

Poor waste management can result in pollution incidents. Waste applied to existing semi-natural habitats may result in a loss of conservation value through the potential build-up of nutrients in soil, surface or groundwater and decline of semi-natural vegetation. Certain controlled wastes spread on land for agricultural benefit are exempt from a formal waste management licence. This activity has developed in a particularly concentrated way around the Camelford/Otterham area.

This is an issue we feel needs reviewing in a comprehensive and integrated way to ensure that the activity does not cause undue impact. Such a review will involve landowners, spreaders, MAFF and other interested parties and will follow the production of new national guidelines to be produced later this year.

Sludge disposal to land

Land is already used for the disposal of agricultural and industrial wastes and sewage sludge. In 1998 the disposal of sewage sludges at sea will be prohibited by the EC Urban Waste Water Treatment Directive increasing disposal to land. Good management practices and the use of existing codes will mean this could benefit the land agriculturally, however there is a risk of pollution if care is not taken.

Table 6 Generation and management of wastes

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Management of wastes	<i>Encourage the development of necessary facilities, particularly those which recover value from wastes</i>	Agency	U		●	●			
	<i>Identify criteria for waste disposal sites in our response to the Waste Local Plan</i>		U		●				

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Draw up strategies for sustainable waste management	<i>Liaison with Cornwall Waste Management Forum, Payback and other initiatives</i>	Agency	U		●	●	●	●	●
	<i>Promote waste minimisation via distribution of commercial waste recycling directory to 250 businesses</i>			14	●				
	<i>Promote waste minimisation</i>				●	●	●	●	●
	<i>Implement relevant Waste Regulations</i>		U		●	●	●	●	●
Review of waste to land practices		Agency, landowners spreaders, MAFF	U		●	●			
Carry out National Agency Waste Arisings Survey		Agency	U		●				

6.7

Farming

Agricultural land covers approximately 93% of the catchment. There is a declining trend in the numbers and severity of pollution incidents relating to farming. This has resulted from the extensive, proactive pollution prevention work carried out by the former NRA and the subsequent positive response from the farming community. However, farming continues to have an impact on water quality and habitats within the catchment.

Habitat change

Surveys by Cornwall Wildlife Trust identified a high proportion of semi-natural habitat in the river corridor throughout the freshwater Camel system. Semi-natural habitat is an indication of less intensive farming and permits more habitat for wildlife. The linking of habitats by corridors of semi-natural habitat allows movement of wildlife, as well as providing buffer zones between working agriculture and the river.

Changes in farming practices, could erode the ecological quality of the river system. This could include the movement to more intensive agricultural practices which could result in increased sediment, nutrients and pollutants entering the rivers.

An initiative by the Farming and Wildlife Advisory Group in part of the Camel Valley has resulted in the production of whole farm plans and the implementation of various projects to improve management of and create new habitats especially alongside watercourses. Further evaluation of the benefits will indicate the potential to build upon the initiative.

Water pollution

The Benny Stream has significantly failed its long term River Quality Objective because of elevated levels of total ammonia. A possible cause is farming activities. Farm campaign work identified several problems which have been remedied and should result in future water quality improvements. We will continue to monitor the situation and investigate any future non-compliance.

Marginal failures of River Quality Objectives on the Issey Brook and the Rivers Allen and Neet are being investigated.

Table 7 Farming

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Preserve semi-natural habitat	<i>Identify levels and causes of habitat change</i>	CWT/ EN	U		●	●	●	●	●
	<i>Promote the retention of semi-natural habitat within the Camel river system through a Camel River Project; developing/ funding conservation management</i>	MAFF/ CCC/ EN/ Agency/ landowners	U		●	●	●	●	●
	<i>Support environmental management through the Uplands Bodmin Moor pilot project. This is seeking EU match funding</i>	Agency (and others)	U		●				
Monitor and investigate potentially polluting agricultural activities		Agency	U		●				

6.8

Nutrient enrichment of surface waters

We undertake chemical and biological monitoring using a number of classifications to determine whether water quality has an effect on river life. Where results indicate nutrient enrichment (eutrophication) we undertake investigations to identify the cause.

Trenance Boating Lake

Intermittent algal blooms (Green filamentous - *Cladophora* sp.) have occurred, interfering with the operation of the pedal boats. In order for the Agency to make the optimum use of its available resources all work is prioritised. At present we have no plans or resources to investigate Trenance and the Gannel estuary for causes of algal blooms.

Porth Reservoir

There have been algal blooms in Porth Reservoir and biological surveys have shown high nutrient loads in each of the three inflowing streams. We are carrying out baseline monitoring of the inflowing streams, reservoir and outflowing stream to identify principal sources of nutrients and effect. Monitoring will continue into 1999.

Possible high nutrient loadings in rivers

Preliminary results from biological surveys have also highlighted a high nutrient loading in the River Menalhyl at St Columb and the River Neet, especially at Hele Bridge. Low biotic scores were also recorded on Nanstallon Stream below Bodmin STW. The significance of these scores will be addressed when the complete data set is analysed.

