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# local environment agency plan

## FAL AND ST AUSTELL STREAMS

### ACTION PLAN

DECEMBER 1997



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AGENCY



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# map 1



### Map 1 - The Fal and St Austell Streams Catchment



Information correct as of December 1996

Fal and St Austell Streams Local Environment Agency Plan

## Foreword

This Action Plan sets out the actions 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.



**GEOFF BOYD**  
Cornwall Area Manager

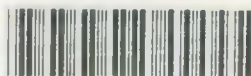
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## 1. Vision

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 Environment Planning

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 Environment Planning 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 Fal & St Austell Streams 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 1997 to April 2002.

The Action Plan will be monitored and reported annually. Future annual reviews will include any new issues.

### 2.2.1 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 PR Burnett	Wadebridge and District Angling
Mr C Underwood	South West Water Services Ltd
Dr MJ Pemberton	Area Environment Group, China Clay Industry
Mr KH Hitchens	Fishing Interests, Recreation
Mr T Mutton	Salmon and Trout Association
Mr WL Collins	Helford VMCA
Mr A Martin	National Farmers Union
Mr NJ Jeans	Tregothnan Estate Office
Mr R Nunn	Goonvean Ltd
Mr R Brooke	Roche Angling Club
Miss DJ Clark	Regional Flood Defence Committee
Mr T Edwards	Cornwall Wildlife Trust
Mr A Hopson	Truro Port Health Authority
Mr T Grove-White	Carrick District Council
Mr S Field	Restormel Borough Council
Mr R Reid	County Environmental Services Ltd

### 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 Fal & St Austell Streams LEAP Consultation Report was launched on 19th March 1997 jointly with the Falmouth Bay & Estuaries Initiative Strategic Guidelines. The consultation period closed on 19th May 1997. During this time the Consultation Report was promoted by:

- Radio, television and press reports;
- Displays at Falmouth, St Austell and Truro public libraries, with Agency staff available to answer questions on specified days;
- The distribution of over 500 copies of the reports;
- Meetings with interested parties to discuss the plan.

#### 3.2 Results of Consultation and Further Action

A Statement on Consultation was produced in June 1997 and was distributed to all respondents. Copies are available on request from the Bodmin office.

Thirty-five written responses were received of which 19 were questionnaire replies. The respondents included statutory organisations, industry, landowners, sport and recreation groups and the public (Appendix 2).

Several organisations indicated their strong support for the concept of integrated environmental management of the catchment. 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. Two 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.

Many 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.

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:

- Effects of sewage discharges
- Protection of habitats, wildlife and historic features
- Meeting public water supply demand
- Generation and management of wastes
- Impact of development
- Impact of agriculture and horticulture
- Impacts of china clay industry
- Impact of metalliferous mining activities
- Managing water related recreation

We list actions to tackle these issues, amongst others, in the Activity Tables in Section 6.



## 4. Catchment overview

In the east of the catchment china clay extraction, the dominant activity, has a significant affect on the area. Historic mineral mining has left a legacy of old mines and adits, particularly in the Carnon Downs area. The remainder is rural in character, ranging from moorland headwaters, to arable farmland, meadowland and extensive woodland in the lower reaches of the rivers.

### Landscape, wildlife and archaeology

The catchment displays a diverse range of landscapes. The western and eastern parts of the catchment display the effects of past and present mineral working. In the east the skyline is dominated by vast white conical or flat-topped china clay waste tips. Scrub covered slopes lead down to deep turquoise pools at the tips' bases. Wetland and willow scrub provides a contrast to the modern large-scale clay workings nearby, including Goss Moor which supports the largest inland wetland in Cornwall.

The central part of the catchment comprises of intricate estuaries with considerable areas of mudflat exposed at low tide. Oak woodland fringes much of the estuary, frequently reaching right down to the water's edge. Inland, undulating farmland, mostly put to dairying, is criss-crossed by a network of Cornish hedges. Various species of wader and waterfowl use the Fal and Helford estuaries as feeding sites, and a number of organisms are unique to the catchment.

At the far south of the catchment the geology and climate of the Lizard support heathland vegetation that is unique in Britain, and supports many extremely rare plants and invertebrates.

The activities of past generations have shaped the urban and rural landscapes of the area. Bronze Age remains survive quite extensively on the Lizard and on the uplands of Carnmenellis and Hensbarrow. During Medieval times the rivers and estuaries, particularly the Fal, were of great importance to the local inhabitants in the winning, working and export of metals. Metalliferous mining in the Carnon area reached its peak in the 18th and 19th centuries. Many historic features remain, from stamps and smelt sites to aqueducts and loading quays.

### Economy

The china clay industry dominates the economy and the landscape of the St Austell area. It is the largest private employer in Cornwall, generating jobs directly in the winning, processing and distribution of china clay and indirectly through ancillary industries and general commerce.

The whole of the catchment is very heavily visited and tourism is an important part of the local economy. Falmouth is an important port for both recreational and commercial vessels as it is a deep water port and can refit ships of considerable size.

### Fisheries

The Fal Estuary is known for its oyster beds. The catchment contains a variety of freshwater fisheries, with most watercourses supporting populations of fish including brown trout, and some supporting migratory sea trout and salmon. The estuaries and coastal waters contain a wide variety of fish and shellfish.

### Farming

Agricultural land accounts for just over 93% of the catchment area of which the majority, approximately 73%, is grass. Dairying is the predominant farming activity, with mixed farming and rough grazing taking place on poorer land. Bulb growing is concentrated in a number of sites in the catchment, causing increased demand for water abstraction and risk of diffuse inputs of fertilisers, pesticides and herbicides in the locality.

### Recreation

Much of this catchment has a high level of water-related recreational use, focused strongly on the coast and the sheltered waters of Carrick Roads. Activities such as surfing, snorkelling, water skiing, diving and windsurfing take place along much of the coast. The beaches within the plan area are a valuable recreational and economic asset.

### Built environment and development plans

The catchment lies within areas administered by Restormel Borough Council, Carrick District Council and Kerrier District Council. All local plans covering the catchment area have incorporated a number of policies for positively protecting the environment.

Seasonal population increases put pressure on infrastructure and services.

### Mineral extraction

The largest industry in the east of the catchment is the china clay industry. The extraction and processing of china clay dominates the landscape and economy of the St Austell area. The china clay deposits centred in the St Austell area are of national importance as, together with smaller deposits found on Dartmoor, they are the only source of china clay in the UK. China clay is the UK's second largest mineral export. The broad area occupied by the industry is approximately 60 km<sup>2</sup>, consisting largely of the granite uplands associated with Hensbarrow Downs.

There are six active quarries in the catchment working a variety of minerals: aggregates, hedging stone and ornamental serpentine.

Parts of the catchment carry the legacy of historic metalliferous mining. The most important mining area was the River Carnon subcatchment, which was one of the most extensively mined areas in the South West. The effects of this industry are still being felt in the environment today, the most notable example being at Wheal Jane.

### Flood defence

In recent years much has been done to protect the city of Truro, Penryn, St Austell and the Par/St Blazey Area. Extensive improvements and flood defence schemes have been undertaken on all main rivers in this catchment. We provide a flood warning service for the major rivers in the catchment.

### Water supply and abstractions

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 the Fal and St Austell Streams catchment lies within the Colliford Strategic Supply Zone and so is fed by sources both within and outside the plan area. Within the catchment the company operate three reservoirs, Stithians, College and Argal. Stithians is also supported by a licensed surface water abstraction used to augment (top up) reservoir storage. The operation of Stithians to partly meet demands in the west of Cornwall means that the area supplies need to be supported by imports of water from Colliford Lake and the River Fowey via the Cornwall Spine Main.

Public water supply accounts for the greatest proportion of surface water abstracted. The largest proportion of licensed groundwater use is by the china clay industry although general agriculture use is more widespread and accounts for the largest number of licences.

### Effluent disposal

Within the catchment there are 31 SWW sewage treatment works of which 6 are small works which receive no trade effluent and have descriptive consents (where no numerical quality standards are imposed).



There are 22 consented private sewage treatment works discharging over 5m<sup>3</sup>/day of effluent, within the catchment.

### **Waste management**

There are two landfill sites in the catchment which have been licensed to accept domestic, commercial and industrial wastes: United Mines near St Day, and Tresize near Goonhilly.

United Mines landfill is the largest operating landfill site in Cornwall, a 100 acre site within an area formerly extensively mined for metalliferous ores. The site accepts approximately 200,000 tonnes per annum and receives all household waste from the west of Cornwall. Tresize landfill is now closed. Some 500,000 tonnes of putrescible and other wastes were deposited there.

In addition to United Mines and Tresize landfills, there are eleven licensed landfill facilities in the catchment, nine of which are currently operating. Seven of these accept 'semi-inert' wastes and two sites accepting 'strictly inert' wastes.

