

THE SEATON, LOOE AND FOWEY CATCHMENT MANAGEMENT PLAN ACTION PLAN



NRA

*National Rivers Authority
South Western Region
January 1996*

Telephone the emergency hotline to report all environmental incidents, such as pollution, poaching and flooding, or any signs of damage or danger to our rivers, lakes and coastal waters. Your prompt action will help the NRA to protect, water, wildlife, people and property.



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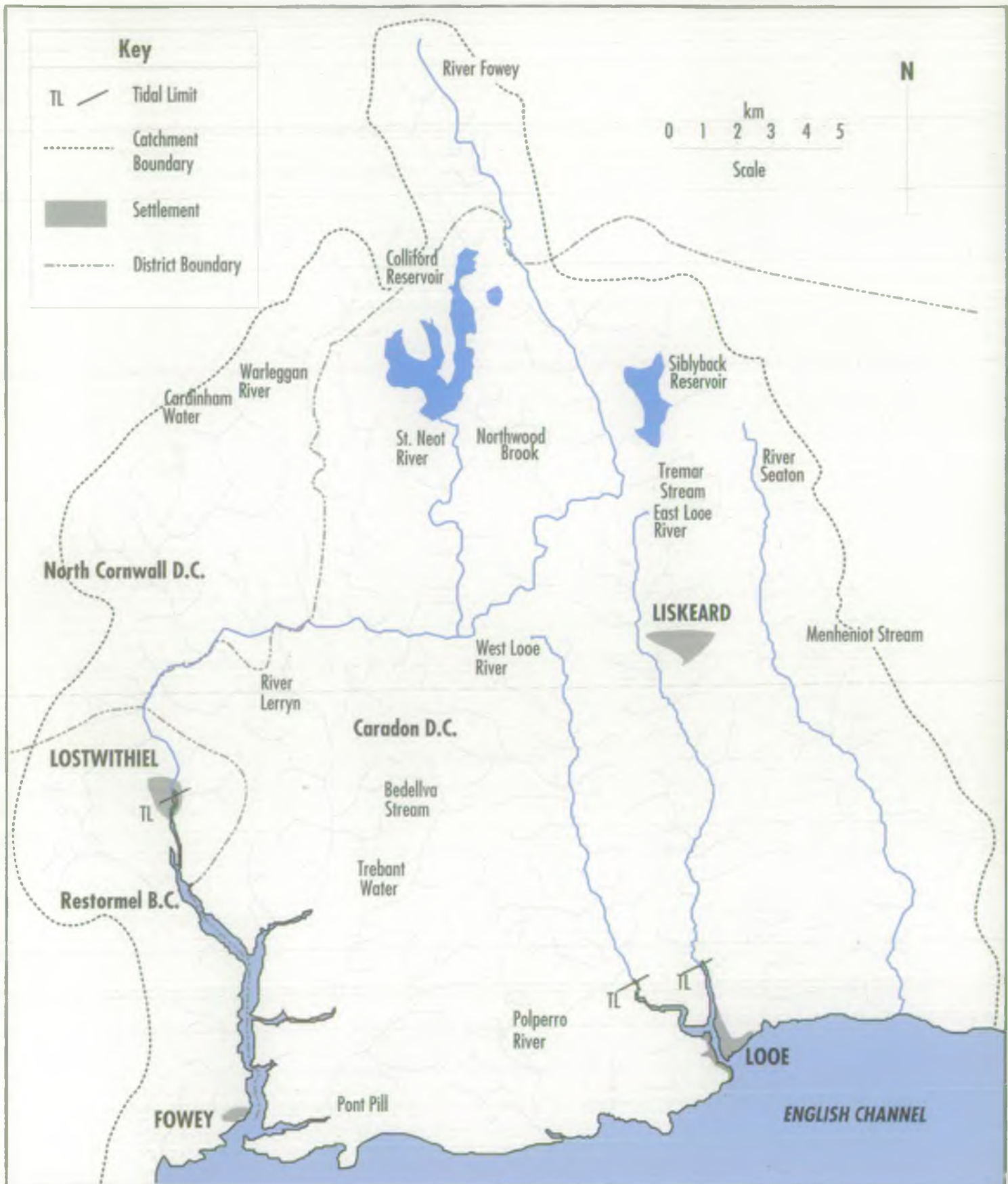
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The NRA and the Environment Agency

The NRA will form the major part of a new organization which will have responsibilities for the environmental protection of water, land and air. The new Environment Agency starts its work of managing the environment in England and Wales on 1 April 1996.