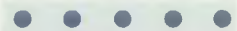
Table 8 Nutrient enrichment of surface waters

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Investigate causes of high nutrient loads to Porth Reservoir and take appropriate remedial action	<i>Baseline monitoring commenced May 1998</i>	Agency		50 in total	●	●			

Investigate causes of high nutrient loads in watercourses where indicated by biological monitoring

Agency

U



6.9

Development

Development has significant implications for the environment. The natural landscape can be altered, which could lead to flooding and introduce activities which bring a higher risk of pollution. New housing and industry increases the demand on services, including water supply, and result in increased amounts of waste.

Flooding

There are areas that have been troubled with flooding in the past which have been relieved by flood alleviation schemes. These were built by our predecessors and have allowed further development to go ahead in the respective subcatchments. However, there are still areas where further development will increase flood risk. In order to manage such development part of our ongoing work is to give development control advice to local planning authorities.

Proposals to develop in the catchments of the Bodmin Town Leat, River Paradise, River Jordan and the Lanivet Stream give us cause for concern and often results in us recommending refusal of planning permission because of the extra runoff the development will add to the watercourse. There are also problems at Helebridge, Camelford, Sladesbridge, Kestle Mill and several small localities around the catchment.

A programme of flood risk data survey, interpretation and provision to planning authorities is in hand, though currently predominantly for "main rivers" (see Glossary). Floodplain information for main rivers for the catchment has been made available to local authorities.

The Agency is encouraging the adoption of source control; the selective use of structures such as soakaways as part of a development to promote infiltration. These would help to replenish groundwater as well as reduce the erosion potential in watercourses, however their use must be site dependent.

Water pollution

There are a number of locations where consented sewage treatment discharges are having an environmental impact where we recommend development constraint, for instance at Newquay and Camelford. These are listed in our regularly updated consultation guides.

Water quality problems associated with urban runoff also occur. Surface water runoff from developments can carry pollutants such as oils. There are a number of methods of source control which can be designed into new developments and used with infrastructure such as interceptors to limit such pollution. These are highlighted on a video 'Nature's Way' ⁱⁱⁱ which is available from us.

The Environment Act introduced new duties on water service companies to provide public sewers for domestic properties that were built by June 20th 1995 in either rural or urban areas where there are environmental or amenity problems which exist or are likely to arise. This duty is subject to environmental, engineering and economic criteria. Any owners, occupiers, Parish or District Council may apply to SWW for a scheme. If there is a disagreement over the need for a scheme or the implementation of the new duty then the Agency will be called in to arbitrate. We are concerned that the cumulative effect of septic tanks draining to soakaways from the unsewered part of New Polzeath could cause environmental effects and would encourage exploration of first time sewerage options.

Review of old mineral permissions

The Environment Act 1995 introduced new requirements for Mineral Planning Authorities to carry out an initial review and updating of old mineral planning

permissions and the periodic review of all mineral permissions thereafter. The broad aims of the Review are to provide for improved operational and environmental practices and for the appropriate restoration of Mineral Sites through updated planning conditions, (although the nature of the new conditions will be constrained by a liability to pay compensation where they unreasonably prejudice the economic viability or the asset value of active mineral sites).

The Agency is a consultee in the process of determining new conditions, and this will require a thorough assessment of each site. Often sites, particularly those which have been dormant for many years, are of valuable nature conservation and archaeological interest. Clearly, many sites will be of geological interest, and may also have implications for surface and groundwater resources and quality. It is important that appropriate conditions are put in place to protect these interests.

Wildlife

New development is one of the major threats to semi-natural habitats and the species they support. Cornwall Wildlife Trust, through the 'LIFE' project, are mapping the levels of change in such habitats, and what they have been converted to.

The foreshore is a specific area subject to frequent development pressure in this catchment. We seek to prevent such areas being lost through development, as this results in a loss of wildlife habitat and can have adverse effects on currents and sedimentation patterns within the estuary as a whole. This issue has been raised in the Camel Estuary Management Plan.

The Special Area of Conservation proposed for the River Camel will generate conservation objectives followed by a scheme of management governing development within the intertidal area. Shoreline Management Plans are also likely to generate site specific option recommendations for coastal defence in this area.