### **Waste spreading to land**

The spreading of controlled wastes to land used for agriculture is classified as a waste disposal operation and is regulated through the Waste Management Licensing Regulations 1994. Wastes which can be spread without the need for a Waste Management Licence are listed in Appendix 4.

There are 7 sites identified within the catchment that are currently notified under regulations and of these, 5 are receiving domestic septic tank wastes only.

All sites used for these activities are the subject of a pollution risk assessment and a detailed analysis is required for all wastes other than septic tank sludge.

### **Recycling**

Within the plan area there are a number of initiatives by local authorities to promote the reduction and re-use of waste. Cornwall County Council provides recycling points at major supermarkets throughout Cornwall. Local District Councils target waste minimisation through further recycling points, community schemes, kerbside collections in selected areas and school/local community competitions. Other District Council initiatives in the catchment include; the Falmouth Green Centre, St Columb Scrap Storage and the provision of home composters.

### **Integrated pollution control**

There are three Integrated Pollution Control (IPC) processes within the catchment, a power station, ship repair yard and dispersant manufacturer.

## 5. Protection through Partnership

### 5.1

#### Working with others

The Agency is well placed to influence many of the activities affecting the water 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 regeneration 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 :

- British Canoe Union
- Carrick District Council
- Cornwall County Council
- Cornwall Wildlife Trust
- Department of Environment, Transport and Regions
- English China Clays International
- English Nature
- Falmouth Bay and Estuaries Initiative
- Falmouth Docks
- Farming and Wildlife Advisory Group
- Highways Agency
- Kerrier District Council
- MAFF
- Restormel Borough Council
- Royal Society for the Protection of Birds
- South West Water Services Ltd

### 5.2

#### 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".

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.

### 5.3 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, mineral and waste 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. Planning liaison is the link between the Agency's functions and local authority planners.

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

## 6. Activity Tables

The following activity 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, are listed under the heading 'Action By'.
- A timetable for the activity.
- An estimate of cost to the Agency over the next five years, where available. The letter '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, '97' is the financial year April 1997 to March 1998.

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 Quality of surface waters

We aim to maintain and, where appropriate, improve the quality of 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
- River Quality Objectives (RQOs) to protect recognised uses (see Appendix 3).

### 6.1.1 River Quality Objectives

In the Consultation Report we proposed RQOs for the whole catchment. Following the consultation process, these targets have now been finalised (see Map 2).

We have revised the RQO for the Hicks Mill Stream from RE2 to RE3. The Hicks Mill Stream contains high levels of metals, due to natural geology and historic mining activity, and this has resulted in the stream having very few organisms living in it. As we are unable to do anything to reduce the levels of metals in the stream we have set a more realistic RQO of RE3.

Long term RQOs have been set for 16 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 (See Appendix 3).

We 'set-aside' data where high concentrations of metals or low pH values are caused by the natural geology of the catchment. This allows us to protect good water quality shown by other determinands in the RE classification. In the Consultation Report we highlighted 9 stretches where we will 'set-aside' data. The source of both are due to natural geology and historic mining activity. 'Set-aside' stretches are shown on Map 2.

### 6.1.2 Causes of poor water quality

Our monitoring under various EC Directives and water quality objectives may identify problems where we do not know the cause, such as the marginal RQO failure for copper on the Lestraines River. In such cases we normally undertake investigations to identify the cause.

### 6.1.3. Designation of Porthcurnick Beach under EC Bathing Waters Directive

Porthcurnick Beach will become a designated bathing water under the EC Bathing Waters Directive in 1998. Two crude sewage discharges owned by South West Water (Portscatho 1&2) affect water quality at Porthcurnick beach although the limited data available suggest that Mandatory and Guideline standards are met on most occasions. However, these discharges were identified for improvements during Asset Management Plan 2 (AMP2) before designation of the beach and are due to receive primary treatment by 2005. Following designation it will be necessary to review the treatment requirements for these discharges. This may lead to an increased level of treatment being required during Asset Management Plan 3 (AMP3), which covers the period 2000 to 2010 and will therefore incorporate AMP2 schemes planned for 2000 to 2005.

### 6.1.4 Designation of new stretches under EC Freshwater Fish Directive

We are investigating the possibility of recommending several new stretches to the Department of the Environment for them to designate under the EC Freshwater Fish Directive to provide better protection of salmonids. These are on the Fal, St Austell and Par Rivers, Kestle, Portholland, Percuil, Manaccan, Tywardreath and Trevella Streams.



## 6.2

## Effects of sewage discharges

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

### 6.2.1 Falmouth Sewage Treatment Scheme

Secondary treatment is to be provided at Falmouth by the end of the year 2000, under the terms of the EC Urban Waste Water Treatment Directive (UWWTD). However, there is a proposed interim scheme which will improve the water quality of the EC Bathing Waters at Gyllingvase, Swanpool and Maenporth. This interim scheme will also improve, or remove, a number of unsatisfactory sewage discharges in the Penryn River. An additional aim of the interim scheme is to ensure that there will be NO deterioration of water quality in Carrick Roads, Penryn River and Percuil River.

Under the proposed interim scheme, sewage which is currently discharged untreated off Middle Point and screened (by 10 mm screens) off Pennance Point, will receive preliminary treatment by passing through 6 mm screens which will be operated all year. The screened sewage will then be discharged through a new, tidally phased outfall, with diffuser ports, approximately 600 m north by north west of Black Rock. As part of the scheme a large storage tunnel has been constructed beneath Falmouth. This tunnel will be used in the interim scheme to: 1) provide the storage required to enable the discharge to be tidally phased and 2) to provide storage of storm sewage in wet weather. In addition, a number of unsatisfactory discharges in the Penryn River will either be improved or removed.

There have been a number of representations to the Department of Environment, Transport and Regions (DETR) requesting that they call in the consent determination for the interim scheme, due to concerns over water quality in Carrick Roads. The Agency cannot issue a consent and the new outfall cannot be used until the DETR has made a decision on the interim scheme.

### 6.2.2 Eutrophication

We have identified part of the Fal Estuary as a candidate sensitive area under the UWWTD. The qualifying discharge is Truro (Newham) STW. It includes the Truro and Tresillian Estuaries from the A39 Road Bridge on the Truro River and from Tresillian on the Tresillian River to the top of Carrick Roads.

### 6.2.3 Organotin

Sampling is underway to determine the source/s of Tributyltin (TBT) detected from the SWW outfalls at Middle Point and Pennance Point.

Table 1

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
1.1 Assess compliance with RQOs and LT RQOs and review authorisations as required	<i>The Agency will seek improvements to Ponsanooth STW and will seek to include ammonia in the consent standards for St Austell North STW</i>	Agency/ SWW	U					

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
1.2 Assess compliance with EC Bathing waters Directive and carry out remedial work as required	<i>Investigate the RQO failure for DO and Ammonia in the Carnon River</i>	Agency	U					
	<i>Implement planned improvements to St Austell (Menagwins) STW. Improved secondary treatment was installed in 1997 (UV disinfection operates during bathing season)</i>	SWW	U	●				
	<i>Undertake improvements to the outfalls and sewerage systems in the Falmouth area (see 6.2.1)</i>	SWW/DETR	U	●			●	
	<i>Improvements to be made to storm sewage discharges at Coverack</i>	SWW	U					
	<i>Secondary treatment to be installed on the Mullion outfall, under terms of UWWTD</i>	SWW	U					
	<i>Negotiations are underway to provide first time sewerage at Porthallow</i>	Householders/ SWW/ Agency	U	●				
1.3 Improve sewage discharges to meet the requirements of the UWWTD	<i>Transfer of crude discharge from Mevagissey to St Austell (Menagwins) STW, where there is secondary treatment and UV disinfection will commence in 1997. Occasional releases from Mevagissey will occur after high tides and storms. Under terms of UWWTD the entire flow needs to be transferred by 2005. This will result in an improvement in water quality at the non-designated bathing water at Mevagissey</i>	SWW	U	●				
	<i>Improve discharge at Portloe by 2005 under terms of UWWTD. This may improve aesthetic water quality, but probably not bacterial quality, at the non-designated bathing water at Portloe</i>	SWW	U					
	<i>DETR will determine whether the Truro/Tresillian/Fal Estuary should be designated as a Sensitive Area under UWWTD. (The direction of future actions will depend upon the outcome of this determination)</i>	DETR	U	●				
1.4 Designation as Sensitive Area under UWWTD								
1.5 Continue monitoring to determine trophic status of the Fal/Tresillian/Truro estuary		Agency		●	●	●	●	



Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
1.6 Identify and control sources of TBT in SWW discharges at Middle Point and Pennance Point	<i>Funding for this work is tripartite between SWW, Falmouth Docks and ourselves</i>	Agency/ SWW/ Falmouth Docks		●				

## 6.3 Water based recreation

### 6.3.1 Managing recreational pressures

In order to manage recreational use, conservation, and commercial interests there is a need for a co-ordinated approach from a number of bodies. A more detailed review of multiple use in the Fal Estuary has been carried out in a report produced for the Falmouth Bay & Estuaries Initiative (FBEI).