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FOREWORD

This Action Plan for the Seaton, Looe and Fowey Catchment is the first in a set of six plans covering the National Rivers Authority's Cornwall Area.

The plans embody the National Rivers Authority's commitment to realising improvements to the water environment of Cornwall and West Devon.

The rivers in this catchment are high quality and contribute greatly to the value of the environment through which they flow. However there are pressures arising from people's use of the catchment, raising issues which are addressed in this plan.

We are very grateful for the contributions made during the consultation period and are convinced that they represent the spirit of partnership that will be required to implement the plan.

Rob Robinson

ROB ROBINSON



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1. INTRODUCTION

Following production of the Seaton, Looe and Fowey Catchment Management Plan Consultation Report (Ref 1) and the consultation period, we are now presenting the Action Plan. It includes tables of actions to address the issues and primarily covers the five year period from 1995 to April 2000. The Action Plan will form the basis for improvements to the water environment by outlining the areas of work and investment proposed by the NRA and others.

2. OUR VISION FOR THE CATCHMENT

Most societies want to achieve economic development to secure a better quality of life, now and in the future. They also seek to protect their environment now and for their children. Sustainable development tries to reconcile these two objectives – meeting the needs of the present without compromising the ability of future generations to meet their own needs. To achieve this judgements have to be made about the weight to be put on different factors in particular cases. Sometimes environmental costs have to be accepted as the price of economic development but on other occasions a site, or an ecosystem, or some other aspect of the environment has to be regarded as so valuable that it should be protected from exploitation.

The Seaton, Looe and Fowey Catchment is a high quality environment which has suffered relatively little harm from development. However mining, one of the early industries which brought prosperity to the area, has left a legacy of contaminated drainage which continues to affect rivers in the catchment.

The catchment is significant in regional terms for providing public water supply from Colliford and Siblyback reservoirs and the River Fowey.

Today the NRA's role is to recognize what environmental features are important in the catchment and ensure that developments do not cause unacceptable damage to them. We have a responsibility to ensure that land is used and developed in such a way that the water environment is not harmed and future generations are able to use and enjoy rivers to their full potential. We rely on the support of Planning Authorities to achieve our aims.

In practice we achieve environmental sustainability by setting limits of acceptable environmental change. Some of the actions described in the tables in this Action Plan outline our role in setting these limits – particularly in the field of water quality management.

The NRA's vision for the Seaton, Looe and Fowey Catchment is towards a future where:

- there is minimal compromise of water quality, quantity and the physical structure of the water environment to facilitate economic development of the area
- the aquatic biodiversity of the catchment is maintained and extended and the physical habitat of the river system and wetlands for wildlife is improved
- improvements continue to be made to existing discharges, meeting appropriate standards
- an agricultural and forestry system develops which reduces the risk of diffuse pollution
- peoples' enjoyment and appreciation of the river system continues to grow
- there is minimal risk to people and property from flooding
- the development of public water supply is managed to minimize environmental impact.

3. PUBLIC CONSULTATION

The Seaton, Looe and Fowey Catchment Management Plan Consultation Report (Ref 1) was published for public consultation in December 1994. We consulted over 50 organisations and individuals directly about the issues which are outlined in this Action Plan and sent out over 400 copies of the Consultation Report. We received 36 formal responses. Some of the comments and concerns of consultees are summarized in Appendix 2.

4. CATCHMENT MANAGEMENT PLANS AND DEVELOPMENT PLANS

Although we can control some of the things which influence the quality of the water environment or affect flood risk we have very little direct control over the way that land is developed. This is the responsibility of Local Planning Authorities (LPAs). LPAs prepare statutory development plans. The policies in these plans will guide the way that land is developed in the future. We have published guidance for local planning authorities to encourage them to adopt policies which protect the water environment from harmful development. The emerging Local Plans for the LPAs in this catchment contain such policies. Where we can we will reinforce these policies when we comment on planning matters and when we issue our own consents and licences. This Action Plan includes our concerns about development.