Table 9 Development

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Promote source control through policies and increased awareness	<i>Agency is discussing site specific solutions at pre-planning stage with other interested parties</i>	Agency	U		●	●	●	●	●
Plan development to prevent increase of flooding risk	<i>Agency discusses site specific problems with planning authorities and other interested parties at pre-planning stage</i>	Agency	U		●	●	●	●	●
	<i>Produce Section 105 survey to identify flood risk in the catchment. Maps have now been sent to planning authorities</i>	Agency	U		●	●	●	●	●
Develop first time sewerage	<i>Highlight areas of concern regarding effects of unsewered areas. Develop strategy with local authorities</i>	Local Authorities/ SWW	U		●	●	●	●	●
Review all existing Planning Permissions for mineral extraction	<i>The Agency as consultee to the mineral planning authority will seek to include the best environmental option in each site review</i>	Mineral planning authority/ Agency	U		●	●	●	●	●
Preserve semi-natural habitat	<i>Resist any development which results in loss of semi-natural habitat as opportunity arises</i>	Agency	U		●	●	●	●	●
	<i>Re-create habitat where loss is unavoidable as opportunity arises</i>	Agency	U		●	●	●	●	●

6.10

Flooding

Major capital flood defence proposals can have potential effects on river processes and wetland habitats, as they involve engineering works in the floodplain or river valley. For any capital scheme we carry out an environmental assessment and incorporate mitigation and compensation elements in the design. This applies equally to fluvial or coastal defence schemes. The Shoreline Management Plan process will help to provide information on the latter.

Currently in our capital programme are schemes at Bodmin Town Leat, Boscastle, Sladesbridge and Polmorla near Wadebridge. Work is currently in progress to increase the standard of protection of the scheme at Bude and to complete the work at Wadebridge.

All schemes have to be justifiable on cost benefit grounds, to have obtained many necessary approvals and rely on funding being available. Hence the start dates given are our best estimate of the earliest opportunity to commence work on site.

Flood warning

Leaflets are available showing the main rivers and coasts where a flood warning service is provided. A region-wide study into the current flood warning Levels of Service is due to be completed by the end of 1999. The results from this study will identify locations where a service can be introduced or improved. Any improvements will be prioritised taking into account the needs of the whole region.

Table 10 Flooding

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Prevent flooding through construction of flood alleviation schemes	Construct scheme at Bodmin	Agency	1m		●	●	●		
	Construct scheme at Boscastle	Agency	488k				●		
	Construct scheme at Sladesbridge	Agency	527k					●	
	Construct scheme at Polmorla. Scheme in medium term plan. Progress will depend on further investigation and feasibility	Agency	115k						
Determine future flood warning strategy and programme	Complete flood warning levels of service study and take appropriate action	Agency	10k		●	●			

6.11

Sea level rise

Flood defence schemes are designed to accommodate future sea level rises. Information regarding the predicted rise in sea level is obtained from the Intergovernmental Panel for Climate Change. The net sea level rise estimates are then used to establish the anticipated effects over the life of a flood defence scheme. The approach is to design the works so that as sea level rise occurs the defences can be raised without having to rebuild the whole structure.

Raising the level of defences above that necessary today can only be justified where evidence of actual sea level rise supports the need. The current allowances for the South West Region of the Agency are a rise of 5mm/year until the year 2030 and 7.5 mm/year thereafter. A further potential effect of global warming is that of increased storminess, which could lead to increased wave action and annual rainfall, resulting in increased flooding.

We have designed our flood defence schemes with an allowance for a rise in sea levels. An annual review of the condition of existing sea defences is undertaken.

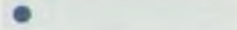
Flooding

Whilst we plan for a rise in sea level when constructing new and maintaining existing defences, flooding might occur in other locations. Design of our flood defences at Padstow and Wadebridge have had allowances for sea level rise included. Other smaller locations such as Mawgan Porth have evolved without such an allowance. The forthcoming Shoreline Management Plans (SMP) will recommend preferred options for the management of coastal defences, taking into account such changes. The Cornwall and Isles of Scilly Coastal Group, which comprises of Cornwall County Council, district councils, English Nature and the Agency, is overseeing the SMP process.

Ecological impacts

Intertidal habitats may be lost, unless they re-create naturally or through human intervention. Any intervention could have knock-on effects for other fringing habitats. Assessment of the potential for preservation or recreation at different locations, and consequences of each needs to be carried out.

Table 11 Sea level rise

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Make recommendations for the management of defences through SMP process	<i>The draft SMP for the north and south Cornish coasts is underway and is due to be complete in March 1999.</i>	<i>Kerrier DC - Lead</i>	33k	32					

6.12

Recreation

There is widespread recreational use throughout the catchment with a large proportion based on or around the water. Much of this can be absorbed without unacceptable impact on the environment or conflict between competing uses. However, incidences do occur where recreational activities need to be more carefully managed.

Canoeing

There is no statutory right to canoe on the River Camel upstream of the normal tidal limit. Below this point canoeing does occur and supports a rental business in Wadebridge. However, there is an interest from canoeists to canoe the freshwater part of the river under particular conditions which could only occur with the permission of the riparian owners, usually through an access agreement. Any agreement would need to be reviewed once the SAC conservation objectives are in place.

Dam construction

Members of the public construct small dams on part of the De Lank River during the summer months, when easily accessible parts of the river are popular with tourists. The removal of the larger stones from the riverbed deprives plants and animals of a micro-habitat. The use of turf exacerbates the erosion of the riverbank and contributes towards the siltation of the substrate. This seemingly innocent recreation could damage stretches of one of Cornwall's most pristine river habitats.