### 6.3.2 Canoeing

Canoeing currently takes place on a tidal reach of the River Fal where there is a right of passage. However, there have been complaints about access to the water in this area and we feel it would be beneficial to pursue an Access Agreement with the British Canoe Union (BCU) and landowners. Any agreement would need to consider the interests of riparian owners and the quiet nature of the area which contributes to its wildlife and landscape value.

Table 2

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
2.1 Support and implement, where appropriate, the actions in the FBEI management plan		FBEI/ Agency/ Recreational Bodies and Users	U	●	●	●	●	
2.2 Set up canoe access agreement		BCU/ landowners						

## 6.4 Fisheries management

### 6.4.1. Poaching

Poaching of salmonids and juvenile bass occurs within the Fal and Helford Estuaries. Rigorous and high profile enforcement within the rivers, estuaries and coast will be maintained by ourselves, Ministry of Agriculture, Fisheries and Food (MAFF) and Cornwall Sea Fisheries Committee (CSFC). This is ongoing core work.

### 6.4.2 Bass fishery

Currently there is a difference in the size limit for bass caught within and outside the estuary. Within the estuary the minimum landing size is 36cm. Outside the estuary the size is 37.5cm. To resolve this anomaly we would need to seek permission from MAFF to create a new byelaw to raise the minimum landing size limit to 37.5cm.

Traditional ebb netting for sea fish takes place within the Bass Nursery areas. This is technically illegal and exemption permits would be needed to regularise the existing situation. We will look at this issue in consultation with the relevant parties.

#### 6.4.3 Natural predation

Natural predation of fish by mammals and birds occurs throughout the fishery. At present it is not known if this is having a significant impact on fish stocks. We work with fisheries owners and MAFF to advise on preventative measures. We will not support the licensed killing of predators until and unless proof of serious commercial damage has been established, and killing proven to be the most effective means for preventing significant loss to fish stocks.

#### 6.4.4 Disease

Diseased bullheads have been found in the River Allen Catchment during NRA surveys in 1992 to 1995. Although at some sites large numbers of bullheads were infected no dead fish were found. The cause of the disease is not known, nor its normal occurrence levels. The bullhead is listed on Annex II of Species and Habitats Directive.

#### 6.4.5 Introductions and escapees

We are concerned about the occurrence and impact of fish escapees on native species and our routine work involves inspecting the stillwater lakes in the catchment and monitoring non-native escapees recorded during fisheries surveys.

Table 3

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
3.1 Create byelaw to increase minimum bass size limit		Agency	U			*		
3.2 Extension of bass nursery area		MAFF	U					
3.3 Legalise appropriate ebb netting practices	<i>Need to identify netsmen and investigate the legal situation</i>	Agency	2k					
3.4 Investigate causes of bullhead disease, minimise risk of spreading parasite and take appropriate actions following investigation	<i>A sample is currently with the MAFF fish diseases laboratory. No bullhead population within other Truro rivers appears to have been infected by this fish disease nor do any other fish species</i>	Agency / Brampton laboratory	4k					
3.5 Prevent introduction of non-native fish species into freshwater and the marine environment	<i>Update database on distribution of non-native species</i>	Agency	5k					
	<i>Publicise regulations and hazards of fish disease</i>	Agency	Core					



## 6.5 Improving freshwater fisheries

Wild fisheries are important natural assets and are also of commercial value for rod fisheries. Several rivers support self-sustaining populations of fish species given special protection by the European Union Species and Habitats Directive 1992 such as salmon, bullhead and brook lamprey. There needs to be protection and promotion of these fish species and their habitat.

### 6.5.1 Knowledge of fish populations

There are several watercourses in the plan area where little or no data on fish populations is available. This limits our ability to set objectives to improve fisheries. We will carry out investigative work to ascertain appropriate actions.

The age of salmonids can be determined by scale readings. Data on sea trout age classes is only available for the River Tresillian. We would encourage anglers to send in scales and catch details of all rod caught fish to assist us in gathering information on stocks.

Eels are now monitored as part of our routine surveys.

### 6.5.2. Areas of potential improvement

There are several watercourses that could support a larger fishery than at present. The identified sites need assessment followed by appropriate measures to improve the fishery.

### 6.5.3. Obstructions

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

### 6.5.4. Rod catch records

Rod catch records for the plan rivers are sparse and only cover the Fal, Tresillian and Kennal for a limited number of years. Rod catch data has also been collated in different ways. Currently the Fal rod catch data is amalgamated with data from many other small Cornish rivers. Monitoring of salmon and sea trout catches from individual rivers will aid future management.

Table 4

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
4.1 Improve knowledge of fish populations	Carry out fish survey on: <i>St Austell River</i> <i>Par River</i> <i>Percuil River</i>	Agency	10k		●			
	Investigate causes of poor trout densities on: <i>Portholland Stream</i> <i>Porthoustock Stream</i>	Agency	U					
	Send details of rod caught fish, including scales, for analysis	Anglers	1k		●			
4.2 Assess areas of potential fisheries improvement and carry out appropriate works	Investigate suitability for fisheries repopulation following recent water quality improvements on: <i>Gwindra Stream</i> <i>Hembal Stream</i> <i>Caerhayes Stream</i> <i>St Keverne Stream</i>	Agency	U	●				

Actions	Task	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
4.3 Carry out improvements to obstructions to the passage of migratory fish	<i>Habitat improvements on Tywardreath Stream</i>	Agency	U					
	<i>Assess weirs at: Virginia Weir, River Fal Grampound Town Weir, River Fal crump weir on River Kenwyn</i>	Agency	U					
	<i>Investigate efficiency of fish passes at flood alleviation scheme on River Allen</i>	Agency	5k		●			
	<i>Assess trash dams on River Tresillian and remove where appropriate</i>		U					
	<i>Investigate feasibility of recording catches from individual rivers</i>	Agency	U					
4.4 Improve recording of rod catch data	<i>Monitor salmon and sea trout catches from individual rivers</i>	Agency	U					

## 6.6

## Shellfisheries

There are a number of shellfish beds within the Fal and Helford Estuaries, representing a valuable natural and economic resource. The Environment Agency monitors water quality under the EC Shellfish Waters Directive. Sampling under the EC Shellfish Hygiene Directive is undertaken by the Port Health Authority (PHA) in conjunction with MAFF to determine the bacteriological quality of shellfish flesh. MAFF provide the classification from samples supplied by the Port Health Authority.

### 6.6.1 'Red Tide' in the Fal Estuary

Since the toxic bloom of *Alexandrium tamarense* that occurred in 1995 in the Fal Estuary, similar blooms have become an annual event. Studies have been undertaken to discover the trophic status of the estuary in relation to the Truro (Newham) waste water treatment works discharge. These studies indicate signs of eutrophication in the estuary and that the discharge has a major influence on nutrient levels during the summer months.

The Agency is currently proposing that the estuary is designated as a sensitive area (Eutrophic) and if the designation is granted by DETR then nutrient reduction will be required.

Since the 1995 study, monitoring on behalf of MAFF by the Falmouth & Truro Port Health Authority has monitored bloom and toxin levels. This has resulted in the enforcement of prohibition notices on the collection of shellfish, crabs, lobsters and shrimps where there is a risk of poisoning to consumers. The Agency will consider measuring the impact on the algal community of any scheme that might influence the nutrient status of the Estuary.



### 6.6.2 Marine Conservation

As the Fal and Helford Estuaries are designated a candidate Special Area of Conservation there may be a requirement to review current fishery status/regulations to assess any impact on the (as yet to be established) conservation objectives. Under the Environment Act there is a mechanism to create Fisheries Byelaws for reasons of marine conservation. The current division of legislative responsibility for shellfishing is unclear. There is a requirement to clarify the legal situation and to establish the viability of current Agency byelaws.

### 6.6.3 Bait-digging

Bait-digging is perceived by some as being on the increase in some parts of Cornwall. Almost all of the increase is associated with commercial bait collectors. This may be having an adverse effect on ecology and landscape locally, and research would be invaluable to ascertain whether such use is sustainable.