5. FUTURE REVIEWS

We will update this Action Plan by publishing an Annual Review.

6. THE SEATON, LOOE AND FOWEY CATCHMENT

The rivers of the Seaton, Looe and Fowey Catchment drain the area of south-east Cornwall from the southern slopes of Bodmin Moor to the south coast between Gribbin Head in the west and Donderry Beach in the east. This is a mainly rural catchment. The resident population in 1991 was 34,970 but the summer population may be double this figure. The summer influx of tourists can cause problems with wastewater treatment and public water supply. As water is exported the catchment is also affected by external demand for water.

Farms are mainly mixed pasture and forage crops although there are a significant number of specialist dairy units. The average farm is around 300 acres. The poor acid and waterlogged soils in the north of the catchment around Bodmin Moor are only suitable for rough grazing. These open upland areas are of special landscape and wildlife value.

The catchment has a varied and attractive coastline. The coast to the west of Looe is designated as Heritage Coast.

Catchment Facts (October 95 unless stated)

Area 465 km² Population (1991) 34,970

FLOOD DEFENCE

Length of statutory main river 26.1 km
Length of NRA defences 1.3 km

WATER QUALITY

General Quality Assessment (GQA) 1994 Biological Classification
Chemical (1992-94)

A (Good)	119.2 km	A (Good)	138.8 km
B (Good)	23.7 km	B (Moderate)	14.8 km
C (Fair)	2.4 km	C (Poor)	0 km
D (Fair)	0 km	D (Very Poor)	0 km
E (Poor)	0 km		
F (Bad)	0 km		

(Total river Lengths vary due to different monitoring sites)

EC Bathing Waters:

Seaton Beach, Donderry, Millendreath, East Looe, Readymoney Cove

WATER RESOURCES

Licensed abstraction	surface – 27
(As of 16/11/95)	groundwater – 202
Licensed abstraction volume	surface – 55.53 Ml/Year
(Ml=1,000,000 litres)	groundwater – 3.07 Ml/Year

In the Fowey Catchment the total volume of licensed abstractions is 42.8 Ml/year. The long term average flow of the River Fowey (measured from 1962 to 1970 below the public water supply abstraction point at Lostwithiel) is 151.0 Ml/year.

EC FRESHWATER FISH DIRECTIVE STRETCHES:

Salmonid (Game) fishery	65 km
Cyprinid (Coarse) fishery	0 km

WILDLIFE

Sites of Special Scientific Interest (SSSIs)	9
Water dependant SSSIs	6

7. ACTION TABLES

The issues listed in the following Action Tables were first published in the Consultation Report. The issue numbers listed here correspond to the numbers listed in the Consultation Report. Some of the issues have been regrouped and the titles simplified. Issues in this Action Plan fall into three categories:

- issues which we need to tackle with a special project
- issues we can address with our ongoing work
- issues which we will not carry forward in the life of this plan - "no-action issues".

In order to help people find their way around the document to issues that relate to a particular area of interest there is a topic/issue table on Page 15 (Appendix 1). This gives a number of topic titles (along the top row) and which issues in the plan (numbers down the side) may impact on them.

7.1 WATER QUALITY

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 to protect recognised uses.