However, the issue is not clear cut. English Nature, amongst others, consider that the dams may be helping back up water into side channels and in doing so help to maintain a rich aquatic flora.

Camel Trail

The 25.5 km Camel Trail running through the Camel valley from Poley's Bridge to Padstow is now a premier site for recreation in the County with 350,000 visitors a year. The trail between Padstow and Dunmere is owned and managed by Cornwall County Council. From Dunmere to Poley's Bridge the trail is owned and managed by North Cornwall District Council.

The Camel system has a very high nature conservation status and it is important to ensure that wildlife does not become unnecessarily disturbed.

Repairs to 300 m² of the traditionally stone faced embankment supporting the trail along the estuary are currently underway.

Bude Canal

North Cornwall District Council are funding a scoping report for a feasibility study to look at the options for the restoration of features of the Bude Canal. The Agency is keen to have early input into these studies to ensure that the environmental implications are fully taken into account.

Motorised recreation

Recently, concerns have been raised about jet-skiing taking place in the Gannel Estuary. Any investigations into the scale of the problem and suggested solutions, such as voluntary codes of practice, will need to involve all interested parties.

Table 12 Recreation

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Management of Camel Trail	<i>Ongoing maintenance and management taking regard of the sites high conservation value</i>	CCC/ NCDC							
Consider restoration and management of Bude Canal		Bude Canal Trust							
Promote enhancements to Bude FAS	<i>Combine Bude Lights project with FAS repair</i>	Agency	5k		●	●			

6.13

Oil spill contingency planning

Through the Camel Estuary Management Plan it has been identified that there is a need to review existing contingency plans to enable rapid and effective response to an oil spill (hazardous cargo) incident. Such potential spills could come from land or water-borne sources inside or outside the estuary. Although those responsible have an existing contingency plan, it is currently being reviewed and measures strengthened.

Requirements

A working group comprising of Harbour Commissioners, English Nature, Environment Agency, District and County Councils has already been established. Sensitivity mapping of features requiring protection have been produced and booming points have been established. Principle areas for future development include:

Agreeing clean up methods - highlighting areas vulnerable to oil spills and proposing appropriate clean up methods,

Booming exercise to test the booming points,

Contingency planning - setting out agreed courses of action under different circumstances and as appropriate, to be drawn up after booming exercise.

It was hoped that the exercise would take place in 1998. The bodies concerned have only limited resources and unfortunately it has had to be delayed.

Table 13 Oil spill contingency planning

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Make contingency plans for oil spill emergency action	Carry out booming exercise	working group	U			●			
	Draw up contingency plan	working group	U						
	Establish suitable clean up methodology	working group	U						

6.14

Air quality

The Cornwall Air Quality Forum has been formed as one of 14 pilot areas nationwide. It is led by Carrick District Council, and has representation from all local authorities in the county and the Agency. We do not cover all aspects of air pollution but work closely with other regulatory bodies such as local authorities.

Table 14 Air quality

Actions	Tasks	Action By	Cost to Agency		Financial Year				
			(£)	Man days	98	99	00	01	02
Co-ordinate the actions of local authorities in Cornwall with regard to the National Air Quality Strategy	Hold regular co-ordination meetings	Cornwall Air Quality Forum	U	6	●	●	●	●	●

6.15

Targets for river water quality

Quality of surface waters

We aim to maintain and, where appropriate, improve the quality of controlled water for all those who use it. This is achieved by setting water quality targets for the catchment based on standards laid down in EC Directives and River Quality Objectives (RQOs) to protect recognised uses (see Appendix 3).

River Quality Objectives

In the Consultation Report we proposed RQOs for the whole catchment. Following the consultation process, these targets have now been finalised.

Long term RQOs have been set for some stretches in the catchment. These are objectives we would like to achieve, but the actions required to achieve them are long term and are not achievable in the short term. We will use these long term RQOs as a basis for setting consents for new discharges and planning for future water quality improvements.

We 'set-aside' data where high concentrations of metals are caused by the natural geology of the catchment or historic mining activity. This allows us to protect good water quality shown by other determinands in the RE classification.

RQO compliance will be assessed annually. We will investigate all significant RQO failures. Marginal RQO failures will be investigated if they persist. Long term RQO failures will be investigated if the required water quality improvements for RQO compliance are unidentified.