Table 5

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
5.1 Review data to identify causes of exceedences of EC Shellfish Waters Directive standards	<i>In 1994 the standard for saline zinc concentrations under the Directive was exceeded three times in the Fal Estuary, Turnaware Bar site. This failure in 1994 is most likely due to the discharge from the County Adit. The next phase of the Wheal Jane project will include an assessment of the efficacy of improvements to treatment (see 6.11 )</i>	Agency						
5.2 Investigate possible causes of downgrading of sites under EC Shellfish Hygiene Directive	<i>Two surveys in 1996 failed to discover unusually high counts of coliforms in the water columns above the designated shellfisheries. This would appear to support the fact that there is still no proven link between bacteria in the water and bacteria in the shellfish flesh. This view on the linkages is not shared by the Falmouth and Truro Port Health Authority. Further investigations will be scheduled</i>	Agency						
5.3 Review current fishery status and regulations and rationalise where appropriate	<i>The designation of Fal and Helford Estuaries as a candidate SAC may require assessment of current status and its effects on conservation objectives arising from designation</i>	Agency/ Harbour commissioners/ Port Health Authority/ MAFF/ Environmental Health Depts.	5k					
5.4 Assess effects of bait-digging	<i>Identify relevant interest groups to set up working group Map current areas of digging and quantify crop Research effects</i>	Foreshore owners, Bait gatherers, EN, Agency, Others						

## 6.7

## Sea level rise

## 6.7.1 Shoreline Management Plans

The primary purpose of a Shoreline Management Plan is to set out sustainable coastal defence policies and to set objectives for the future management of the coast.

The Agency is a member of the coastal group that is preparing the Rame Head to Lizard Point Shoreline Management plan. This group comprises the County Council and all maritime authorities. The plan is currently programmed to be drafted by December 1998 and will contain the agreed management option for each section of the coast. The potential impact of works at one location on the regime at other remote locations is considered in these plans.

The modification of existing flood defence schemes is an ongoing activity. The Agency updates the Sea Defence Survey annually. The adequacy and condition of defences is considered as are future improvement works. The Agency liaises with maritime local authorities over their plans for defences for which they have responsibility.

All sea and tidal defence improvement schemes take into account the best estimates of sea level rise as agreed between the Agency and MAFF. The timing of implementing increased defence levels is decided by taking into account the costs and additional benefits derived from these measures.

## 6.7.2 Ecological Impacts

The Shoreline Management Plan (SMP) will identify vulnerable sites and the Cornwall Biodiversity Action plan (See page 19) will address management options required to ensure conservation is fully considered. SMPs do not extend far into estuaries, in future there may be a requirement for similar studies within estuaries.

## 6.7.3 Poldhu Cove

The removal of sand at Poldhu Cove and the threats from coastal erosion and recreational pressure to historic and natural conservation features have been highlighted as concerns in the Lizard to Lands End Shoreline Management Plan; any identified actions will be carried forward by the coastal group. Kerrier District Council are proposing a Coastal Protection Order 1997, in respect of the whole of the Kerrier coastline.

Table 6

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
6.1 Prepare Rame Head to Lizard Point Shoreline Management Plan	Stage 2 contract awarded	CCC, LPAs, Agency lead - Kerrier	38k total	●	●			
	Stage 3 planned to be drafted by December 1998	CCC, LPAs, Agency lead - Kerrier	U		●			

## 6.8

## 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.



### 6.8.1. Goss Moor Water Level Management Plan

A key area for wildlife within this catchment is Goss Moor, much of which is a National Nature Reserve. This is predominantly a wetland site and so the Agency will continue to play a major role in its management.

For such wetland sites in England and Wales, formal strategies are being produced in order to clearly guide management with particular reference to the management of water tables. These are known as Water Level Management Plans and they seek to balance the needs of conservation, flood defence and agriculture. Some work has already been done on the site to adjust the water table and to partly restore the degraded channel of the River Fal.

### 6.8.2. Fal and Helford Special Area of Conservation (SAC)

Management schemes will be established on marine Special Areas of Conservation as a key measure in meeting the EU Habitats Directive. Each scheme will be prepared jointly by a group of relevant authorities having statutory powers over the SAC. As a framework, they will contain measures necessary to safeguard the important marine features and through which the authorities will carry out their duties.

There are a number of licensed discharges within the catchment. As part of the SAC designation we are required to review those which are likely to impact on the SAC.

### 6.8.3 Disposal of dredgings at Gweek

During autumn 1997 a considerable amount of dredging was carried out at Gweek boatyard. Dredgings were tipped on saltmarsh and mudflats close to Gweek, which caused concern from residents and conservation bodies.

The site is within an Area of Outstanding Natural Beauty (AONB), Cornwall Nature Conservation (CNC) site, Helford Voluntary Marine Conservation Area and 400 metres upstream of the proposed Site of Special Scientific Interest (SSSI) / candidate SAC, and some remedial works are necessary. We are currently working with Cornwall County Council and the boatyard on the details of what exactly these works should entail.

### 6.8.4 Wintering wildfowl on the Fal Estuary

There is perception that the number of wildfowl wintering in the Fal Estuary have declined in recent years. The Agency is currently discussing this issue with other interested parties, in particular the Seabird and Water Focus Group, and reviewing appropriate actions to be taken.

### 6.8.5 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, a broad based steering group, of which the Agency is a member, has produced the baseline document 'Cornwall's Biodiversity Volume 1: Audit and Priorities' <sup>8</sup>. This was published in June 1997, and together with digitised habitat, species and landuse 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 the table below. 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.

Key habitats	Species	Status	Threats
<b>Wet Woodland</b> e.g. Goss Moor, Breney, Redmoor	lower plants, invertebrates	National priority	Underevaluated, neglected
<b>Boundary features</b> e.g. Cornish Hedges, Water courses	ferns	National priority	Removal, neglect, poor management
<b>Grasslands</b> esp. maritime e.g. Lizard coastline	lower plants, invertebrates	National priority	Neglect, poor management
<b>Heathlands</b> , wet, dry, maritime e.g. Lizard, Goss Moor, Breney, Redmoor	lower plants, Cornish Heath, invertebrates	Internationally important	Removal, neglect/undergrazing, burning, pond creation
<b>Wetlands</b> , fens, reedbeds, mires e.g. Lizard, Goss Moor	otter	National priority	Drainage, neglect/undergrazing, pollution, pond creation
<b>Freshwater</b> - ponds, rivers/streams		National priority	Drainage, pollution
<b>Estuaries</b> e.g. Fal, Helford	wading birds and other species	Internationally important	Pollution, development, recreation, dredging, sea-level rise
<b>Maritime</b> cliff slopes, shingle, rocky shoreline		Internationally important	Sea-level rise, development, coastal protection, pollution
<b>Inshore marine</b> saline lagoons, reefs e.g. Swanpool, Carrick Roads	seagrass, maerl	Nationally important	Sea-level rise, pollution, dredging, recreation, development
<b>Offshore marine</b> e.g. Mullion Island, Gull Rock, open sea		Nationally important	Pollution, recreation, fishing
<b>Metalliferous mine sites</b>	lower plants, bats	Nationally important	Insensitive land reclamation
<b>China clay workings</b>	dragonflies		Habitat loss
<b>Arable land</b>	skylark, arable weeds		Pesticides, herbicides

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, biological records and field surveys, the extent of habitat and species loss can be assessed, then causes, actions and targets identified.

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 fragmented 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 also needs to be put in place. The otter will be the subject of its own Species Action Plan.

#### 6.8.6 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, Farming and Wildlife Advisory Group (FWAG), Cornwall Wildlife Trust (CWT) and others helps to ensure conservation of this natural resource. These schemes should target, as a priority, those areas and features noted as priorities in the Cornwall BAP.

Table 7

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
7.1 Produce water level management plan for Goss Moor		Agency/ English Nature/ Tregothnan	U	●				
7.2 Implement scheme of management for Fal and Helford candidate SAC		Relevant Authorities	U					
	<i>Produce Nature Conservation Objectives by December 1998</i>	EN	U	●	●			
7.3 Review consents, licences and operations that impact on SAC		Agency	U					
7.4 Investigate causes of decline in wading birds using the Fal Estuary and take appropriate actions where necessary		RSPB/ CBWPS/ English Nature/ Seabird and Water Focus Group/ Landowners	2k	●	●	●		
7.5 Support Cornwall Biodiversity Initiative and Biodiversity Action Plans for Key species and habitats	<i>Produce an Action Plan for Wetlands by September 1998</i> <i>Target: To ensure no further loss of wetland habitats</i> <i>Target: To identify and restore natural drainage regime to one degraded wetland site by 2000</i>	Agency, CWT	U	●	●			
	<i>Produce an Action plan for Heathlands by June 1998</i> <i>Target: To ensure no further loss of heathland habitat</i>	EN	U	●	●			