7.1.1 EC Directive Standards

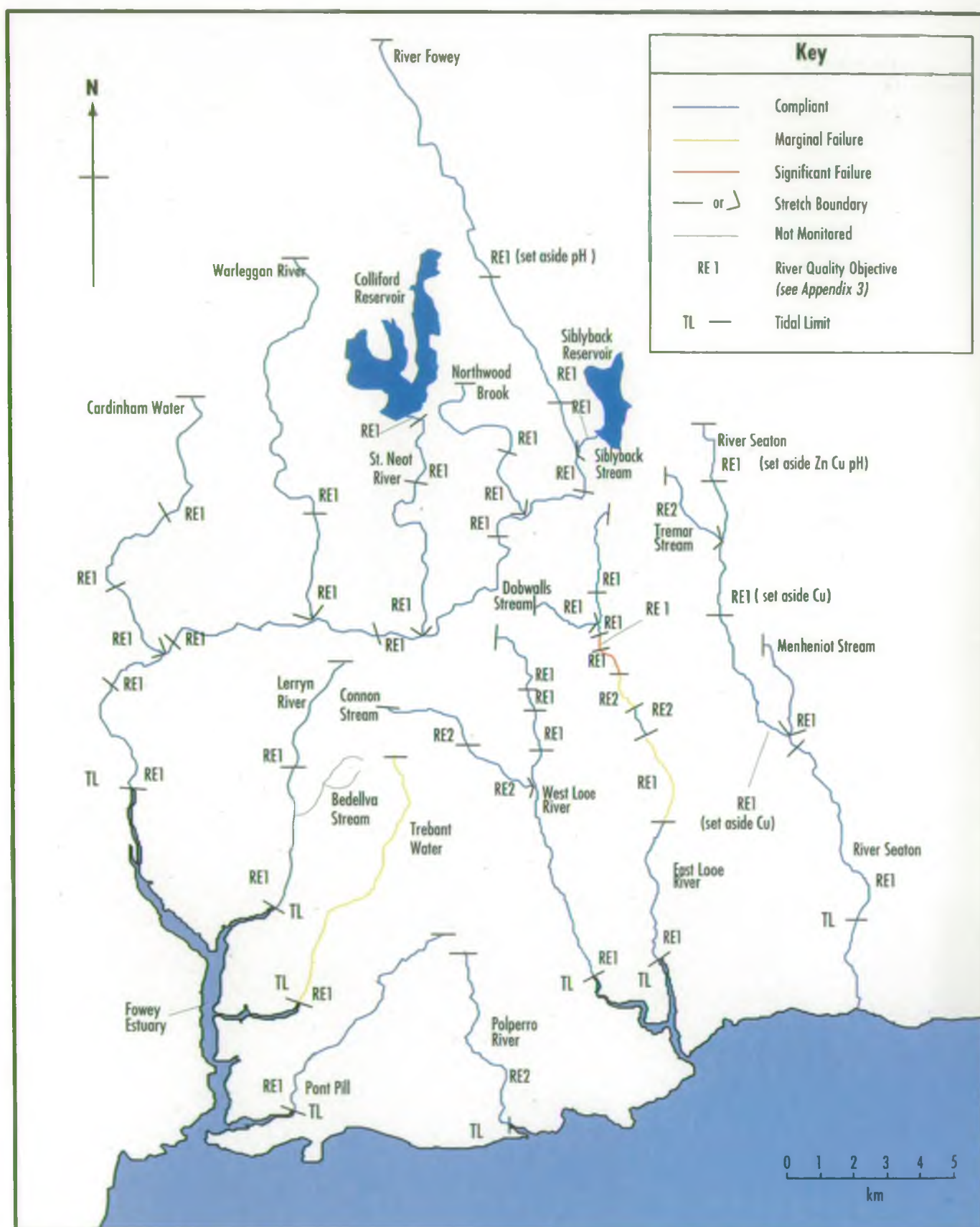
There are five EC Directives which currently apply to the catchment (Freshwater Fish Directive, Surface Water

Abstraction Directive, Bathing Beach Directive, Dangerous Substances Directive and Urban Waste Water Treatment Directive). Where EC Directive standards, particularly those for metals and/or pH are not met due to natural geology, we can recommend a derogation, that is these standards will not apply. Most designated EC sites in the catchment meet EC Directive standards. Where a site has failed to meet EC Directive standards we have identified what action will be taken.

Issue 39 is a new issue and was not listed in the Consultation Report.