River Quality Objectives

River	Stretch Name	RQO	LTRQO
Gannel	Source-Perrose	3	2
	Perrose-Gwills Gauging Station	1	
	Gwills Gauging Station-Normal Tidal Limit (NTL)	2	
Trencreek	Source-Boating Lake	3	2
Newlyn East Stream	Source-Gannel Confluence	1	
Benny Stream	Benny Mill Bridge-Gannel Confluence	2	1
East Wheal Rose Stream	Source-East Wheal Rose Bridge	1	
	East Wheal Rose Bridge-Benny Stream Confluence	3	1
	Porth Reservoir-Melancoose	2	1
Porth Stream	Melancoose-Normal Tidal Limit	2	1
	Source-St. Columb Major Bridge	1	
	St. Columb Major Bridge-Below St. Columb STW	2	
Menahyl	Below St. Columb STW-St. Mawgan Bridge	2	1
	St Mawgan Bridge-Normal Tidal Limit	2	
	Source-Slaughterbridge	1	
Camel	Slaughterbridge-Camelford Bridge	1	
	Camelford Bridge-Pencarrow	2	1
	Pencarrow-Gam Bridge	2	1
	Gam Bridge-Wenford	1	
	Wenford-Below Wenford Driers	2	1
	Below Wenford Driers-Above Scarletts Well STW	1	
	Upstream Scarletts Well STW-Upstream Nanstallon STW	1	
	Upstream Nanstallon STW-Nanstallon Bridge	2	
	Nanstallon Bridge-Grogley	1	
	Grogley-Normal Tidal Limit	1	
	Source-Normal Tidal Limit	2	
	Source-Normal Tidal Limit	2	
	Source-Knightsmill Bridge	2	1
Allen (Camel)	Knightsmill Bridge-Normal Tidal Limit	1	
	Source-Camel Confluence	1	
Ruthern	Source-Above Pendewy Bridge	1	
St. Lawrence Stream	Above Pendewy Bridge-Camel Confluence	1	
	Source-Camel Confluence	1	
Dunmere Stream	Source-Bradford Bridge	1	
De Lank River	Bradford Bridge-Camel Confluence	1	
	Upstream Stannon China Clay-Downstream Stannon China Clay	1	
Stannon Stream	Downstream Stannon China Clay-Camel Confluence	1	
Crowdy Stream	Crowdy Reservoir	1	
Davidstow Stream	Source-Camel confluence	1	
Valency	Source-Mean High Water	2	1
Wanson Water	Source-Mean High Water	2 (2000)	
Strat	Source-Hele Bridge	2	
	Hele Bridge-Normal Tidal Limit	2	
	Source-Normal Tidal Limit	3	
Bude Canal	Source-Langford Bridge	2 (2000)	
Neet	Langford Bridge-Strat Confluence	2	
Jacob Stream	Source-Neet Confluence	2	
Combe Valley Stream	Source-Normal Tidal Limit	1	
Marsland Water	Source-Normal Tidal Limit	1	

(2000) - indicates objective must be complied with by the year 2000.

7. Appendices

Appendix 1 Duties, powers and interests of the Environment Agency

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

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership
Water Resources The Agency has a duty to conserve, redistribute, augment and secure the proper use of water resources.	<ul style="list-style-type: none"> • Grant or vary water abstraction and impoundment licences on application. • Revoke or vary existing licences to reinstate flows or levels to surface-waters or groundwater which have become depleted as a result of abstraction, and are subject to a liability for compensation. • Secure the proper use of water resources through its role in water-resources planning, the assessment of reasonable need for abstractions and promotion of more efficient use of water resources. • Monitor and enforce abstraction and impoundment licence conditions. 	<ul style="list-style-type: none"> • The more efficient use of water by water companies, developers, industry, agriculture and the public and the introduction of water-efficiency measures and suitable design and layout of the infrastructure. 	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.
Flood Defence The Agency has a duty to exercise general supervision over all matters relating to flood defence throughout each catchment.	<ul style="list-style-type: none"> • Control, through Land Drainage consents, development or construction of a structure that would affect the flow of an ordinary watercourse (Water Resources Act, 1991 Section 109, Land Drainage Act, 1991 Section 23). • Produce flood risk maps for all main rivers under S105 of Water Resources Act 1991. • Undertake works to main rivers using permissive powers. • Issue flood warning relating to main river to the public, local authorities and the police. • Consent mineral workings within 16 metres of main rivers. 	<ul style="list-style-type: none"> • Granting of planning permission throughout a catchment but especially floodplains where development can significantly increase flood risk. This permission is granted by Local Planning Authorities. • Installation of surface water source control measures e.g. flood attenuation structures. • Supervising the maintenance of ordinary watercourses which is a Local Authority remit, but may impact on main rivers. • Installation of buffer zones which reduce flood risk and have significant environmental benefits. • Urban and rural land use and measures that can reduce flood risk or the need for watercourse maintenance. 	As a statutory consultee on planning applications within main-river floodplains, the Agency offers advice based on knowledge of flood risk. It also advises on the environmental impacts or proposed floodplain development. The Agency will encourage best practice, including source-control measures and common standards, among Local Authorities and riparian owners to protect and enhance the environment. The Agency works with the civil authorities to prepare flood-warning dissemination plans and supports their endeavours to protect communities at risk.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership
<p>Water Quality</p> <p>The Agency has a duty to monitor, protect, manage and, where possible, enhance the quality of all controlled waters including rivers, groundwaters, lakes, canals, estuaries and coastal waters through the prevention and control of pollution.</p>	<ul style="list-style-type: none"> • Issue discharge consents to control pollution loads in controlled waters. • Regulate discharges to controlled waters in respect of water quality through the issue and enforcement of discharges consents. • Prosecute polluters and recover the costs of clean-up operations. 	<ul style="list-style-type: none"> • The control of runoff from roads and highways. This is a Highway Agency duty. • The greater use of source-control measures to reduce pollution by surface-water runoff. • Prevention and education campaigns to reduce pollution incidents. 	<p>The Agency will liaise with Local Authorities, developers, the Highways Agency, industry and agriculture to promote pollution prevention and the adoption of source-control measures. As a statutory consultee on planning applications, the Agency will advise Local Planning Authorities on the water-quality impact of proposed developments.</p>
<p>Air Quality</p> <p>The Agency has a duty to implement Part 1 of the Environment Protection Act 1990.</p>	<ul style="list-style-type: none"> • Regulate the largest technically-complex and potentially most polluting prescribed industrial processes such as refineries, chemical works and power stations including enforcement of, and guidance on, BATNEEC and BPEO. • Have regard to the government's National Air Quality Strategy when setting standards for the releases to air from industrial processes. 	<ul style="list-style-type: none"> • The vast number of smaller industrial processes which are controlled by Local Authorities. • Control over vehicular emissions and transport planning. 	<p>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.</p>
<p>Radio-active Substances</p> <p>The Agency has a duty under the Radio-active Substances Act 1993 to regulate the use of radio-active materials and the disposal of radio-active waste.</p>	<ul style="list-style-type: none"> • To issue certificates to users of radio-active materials and disposers of radio-active waste, with an overall objective of protecting members of the public. 	<ul style="list-style-type: none"> • The health effects of radiation. 	<p>The Agency will work with users of the radio-active materials to ensure that radio-active 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 radio-active waste creates no unacceptable effects on the food chain.</p> <p>The Agency will work with the Nuclear Installations Inspectorate to ensure adequate protection of workers and the public at nuclear sites.</p> <p>The Agency will work with the HSE on worker-protection issues at non-nuclear sites.</p>