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
7.6 Work with partnership bodies and landowners to enhance natural environment	Produce an Action Plan for boundary features, particularly hedgerows and field margins by June 1998	CWT	U	●	●			
	Produce a Farmland Species Action Plan by June 1998	RSPB	U	●	●			
	Produce a generic Seabirds and Wader Action Plan by June 1998	RSPB	U	●	●			
	Produce biodiversity targets for Metalliferous mine sites in the catchment	EN, Agency, CWT	U	●	●			
	Produce a management plan for the Carnon Valley to ensure that its biodiversity potential is maximised by September 1998							
	Produce biodiversity targets for Fal and Helford Estuaries	EN/ Agency/ CWT	U					
	Produce biodiversity targets for coastal zone	EN/ Agency/ CWT	U					
	Target: Identify and restore two degraded coastal sites by 2002							
	Produce biodiversity targets for the china clay district	EN/ Agency/ CWT	10k					
	Produce biodiversity target statement for inclusion within ECCI Code of Practice							
	Produce Species Action Plans by 2003	EN/ CWT	5k	●	●	●	●	●
	Status of a number of species within the catchment need clarifying							
	Utilise LIFE data to identify sites where existing blocks of priority habitat can be linked	Agency/ EN/ CWT	30k	●	●	●	●	●
	Undertake research into wet woodland to enable appropriate management	Agency/ others	10k		●			
	Improve information on pond creation, through the Agency 'Pond Form', surveys, reviews, best practice	Agency/ FWAG, CWT	2k	●				



## 6.9

## Farming

There is a declining trend in the numbers and severity of pollution incidents relating to farming. This has probably resulted from the extensive, proactive pollution prevention work carried out in the past by the NRA, and the subsequent positive response from the farming community. However, farming continues to have an impact on water quality within the catchment through diffuse pollution.

We monitor and assess compliance with EC Directives and River Quality Objectives as part of our core work and will investigate effects from farming that contribute to non-compliance. No specific campaigns are planned at present. A farm campaign in the Caerhays Stream catchment was carried out following EC bathing water directive failure at Portluney 1991.

Part of the Fal Estuary is being recommended by the Agency to DETR for designation as a Sensitive Area (Eutrophic) under the Urban Waste Water Treatment Directive which aims to control direct discharges. If designated as such, nutrient inputs from qualifying discharges to the Sensitive Area (Eutrophic) may need to be reduced. Additionally, the same area is being considered by the Agency for recommendation as a Polluted Water (Eutrophic) under the Nitrates Directive which seeks to control diffuse sources (including agriculture) of nitrogen. If designated as a Polluted Water (Eutrophic) we might request MAFF to seek controls over some agricultural practices.

#### 6.9.1 Bulb growing

We have placed a number of additional monitoring points in the catchment area to observe the impact of bulb growing. Once data is collected an assessment will be made as to the appropriate way forward.

#### 6.9.2 Waste spreading to land

Although considerable progress towards reducing pollution risks from waste spreading to land activities has been made in the last two years, there are still areas of concern. 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.

Table 8

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
8.1 Investigate effects of bulb growing and take actions as appropriate	Survey in progress	Agency		●				
8.2 Review of waste spreading to land operations		Agency/ landowners spreaders/ MAFF			●			

## 6.10

## China clay

The extraction and processing of china clay dominates the landscape and economy of the St Austell area, as it has for the past 100 years. China clay production generates large quantities of waste and affects water quality, water resources and air quality.

There is general recognition of the huge potential for this industry to alter the landscape. We work with the industry and the Mineral Planning Authority to ensure impact is minimised.

### 6.10.1 Tipping and restoration

Due to the geological nature of the clay reserves approximately 9 tonnes of waste is generated for every tonne of clay won. Five hundred million tonnes of waste have been tipped above ground within the area occupying over 1700 hectares. Current waste production is approximately 22 million tonnes per annum making this the most concentrated area of mining and tipping in the UK. Industry forecasts to 2011 indicate that a further 180 hectares of new land will be required for extraction and some 400 hectares of land for tipping.

Recognising the need to take a more strategic approach to future tipping and restoration development within the area, the Minerals Planning Authority, Cornwall County Council is currently producing a Tipping and Restoration Strategy for the St Austell china clay area. This aims to reconcile the needs of the environment, the amenity of local communities and to ensure adequate provision for the disposal of china clay wastes. A pilot study in the Fal area has been successfully completed.

Although such a strategy will not have statutory status it will have a significant bearing on land use planning within the St Austell china clay area. The Department of Environment, Transport and Regions expects mineral development plans, planning applications and the review of old minerals permissions to be considered within the context of such a strategy.

### 6.10.2 Water quality

A Code of Practice relating to water quality is being developed by the Environment Agency and china clay industry to promote good practice and eliminate some of the impacts and risks through management of sites. Liaison meetings are held between the industry and the Environment Agency to ensure that currently held licences are understood by the licence holders and that we understand the complex pit operations.

Reports on 12 china clay sites where there are exceedences of the EC Dangerous Substances Directive are currently being prepared. The reports will guide the actions to improve water quality. Monitoring sites have been reviewed and some have already been incorporated into our routine monitoring programme.

Table 9

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
9.1 Produce Code of Practice		Agency/China clay industry						
9.2 Support and implement the County Council/China clay industry's Tipping and Restoration Strategy		CCC/China clay industry	1k	●	●	●		
9.3 Improve water quality where china clay activities contribute to exceedences of EC Dangerous Substances Directive and non-compliance with RQOs/Long Term RQOs	Reports on 12 sites currently being prepared Site specific actions will follow production of reports	Agency/ECCI	U	●				
	Routine monitoring will be amended as recommended in reports	Agency	U		●	●	●	●



## 6.11

**Metalliferous mining**

Historically, the catchment was one of the most important and extensively mined areas in the South West, principally for tin and copper. Underground workings have altered groundwater flows and intercepted surface water drainage, discharging via mine workings rather than flowing back into rivers and streams. Water quality, particularly in the Carnon River subcatchment, has been affected by mine drainage over hundreds of years.

**6.11.1 Ecological and archaeological impact**

Many former mining sites are particularly rich in unusual bryophyte (mosses and liverworts) communities, others are important for dragonflies and damselflies (Odonata). Cornwall Wildlife Trust are producing 'Key Bryophyte and Odonata Site' reports to highlight the most important areas. Biodiversity Action Plans are a route for achieving this.

There is concern over the inappropriate management of archaeological remains on mine sites and a need for a thorough awareness of what archaeological value a site has before any changes are made.

The Derelict Land Restoration Strategy for Cornwall was recently launched by English Partnerships. Amongst the actions included in the strategy are the preparation of site management plans for conservation management of former mine sites and audits of archaeological remains.

**6.11.2 Swan mortality**

Research into swan populations, movement and mortality have been initiated and the results gained so far indicate that the deaths are generally linked to heavy metal contamination and toxicity. The majority of the swans died from zinc toxicity, which is believed to be a result of the inputs from the Wheal Jane system to Restrounguet Creek. There also appears to be a historic lead problem, which was exacerbated by a feeding station being unfortunately established at the site of an old lead smelter in Penpol Creek. Studies are continuing.

**6.11.3 Metalliferous mining waste arisings**

Widespread contamination of ground has occurred from the former operation of metalliferous mine workings in the area. During work on spoil heaps or contaminated sites any soil containing metalliferous mining waste exported off site must be handled in an appropriate manner. We advise on suitable methods on a site-specific basis as part of our core work. Cornwall County Council, in its forthcoming waste local plan, will encourage disposal taking into account our advice.

**6.11.4 Contaminated sediments**

Sediments are contaminated with metals in Restrounguet Creek and localised areas of Carrick Roads. Baseline surveys will give information so that appropriate future actions can be taken.

**6.11.5 Wheal Jane**

Since the incident of 1992 we have been actively pumping and treating the majority of water to prevent the discharge of untreated minewater from Wheal Jane. We are now carrying out a project to determine the long term solution to the minewater problem.

**6.11.6 County Adit**

The County Adit system has over 30 miles of adits and branches and originally received drainage from over 40 mines. It drains a large area, including United Downs landfill site and is the source of approximately 50% of the flow in the Carnon River. Maintenance of such a structure is prohibitively expensive (in the region of millions of pounds per year) and is not the responsibility of any one body.

The Mine Drainage Prevention study report, in progress as part of the Wheal Jane project, will identify options for appropriate actions to reduce surface water ingress into the minewater system.

Table 10

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
10.1 Continue studies into swan deaths as appropriate	<i>Continue with postmortem and movement studies</i>	Agency	3k	●	●			
	<i>Continue research into mute swans as indicators of heavy metal pollution</i>	Agency	U	●				
10.2 Handling of metalliferous waste arisings to minimise environmental impact	<i>Promote policy to be included in forthcoming Cornwall Waste Local Plan</i>	Agency	U	●				
10.3 Investigate effects of estuary sediment contamination on water quality	<i>Carry out TBT baseline survey</i>	Agency	U	●				
	<i>Review dredging procedures</i>	Harbour authorities/ Agency	U					
	<i>Future baseline surveys required for other contaminants</i>							
10.4 Future management of Wheal Jane minewater	<i>Develop long term solution for Wheal Jane (3 year consultancy study)</i>	Agency/ DETR		●	●	●		
	<i>Long term solution for minewater implemented</i>	Agency/ DETR					●	●
10.5 Future maintenance of County Adit	<i>Maintenance of adits</i>	Local authorities/ national government/ mineral owners/						
	<i>Investigation into options of management of surface water ingress such as the promotion of surface water sewerage in Redruth. Any management options needs to balance with amount of development likely and its effects on the system</i>	Agency/ LAs						

## 6.12 Flood Defence

Flood alleviation schemes for Pentewan and Mevagissey are currently in the capital programme for the years 2001/02 or later.

At present no flood warnings are issued for the St Austell White River or the Sandy River. 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 assigned priority taking into account the needs of the whole region.



Table 11

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
11.1 Construct flood alleviation schemes at: Pentewan Mevagissey	<i>These schemes are currently in the capital programme. Their timing and implementation is subject to their viability and to the availability of funds from MAFF, the Agency and any contributors. Cost estimates for these works will be developed during the feasibility and appraisal stages of the promotion of each scheme</i>	Agency	Mevagissey 1500k					●
		Agency	Pentewan 500k					●
11.2 Complete Flood Warning Levels of Service Study (FWLOSS)	<i>Improvements will be identified following completion of study</i>	Agency	10k		●	●		

## 6.13 Development control

### 6.13.1 Flooding

A programme of flood risk data survey, interpretation and provision to planning authorities is in hand, though currently predominantly for "main rivers" (Section 105 survey). Indicative floodplain information for main rivers is now available for the catchment.

New development can lead to higher rates of runoff entering watercourses possibly leading to flooding. This has an effect on the watercourse, which may undergo increased erosion or an altered flow regime. It can also reduce the amount of rain entering groundwaters, leading to reduced summer flows. Surface water can carry pollutants such as oils. There are a number of methods of source control which can be designed into new developments to limit such pollution. Additionally the Agency promotes the use of swales, wetlands and storage lagoons to reduce high rates of runoff. However, their use must be carefully chosen for individual sites. These are highlighted on a video 'Natures Way' which, together with a leaflet, is available from this office.

### 6.13.2 Consultation guides

The Agency produces consultation guides for each local planning authority which contains our recommendations for development restraints on environmental grounds. Planning authorities are encouraged to adopt the guides as policy. Consultation guides are revised and updated annually. The guide for Kerrier District was published in June 1997; those for Carrick and Restormel are currently in preparation.

### 6.13.3 First time sewerage

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 owner/occupier, Parish or District Council may apply to SWW for a scheme. The Agency is currently involved in negotiations for first time sewerage in Porthallow (see Section 6.2).

#### 6.13.4 Surface water drainage off the Penryn bypass

There is perceived to be a risk of pollution of the College No 4 Reservoir from surface water drainage off the Penryn bypass. Discussions are ongoing to identify the nature of this risk and possible solutions. Contingency plans are being developed between SWW, the Agency and emergency services, to address problems, should they arise.

#### 6.13.5 Review of old mineral permissions

Under the Environment Act 1995, all old Minerals Planning Permissions (post 1947 Act) are to be reviewed and given 'modern day' conditions. The Agency is a statutory consultee in this process. We will be working with the Mineral Planning Authority to ensure that conditions reflect the concerns of the Environment Agency.

We have been consulted on three reviews, for the china clay district, Luxulyan Quarry and West of England Quarry at Porthoustock.

#### 6.13.6 Development of the foreshore

The foreshore is a specific area subject to frequent development pressure in this catchment. The Special Area of Conservation proposed for much of the Fal and Helford Estuaries 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 defences in this area.

#### 6.13.7 Eden Project

At the time of writing, this project has received outline permission in principle from the Planning Authority. The Agency has, and will continue to, work closely with both the Planning Authority and the project consultants. We will ensure that appropriate Best Practice design criteria and constructional standards are adopted to prevent possible flooding and environmental damage.

Table 12

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
12.1 Identification of flood risk areas through Section 105 surveys	<i>Schedule of locations to be established</i>	Agency	U		●	●	●	●
		Agency	Core	●	●	●	●	●
12.2 Monitoring environmental effects of new development								
12.3 Formally adopt currently informal development restraint areas	<i>The Agency promotes the adoption as Policy by planning committees of recommendations contained in the consultation guides</i>	LPA's	U					
12.4 Promotion of source control techniques and Best Management Practices	<i>Agency is developing national policy on source control and will promote it for inclusion in planning policy</i> <i>Leaflet and video 'Natures Way' are available</i>	Agency		●	●			



Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
12.5 Reduce pollution risk to Penryn No 4 reservoir from road drainage runoff	<i>Funding for initiatives to promote Best Management Practices (BMPs) to planners and developers is being sought</i>	Agency	U	●	●			
	<i>Undertake study into risks and options to reduce risk from runoff. This will identify the best course of action to reduce risk to the reservoir without compromising the effectiveness of the College Brook flood alleviation scheme at Penryn</i>	SWW	5-10k	●				
	<i>Following recommendations of study, carry out works</i>	SWW/ CCC	100k		●			

## 6.14 Meeting current and future demand for water

We need to ensure there is an adequate public water supply now and in the foreseeable future. The catchment lies within SWW's Colliford Strategic Supply Zone and much of the public water supply comes from outside the plan area.

We have produced demand forecasts for the area served by the Colliford Strategic Supply Zone looking at two scenarios, 'high' and 'low' demand growth.

Comparing these forecasts to the current drought reliable yield of 166 Ml/d for the zone shows that in 2021 under the 'high' scenario there will be a deficit of 57Ml/d whilst under the 'low' scenario there will be a deficit of 17Ml/d. The high scenario assumes high growth in consumption, no improvements to reduce losses and no increase in domestic metering to reduce water use. The low scenario assumes low growth in domestic consumption, no growth in industrial/commercial consumption, broad company leakage targets for SWW and little or no increase in the proportion of domestic properties subject to metering above 1991 levels.

The options that we are promoting to meet this deficit, and to ensure that the low demand scenario is the one that actually occurs, are outlined below:

- encourage metering in all new developments;
- encourage selective metering as an alternative to new resources;
- encourage and publicise efficient water use and recycling;
- promote the efficient use of water;
- encourage leakage reduction to a target of at least 200 litres/property/day and agree local economic leakage targets;
- encourage water companies to make more efficient use of water resources;
- welcome and encourage the water efficiency plans which OFWAT has asked each water company to publish.

As part of a campaign to promote the wise use of water, SWW have produced a leaflet "Home Water Checklist" for distribution to all customers and are trialing the use of 'Hippo Bags' in the Colliford Strategic Supply Zone.

In 1995 we produced 'Tomorrow's Water', a strategy for the development of water resources in the South West. " There is now a requirement to review that document in light of changes in water supply and demand.

#### 6.14.1 Coping with droughts

We are currently in the process of agreeing a detailed Drought Management Plan (DMP) for the Colliford Strategic Supply Zone, with SWW. This will establish a staged programme of water conservation measures to be taken as a drought intensifies. Key actions will be triggered when reservoir storage falls below 'drought alert' reservoir control curves. Control curves identify when particular operational actions are necessary by plotting reservoir storage levels against the time of year. The Agency promotes the use of this management technique to ensure appropriate action is taken to reduce demand before drought orders or permits, which affect the environment, are used.

Table 13

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
13.1 Modelling of Colliford Strategic Supply Zone to determine the yield, best use of available resources and future developments	Agency to audit SWW reassessment of yields for all sources within the Colliford supply zone	Agency	40k	●	●			
	Prepare water resources plans in conjunction with SWW and publish a revised regional water resources development strategy	Agency/ SWW	80k (for whole county)	●	●	●	●	
13.2 Drought management	Drought Management Plan will include operational management of public water supply sources. For example; maximising the use of river abstractions within licensed limits to conserve reservoir storage, demand (customer) management such as enhanced leakage control and/or hosepipe bans as well as Drought Orders/Permits, where these are deemed necessary	Agency	15k	●				

## 6.15 Waste management

In our waste planning role we have a duty to provide Government, the waste management industry, and local authorities with reliable data on the types and quantities of wastes arising in various areas of England and Wales. Such information will feed into the National Waste Strategy. The strategy will also provide a framework for the development of County Structure Plans and Waste Local Plans which give the criteria for new waste management facilities. District Councils require better data upon which to decide the content of their Recycling Plans. The waste management industry itself requires good information upon which it can base its investment and operational decisions. New facilities will only be provided where there is a perceived business opportunity.

The Agency is in a position, through commenting on Development Plans and on specific proposals, to exert its influence to secure more sustainable waste management practice.