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.	<ul style="list-style-type: none"> • Vary waste management licence conditions. • Suspended and revoke licences. • Investigate and prosecute illegal waste management operations. 	<ul style="list-style-type: none"> • The siting and granting of planning permission for waste management facilities. This is conducted by the waste industry and Local Planning Authorities. The Agency, as a statutory consultee on planning applications, can advise on such matters. 	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.	<ul style="list-style-type: none"> • Regulate the remediation of contaminated land designated as special sites. • Prevent future land contamination by means of its IPC, Water Quality and other statutory powers. • Report on the state of contaminated land. 	<ul style="list-style-type: none"> • Securing with others, including Local Authorities, landowners and developers, the safe remediation of contaminated land. 	The Agency supports land remediation and will promote this with developers and Local Authorities and other stakeholders.
Conservation The Agency will further conservation, wherever possible, when carrying out water-management functions; have regard to conservation when carrying out pollution-control functions; and promote the conservation of flora and fauna which are dependent on an aquatic environment.	<ul style="list-style-type: none"> • The Agency has no direct conservation powers, but uses its powers with regard to water management and pollution control to exploit opportunities for furthering and promoting conservation. 	<ul style="list-style-type: none"> • The conservation impacts of new development. These are controlled by Local Planning Authorities. • Protection of specific sites or species, which is a function of English Nature. The Agency does, however, provide advice to Local Authorities and developers to protect the integrity of such sites or species. • Implementation of the UK Biodiversity Plan for which it is the contact point for 12 species and one habitat. 	The Agency supports action to sustain or improve natural and man-made assets so that they are made available for the benefit of present and future generations. Many development schemes have significant implications for conservation. The Agency will work with developers, Local Authorities, conservation bodies and landowners to conserve and enhance biodiversity.
Landscape The Agency will further landscape conservation and enhancement when carrying out water-management functions; have regard to the landscape when carrying out pollution-control functions; and promote the conservation and enhancement of the natural beauty of rivers and associated land.	<ul style="list-style-type: none"> • The Agency must further the conservation and enhancement of natural beauty when exercising its water-management powers and have regard to the landscape in exercising its pollution-control powers. 	<ul style="list-style-type: none"> • The landscape impact of new development, particularly within river corridors. This is controlled by Local Planning Authorities. 	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.