We work in collaboration with the Payback organisation in the set up of Waste Minimisation Groups. The Payback organisation is the consultancy service of Groundwork Trust for Devon and Cornwall who carry out waste audits for businesses. 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 the new treatment and recovery facilities locally to provide a more sustainable alternative than landfill disposal. These initiatives have enabled many companies to discover scope for cost savings whilst changing their approach to waste and other emissions.

We also have an educational and facilitating role in the process of changing attitudes to waste management. The environmental impact of wastes can and will be reduced by improved methods and the establishment of appropriate facilities which represent the Best Practicable Environmental Option.

#### 6.15.1 Cornwall Waste Management Forum

The Cornwall Waste Management Forum meets regularly to exchange views, appraise new technology and best practise and to discuss an integrated waste strategy for Cornwall. The group is made up from representatives of the waste collection authorities (district councils), the waste disposal authority, waste disposal contractor and the Agency. The group recognises the need for a co-operative approach aimed at a more sustainable waste management system.

The Agency uses the Forum as a link between national waste strategies and local operations. Future waste operations will be influenced by the Forum. This will lead to environmental benefits to the locality and to Cornwall as a whole.

#### 6.15.2 Landfill capacity

Landfill capacity at United Downs is becoming limited and there will be a need for additional void space together with an integrated range of facilities for the treatment and recovery of wastes. The forthcoming Cornwall Waste Local Plan will set out strategic guidelines which will help identify the most suitable options.

Table 14

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
14.1 Carry out waste arisings survey	Part of the work of the new Area Tactical Planning staff within the Environment Planning Department of the Agency will be to develop campaigns and partnerships with businesses and other organisations	Agency	U		●			
14.2 Reduce waste production								
14.3 Reduce waste requiring disposal by encouraging and developing recycling initiatives		Agency			●	●	●	●
14.4 Identify criteria for waste disposal sites		Agency						
14.5 Draw up strategies for sustainable waste management		Agency				●	●	●

## 6.16 Effects of Falmouth Docks

Falmouth Docks are engaged in the maintenance of ships, which includes the application and removal of anti-fouling paints. This contributes to the exceedence of Environmental Quality standards for copper and tributyltin (TBT) as specified under the EC Dangerous Substances Directive. The improvement programme at Falmouth Docks (part of their IPC authorisation) is underway. Treatment of TBT discharges to water will be introduced by September 1998. The company is currently looking at options for disposal of sandblasting waste arisings to find a long-term environmentally sound solution.

### 6.16.1 Fal Estuary TBT baseline survey

Monitoring has shown that there are several point source discharges of TBT to the Fal Estuary, namely Falmouth Docks and SWW's outfalls at Middle Point and Pennance Point.

Since 1987 it has only been legal for boats > 25m in length to be coated with TBT based paint. Any boats which are antifouled with TBT will be a source of TBT to the estuary. In addition, the historic use of TBT based paints on boats < 25m in length has resulted in TBT contamination of sediments in the estuary. These sediments will also have been contaminated by the discharges from Falmouth Docks and the SWW outfalls. The contaminated sediments act as a further source of TBT to the estuary.

A baseline survey to measure the levels of TBT in the Fal Estuary is being carried out during 1997 to study the effect of the IPC authorisation for TBT use at Falmouth Docks. Water and sediment samples have been collected from throughout the estuary. There are also ongoing studies to measure bioaccumulation in shellfish tissue and the impact of TBT on the estuary ecology. The 1997 data will be reviewed, and a long-term monitoring programme to study trends in TBT levels will be determined.

### 6.12.2 Pollution prevention

A remediation programme at Falmouth Oil Services (1994) Ltd is currently underway.

Table 15

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
15.1 Pollution prevention at Falmouth Oil Services (1994) Ltd	<i>Continue current remediation programme to clean groundwater and prevent percolation of oil contaminants to surface waters</i>	Agency/company		●	●			
15.2 Assess the environment impact of TBT in the Fal estuary	<i>Undertake baseline survey and trend monitoring</i>	Agency						
	<i>Review dredging procedures</i>	Agency/Falmouth Docks/MAFF/Harbour Master						



## 6.17 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 16

Actions	Tasks	Action By	Cost to Agency (£)	Financial Year				
				97	98	99	00	01
16.1 Draw up strategy		Cornwall Air Quality Forum						

## 7. APPENDICES

### 7.1

#### Appendix 1

##### The Environment Agency

###### Water resources

In water resources we work to save, redistribute and improve river, lake, reservoir and underground water supplies and we encourage water conservation. We balance the needs of people who use water and the environment by managing 'abstraction and management licences' issued to customers to take or use water from rivers and boreholes.

###### Preventing pollution

We respond to reported pollution incidents in the air, on land or in water.

###### Water quality

Water quality prevents and controls pollution and monitors the quality of rivers, estuaries, coastal waters and groundwater. We manage 'discharge consents' which give permission for people to release used water into a river, groundwater or the sea. We regularly monitor rivers, estuaries and the sea to check the quality of the water. We report the results of our water and effluent sample analyses in the public register.

###### Integrated pollution control

'Integrated pollution control' (IPC) is made up of regulating the most polluting, or technologically-complicated industrial and other processes to help prevent pollution or cause as few harmful releases to the air, on land or to water as possible.

###### Radioactive substances

Our responsibility for radioactive substances is made up of regulating how radioactive materials are kept and used and the build up and disposal of radioactive waste. In the case of nuclear sites we only regulate the way waste is disposed of and the Nuclear Installations Inspectorate regulates how radioactive materials are kept and used and the build up of radioactive waste.

###### Waste

Waste regulation is made up of providing advice on the best waste management practices and making sure that waste is dealt with legally and safely. We also register and monitor all those who carry waste for business. We must be told beforehand if anyone moves dangerous waste (known as 'special waste'). We register companies who produce a lot of waste and we monitor them to make sure they meet their targets for waste recovery and recycling.

###### Contaminated land

During the course of its use, land can be damaged by chemical pollution. A number of public and private organisations are involved with finding and dealing with the problem. We aim to work with others to reduce the risk of harm from contamination and to bring land back into good use.

###### Flood defence

Flood defence has the role of reducing risk to people and the environment from flooding by providing effective defences. Protecting life is our highest priority and to meet this aim we provide a flood forecasting and warning service and discourage development in flood-risk areas. We also manage flood defences, and we have an aim to protect and improve the natural environment by promoting flood defences that work with nature. In areas where there is a flood forecasting facility already, we aim to provide a warning (up to two hours beforehand) for properties in flood-risk areas.



### **Fisheries**

Fisheries has the responsibility for maintaining, improving and developing salmon, sea trout, non-migratory trout, coarse and eel fisheries. We regulate fishing by issuing licences for rod angling and net fishing. We carry out improvements to fisheries by improving the habitat and fish stocks and providing advice to fishery owners. We will assess how serious any incident reported to us is of fish being killed and then take action when necessary.

### **Recreation**

Recreation and access are also important parts of our work. We ensure that the sites we control are managed for recreational use. We also have a general duty to promote the recreational use of water and land throughout England and Wales.

### **Conservation**

We must also make sure we protect wildlife, landscape and archaeological heritage, either by allowing others to do things or to carry out work ourselves.

### **What we do not do**

We do not cover all areas of environmental law and service to the general public. We are not responsible for :

- noise problems (except if it is to do with our work);
- litter;
- air pollution arising from vehicles, household areas, small businesses and small industries;
- collecting waste in your local area;
- planning permission; or
- environmental health and food hygiene.

Your local authority deals with these issues and will contact us when necessary. The local authorities also deal with contaminated land issues by working with us. We are not responsible for the quality or supply of drinking water or getting rid of sewage waste. You should contact your local water or sewerage companies for more details - you can find their details in your local phone directory.

## **7.2**

## **Appendix 2**

### **Consultees who responded to the public consultation**

#### **National organisations**

- British Canoe Union
- Clean Rivers Trust
- Farming and Rural Conservation Agency
- MAFF
- National Trust

#### **Regional and local organisations/businesses**

- A&P Falmouth Ltd
- Camborne School of Mines
- Cornwall Bird Watching and Preservation Society
- Cornwall County Archaeology Unit
- Cornwall Federation of Sea Anglers

- Cornwall Wildlife Trust
- Fal Friends of the Earth
- Falmouth Watersports Association
- Helford River Association
- Helford Voluntary Marine Conservation Area
- National Farmers Union South West Region
- National Trust Fal & Mid Cornwall Office
- National Federation of Sea Anglers - Cornish Division
- Ramblers Association
- Restronguet Creek Society
- Royal Society for the Protection of Birds - South West

#### Local authorities

- Carrick District Council
- Carrick D C Maritime Section
- Falmouth Town Council
- Feock Parish Council
- Kerrier District Council
- Gunwalloe Parish Meeting
- Gwennap Parish Council
- Mawgan Parish Council

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

## 7.3

### 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 is 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.

## 7.4

### Appendix 4

#### Waste spreading to land

The spreading of controlled wastes onto land used for agriculture is classified as a waste disposal operation and is regulated through the Waste Management Licensing Regulations 1994.