Agency Duty	The Agency has powers to:	The Agency has an interest (but no powers) in:	Partnership
Archaeology The Agency has a duty to consider the impact of all of its regulatory, operational and advising activities upon archaeology and heritage, and implement mitigation and enhancement measures where appropriate.	<ul style="list-style-type: none"> • The Agency must promote its archaeological objectives through the exercise of its water-management and pollution-control powers and duties. 	<ul style="list-style-type: none"> • Direct protection or management of sites of archaeological or heritage interest. This is carried out by LPAs, County Archaeologists and English Heritage. 	The Agency will liaise with those organisations which have direct control over archaeological and heritage issues to assist in the conservation and enhancement of these interests.
Fisheries The Agency has a duty to maintain, improve and develop salmon, trout, freshwater and eel fisheries.	<ul style="list-style-type: none"> • Regulate fisheries by a system of licensing. • Make and enforce fisheries byelaws to prevent illegal fishing. • Promote the free passage of fish and consent fish passes. • Monitor fisheries and enforce measures to prevent fish-entrainment in abstractions. • Promote its fisheries duty by means of land-drainage consents, water abstraction applications and discharge applications. 	<ul style="list-style-type: none"> • The determination of planning applications which could affect fisheries. 	Many development schemes have significant implications for fisheries. The Agency will work with anglers, riparian owners, developers and Local Authorities to protect fisheries.
Recreation The Agency has a duty to promote rivers and water space for recreational use.	<ul style="list-style-type: none"> • The Agency contributes towards its recreation duty through the exercise of its statutory powers and duties in water management. 	<ul style="list-style-type: none"> • Promotion of water sports. This is carried out by the Sports Council and other sports bodies. 	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.

Appendix 2 Consultees who responded to the public consultation

- Bude Canal Society
- Camel Valley Preservation Society
- Campaign for the Protection of Rural England
- Clean Rivers Trust
- Cornish Federation of Sea Anglers
- Cornwall Archaeological Unit
- Cornwall County Council
- Countryside Commission
- Cornwall Sea Fisheries Committee
- Devon and Cornwall Police
- English Nature
- Farming and Rural Conservation Agency
- Forestry Authority
- Inland Waterways Association
- MAFF
- Newquay Town Council
- North Cornwall District Council
- NFU
- RSPB
- Ramblers Association
- St Mabyn Parish Council
- St Minver Highlands Parish Council
- Surf to Save

Further written responses, including questionnaires, were also received from members of the public. Other comments were received at the manned displays.

Appendix 3 River Quality Objectives

The Environment Agency has set water quality targets for all rivers. These targets are known as **River Quality Objectives (RQOs)**, introduced in May 1994, and are used for planning the maintenance and improvement of river water quality. RQOs establish a defined level of protection for aquatic life. Achieving RQOs will help to sustain the use of rivers for recreation, fisheries and wildlife, and protect the interests of abstractors. RQOs provide a basis for setting consents to discharge effluent into rivers, and to secure investment for improvements to the quality of discharges. They also guide decisions on the Agency's other actions to control and prevent pollution. The water quality classification scheme used to set RQO planning targets is known as the **River Ecosystem** scheme. The River Ecosystem scheme replaces the **National Water Council (NWC)** scheme, which was first introduced in the late 1970s.

The River Ecosystem Scheme

The River Ecosystem scheme provides a nationally consistent basis for setting RQOs. The scheme comprises five classes which reflect the chemical quality requirements for communities of plants and animals in our rivers. The standards defining these classes reflect differing degrees of pollution by organic matter and other common pollutants.

River Ecosystem classes can be summarised as follows:

- **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 population.

The River Ecosystem scheme takes forward the core standards from the old NWC scheme, but also incorporates new standards and firm rules on how the scheme should be applied. These are described in detail in the document *Water Quality Objectives: Procedures used by the National Rivers Authority for the purpose of the Surface Waters (River Ecosystem) (Classification) Regulations 1994*, available from the Water Quality Planning departments at our Regional Office in Exeter. Current and long term River Quality Objectives for river stretches are shown on Map 2.

Appendix 4

Sites of Special Scientific Interest

Bedruthan Steps and Park Head, Trebetherick Point, Pentire Peninsula, Tintagel Cliffs, Boscastle to Widemouth and Steeple Point to Marsland Mouth are coastal sites which support a mix of maritime grassland, maritime heath, scrub and rocky shore communities. Many locally distributed plants and animals occur in these extreme conditions, a number of which are listed in the Red Data Books. Parts of some of these sites are of national geological importance also.

Trevose Head and Constantine Bay, and **Rock Dunes** support species-rich sand dune communities, along with other maritime vegetation types. The former site holds what is thought to be England's only population of White Sandhill Snail.

Borlasevath and Retallack Moor, Rosenannon Bog and Downs, Retire Common and Bodmin Moor North are inland sites comprising a variety of heathland and wetland habitats including dry heath, valley mire and blanket bog. They are home to specialised and uncommon species of plant and animal. Bodmin Moor is the most southerly upland in the UK and is an important area for breeding and wintering birds more commonly found in Wales and the north.

Amble Marshes is a wetland site in an arm of the Camel Estuary. It is noted as an important haven for wintering wildfowl and waders, and is developing into a valuable dragonfly site also.

St Nectan's Glen is a humid woodland/stream site with a rich moss and liverwort community, including a species listed on Schedule 8 of the Wildlife and Countryside Act.

The remaining 8 SSSIs in the site - **Trevone Bay, Stepper Point, Harbour Cove, Belowda Beacon, Mulberry Downs Quarry, Bude Coast, Duckpool to Furzey Cove and De Lank Quarry** - have been designated for their national geological value. Most of them reflect the extremely visible exposures along the coast which greatly aid our understanding of the formation of the south west peninsula.

8. Glossary

ABSTRACTION

Removal of water from a surface or groundwater source of supply.

ADIT

Gently sloping passage from mine workings into valley areas to allow water to drain out of the working (the downstream entrance is called the adit portal).

ARISINGS

Quantities of waste being generated.

CONSENT

Discharge consent: A statutory document issued by Environment Agency under Schedule 10 of Water Resources Act 1991 to indicate any limits and conditions on the discharge of an effluent to controlled water.

Land drainage consent: Development proposals in a watercourse such as culverting, bridging, sewer outfalls etc. require the formal consent of the Agency under the Land Drainage or Water Resources Acts.

CONTROLLED WASTE

Is waste from household, commercial or industrial sources, it may be solid or liquid. It does not have to be hazardous or toxic.

CORNWALL WASTE MANAGEMENT FORUM

The Forum consists of representatives from the six District Councils, as the waste collection authorities, County Council, as the waste disposal authority and planning authority, and the County Councils waste disposal contractor, and the Agency.

DEEMED CONSENT

Discharges to tidal waters that commenced before 1987 for which applications were submitted in 1987. Consents were deemed to have been granted unconditionally until the determination of the application becomes final.

DETERMINAND

That which is to be determined or measured.

DROUGHT ORDER

Drought Orders are made by the Secretary of State upon application by the Environment Agency or a water undertaker, under powers conferred by Act of Parliament, to meet deficiencies in the supply of water due to exceptional shortages of rain. The terms and conditions under which Drought Orders may be obtained are given in Sections 73-81 of the Water Resources Act 1991 and Sch 22 S139 of the Environment Act 1995. Drought Orders are sub-divided into 'Ordinary' and 'Emergency' Drought Orders. A Drought Order could contain provisions such as; to authorise abstraction from an unlicensed source, override the conditions on an existing abstraction licence, limit the amount of water which may be taken from a source, vary discharge conditions or might allow the prohibition of use of water for particular purposes, to allow a ban on non-essential use of water (for example in car washes) or to introduce the use of stand-pipes.

ECOSYSTEM

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

EUTROPHICATION

The enrichment of water by nutrients, especially nitrogen and/or phosphorous, which causes: 1) accelerated growth of algae and higher plants, 2) changes in the ecological balance, and 3) deterioration in water quality.

FLUVIAL

Pertaining to river flow and its wide variance through the effects of rainfall, geology and land use.

LICENCE OF ENTITLEMENT

Licence granted under Schedule 26 of the Water Act 1989 in respect of a previously exempt abstraction greater than 20m³/day which required a licence by virtue of an amendment to Section 24(2) and (3) of the Water Resources Act 1963. (This only covered particular domestic and agricultural uses, including fish farming and flows to domestic amenity ponds).

MAIN RIVER

Some, but not all, watercourses are designed as 'Main River'. 'Main River' status of a watercourse must first be approved by MAFF. Statutory (legally binding) maps showing the exact length of 'Main River' are held by MAFF in London and the Environment Agency in Area and Regional Offices. The Environment Agency has permissive powers to carry out works to improve drainage or protect land and property against flooding on watercourses designated as 'Main River'. Watercourses not shown as Main River are known as ordinary watercourses. The permissive powers to carry out works on these watercourses rests with the local authority.

NUTRIENT

Conveying, serving as, or providing nourishment.

PAYBACK

The consultancy service of Groundwork Trust for Devon & Cornwall. They carry out waste audits for business.

RIPARIAN OWNER

Owner of riverbank and/or land adjacent to a river. Normally owns riverbed and rights to at least midline of channel.

RIVER CORRIDOR

Land which has visual, physical or ecological links to a watercourse and which is dependent on the quality or level of the water within the channel.

SPECIAL WASTES

These are the most hazardous wastes, they include hazardous or toxic wastes. Some common special wastes are; acids, alkaline solutions, oil fly ash, industrial solvents, oily sludge, pesticides, pharmaceutical compounds, photographic chemicals, waste oils and wood preservatives.

MANAGEMENT AND CONTACTS:

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

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

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ENVIRONMENT AGENCY REGIONAL OFFICES

ANGLIAN

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

SOUTHERN

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

NORTH EAST

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

SOUTH WEST

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

NORTH WEST

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

THAMES

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

MIDLANDS

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

WELSH

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



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

ENVIRONMENT AGENCY GENERAL ENQUIRY LINE

0645 333 111


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

ENVIRONMENT AGENCY EMERGENCY HOTLINE

0800 80 70 60



**ENVIRONMENT
AGENCY**



All enquiries to:
Cornwall Area
Sir John Moore House
Victoria Square
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Tel: 01208 78301
Fax: 01208 78321