Wastes which can be spread without the need for a Waste Management Licence are listed in Table 2 Paragraph 7 of Schedule 3 to the regulations (see below):

#### TABLE 2 PART I

- Waste soil or compost
- Waste wood, bark or other plant matter

#### PART II

- Waste food, drink, or materials used in or resulting from the preparation of food or drink.
- Blood and gut contents from abattoirs
- Waste lime
- Lime sludge from cement manufacture or gas processing
- Waste gypsum
- Paper waste sludge, waste paper and de-inked paper pulp
- Dredgings from any inland waters
- Textile waste
- Septic tank sludge
- Sludge from biological treatment plants
- Waste hair and effluent treatment sludge from a tannery.

To obtain an exemption the applicant must demonstrate to the Agency that the activity is of benefit to agriculture.

## 7.5

## Appendix 5

## Guide to Consultation Report and Action Plan Issues

Consultation Report Issue		Reference in this Action Plan
Issue 1	Air pollution	Section 6.17, Table 16
Issue 2A	Conflict between users	Section 6.3.1, Table 2
Issue 2B	The need to set up canoe access agreement for the Fal	Section 6.3.2, Table 2
Issue 3A	Poaching of salmonids and bass	Section 6.4.1
Issue 3B	Increase minimum bass size limit	Section 6.4.2, Table 3
Issue 3C	Ebb netting for seafish	Section 6.4.2, Table 3
Issue 3D	Natural predation of fish stocks	Section 6.4.3
Issue 3E	Investigate causes of bullhead disease	Section 6.4.4, Table 3
Issue 3F	Introduction of non-native fish species	Section 6.4.5, Table 3
Issue 4A	Poor fish population information	Section 6.5.1, Table 4
Issue 4B	Insufficient knowledge of eel populations	Section 6.5.1
Issue 4C	Insufficient age class data for sea trout	Section 6.5.1, Table 4
Issue 4D	Designation of new stretches under EC Freshwater Fish Directive	Section 6.1.4
Issue 4E	Areas of potential improvements	Section 6.5.2, Table 4
Issue 4F	Obstructions to fish migration	Section 6.5.3, Table 4
Issue 4G	Need for improved recording of rod catches	Section 6.5.4, Table 4
Issue 5A	Exceedences of EC Shellfish Waters Directive standards	Table 5
Issue 5B	Downgrading of sites under the EC Shellfish Hygiene Directive	Table 5
Issue 5C	Red tides in Fal Estuary	Section 6.6.1
Issue 5D	Clarification of shellfish legislation	Section 6.6.2, Table 5
Issue 5E	Ecological and landscape impacts of bait-digging	Section 6.6.3, Table 5
Issue 6A	Sites which could become vulnerable to tidal flooding	Section 6.7.2, Table 6
Issue 6B	Possible loss of intertidal and fringing habitats	Section 6.7.2, Table 6 & 7
Issue 6C	Possible re-suspension of contaminated sediments	Section 6.11.4
Issue 6D	Removal of sand at Poldhu Cove	Section 6.7.3
Issue 7A	Need to protect and enhance conservation features	Section 6.8, Table 7
Issue 7B	Water Level Management Plan for Goss Moor	Section 6.8.1, Table 7
Issue 8A	Impact of farming activities and agricultural runoff on water quality	Section 6.9
Issue 8B	Impact of bulb growing and changes in farming practice	Section 6.9.1, Table 8
Issue 8C	Spreading waste on semi-natural habitat	Section 6.9.2, Table 8
Issue 9A	Expansion of china clay workings and tipping sites	Section 6.10, Table 9
Issue 9B	Restoration of china clay sites	Section 6.10, Table 9
Issue 9C	Impact of china clay discharges and processes on water quality	Section 6.10, Table 9
Issue 10A	Continuing impact of minewaters on water quality	Section 6.11
Issue 10B	Nature conservation management of former mine sites	Section 6.11.1
Issue 10C	Fal swan mortality	Section 6.11.2, Table 10
Issue 10D	The need to protect archaeological remains	Section 6.11.1
Issue 10E	Handling of metalliferous waste arisings	Section 6.11.3, Table 10
Issue 10F	Impact of estuary sediment contamination on water quality	Section 6.11.4, Table 10



Issue 10G	Future management of Wheal Jane minewater	Section 6.11.5, Table 10
Issue 10H	Future management of County Adit	Section 6.11.6, Table 10
Issue 11A	Flooding downstream from existing and new development	Section 6.13.1, Table 12
Issue 11B	The need to identify flood risk for planning authorities	Section 6.13.1, Table 12
Issue 11C	Promote source control	Section 6.13.1, Table 12
Issue 11D	New development in vulnerable areas	Section 6.13.2, Table 12
Issue 11E	Risk to College No4 reservoir	Section 6.13.4, Table 12
Issue 11F	Appropriate operation of mineral workings with old planning permissions	Section 6.13.5
Issue 11G	Need to protect semi-natural habitat, particularly foreshore	Section 6.13.6
Issue 12A	Meeting future public water supply demand	Section 6.14, Table 13
Issue 12B	Coping with droughts	Section 6.14.1, Table 13
Issue 13A	The provision of new waste management facilities	Section 6.15, Table 14
Issue 13B	The need for sustainable waste management	Section 6.15, Table 14
Issue 14A	Non-compliance with River Quality Objectives	Section 6, Table 1
Issue 14B	Non-compliance with EC Bathing Waters Directive	Section 6, Table 1
Issue 14C	Impact of sewage discharges on non designated bathing waters	Section 6, Table 1
Issue 14D	Eutrophication in the Fal Estuary	Section 6.2.2, Table 1
Issue 14E	Tributyltin in SWW discharges	Section 6.16.1, Table 15
Issue 15	Impact of Falmouth Docks	Section 6.16
Issue 16	Unknown causes of poor water quality	Section 6.1.2
New Issue	Pollution prevention at Falmouth Oil Services	Section 6.16.2, Table 15
New Issue	Wintering wildfowl on the Fal Estuary	Section 6.8.4, Table 7

## 7.6

## 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.

**AQUIFER**

Layer of porous rock able to hold and transmit water. Often classified as major, or minor, depending on the extent to which they support higher yielding borehole systems.

**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.

**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.

**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.

**FLUVIAL**

Pertaining to river flow and its erosive activity.

**GRILSE**

Atlantic salmon that have remained in the sea for only one winter.

**LICENCE OF ENTITLEMENT**

Licence granted under Schedule 26 of the Water Act 1989 in respect of a previously exempt abstraction greater than 20m<sup>3</sup>/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 Regional Offices. The Environment Agency has the power to carry out works to improve drainage or protect land and property against flooding on watercourses designated as 'Main River'. The Environment Agency do not have the legal power to spend public funds on drainage or flood protection works on watercourses not designated as 'Main River'.

**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.

**SALMONID**

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

**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.

**7.7****Abbreviations**

CCC	Cornwall County Council
CBWPS	Cornwall Bird Watching and Preservation Society
ECCI	English China Clays International
FWAG	Farming and Wildlife Advisory Group
LPA	Local Planning Authority
RSPB	Royal Society for the Protection of Birds

**References**

- <sup>1</sup> Fal and St Austell Streams Local Environment Agency Plan Consultation Report. Environment Agency South West Region, March 1997.
- <sup>2</sup> A multiple use zoning scheme: a summary of regulations for Falmouth Bay and Estuaries, English Nature, 1996.
- <sup>3</sup> Cornwall's Biodiversity Volume 1: Audit & Priorities, 1st Edition. Cornwall Wildlife Trust. ISBN 1 898166 32 3
- <sup>4</sup> Tomorrow's Water: South West Regional Water Resources Development Strategy. NRA South Western Region, April 1995. SW-4/95-1K-B-ANOQ.

Map 2 - 1996 Compliance with River Quality Objectives (River Ecosystem Classification)



Information correct as of December 1996

FAL AND ST AUSTELL STREAMS LOCAL ENVIRONMENT AGENCY PLAN



# map 2

## MANAGEMENT AND CONTACTS:

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

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

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

### ENVIRONMENT AGENCY REGIONAL OFFICES

#### ANGLIAN

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Tel: 01733 371 811  
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#### SOUTHERN

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Worthing  
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#### NORTH EAST

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Tel: 0113 244 0191  
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#### SOUTH WEST

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#### NORTH WEST

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#### THAMES

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Kings Meadow Road  
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#### MIDLANDS

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#### WELSH

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St Mellons Business Park  
St Mellons  
Cardiff CF3 0LT  
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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**  
**Bodmin**  
**Cornwall PL31 1EB**  
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