Action	Lead Body (Other)	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issue 1 EC Freshwater Fish Directive Imperative standard for zinc exceeded.									
Action 1.1 The NRA will continue to monitor designated stretches. If there are future problems at particular sites we will apply for derogation of imperative standard for zinc if appropriate.	NRA	N/A	●	●	●	●	●		Although standards were not exceeded in 1994 there are known sources of zinc from mines upstream of monitoring points.
Issue 2 HCH(Lindane) at Looe Sewage Treatment works.									
Action 2.1 Set maximum discharge level through a revised discharge consent.	NRA (SWWSL)	<1k	●	●					HCH is listed under the Dangerous Substances Directive. The release of this substance should be controlled through the discharge consent for this STW.
Issue 4 EC Surface Water Abstraction Directive exceeded.									
Action 4.1 Standards for phenols and hydrocarbons have been exceeded. If there are future exceedances we will apply for a derogation. The NRA will continue monitoring and reporting.	NRA	N/A	●	●	●	●	●		We suspect that some of these compounds may be released from decomposing vegetation. There are no artificial sources of these compounds in the catchment.
Action 4.2 Standards for iron and coloration have been exceeded. If there are future exceedances we will apply for a derogation. The NRA will continue monitoring and reporting.	NRA	N/A	●	●	●	●	●		The volcanic rock and peaty soils of Bodmin Moor are natural sources of these compounds.
Issue 5 EC Bathing Water Directive standards exceeded at:									
Downderry Beach Action 5.1 New Sewage Treatment Works to be built at Seaton as part of SWWSL capital programme.	SWWSL	Unknown	●	●					Planning permission has been granted for the works which is due to be completed by May 1997.
Seaton Beach Action as for 5.1			●	●					

Action	Lead Body <i>(Other)</i>	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Millendreath Beach: Action 5.2 Review Consent at Holiday village.	NRA	<2k	●	●					Date of work is subject to agreement by the owners.
Action 5.3 Negotiate with owners to extend the outfall.	Owners	U		●	●				
Action 5.4 Investigate bacterial loads in Millendreath Stream.	NRA	5.6k	●	●					
East Looe: Action 5.5 Upgrade sewage treatment works. Work to be completed by 1998.	SWWSL	U			●				There are other sources of bacteria in the area which may also contribute to failures to meet EC Bathing Water Directive standards.
Action 5.6 Investigate bacterial loadings in East & West Looe rivers.	NRA	10.5k	●	●					
Action 5.7 Improve sewerage system, including upgrading pump.	SWWSL	U	●	●					
Readymoney Cove: Action 5.8 Provide a Sewage collection and Treatment scheme	SWWSL	U	●	●					New works constructed and commissioning is in progress. Improvements to sewerage are continuing.
Issue 6 Possible eutrophication in the Fowey Estuary.									
Action 6.1 Investigate trophic status of the estuary.									
Action 6.1.1 Collect data.	NRA	27k	●	●					The results of this work will determine whether the estuary should be designated as a 'sensitive area' under the Urban Waste Water Treatment Directive or as a 'polluted area' under the EC Nitrates Directive.
Action 6.1.2 Report results.	NRA				●	●			
New Issue 39 Urban Waste Water Treatment Directive compliance.									
Improvements to meet the appropriate treatment requirements of the directive have been identified for the following discharges:									Statutory completion date for all schemes is 2005.
Polperro	SWWSL/NRA	U							
Bodinnick	SWWSL/NRA	U							
Golant	SWWSL/NRA	U							
Various private discharges into the Fowey and Looe estuaries.	Owners/NRA	U							
Under this directive there is a requirement to make improvements to small discharges (<10m³/day) to avoid nuisance.									



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Seaton, Looe and Fowey Action Plan
NRA South Western Region

7.1.2. River Quality Objectives

The water quality targets that we use in all rivers are known as River Quality Objectives (RQOs). RQOs are used for managing water quality and are based on the River Ecosystem (RE) classification scheme. The RE classification scheme is made up of five water quality classes (RE1 to RE5) which reflect the chemical quality needed by different types of river ecosystem, including the different types of fishery they are able to support (see Appendix 3 for more detail). The RE classification scheme replaces the National Water Council (NWC) system that was previously used by the NRA.

The Consultation Report introduced proposals for RQOs based on the RE classes. As a result of the consultation process the RQOs have been finalized and are shown on Map 2.

Set Aside of Data

In certain circumstances we may *set aside* data when we decide whether an RQO is being achieved. 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. Map 2 shows where we will set aside data.

Map 2 also shows where current water quality fails to meet its RQO. This assessment is based on three years of routine monitoring data from the Public Register between 1992 and 1994. The failures are identified as either marginal or significant. The reasons for the failure to meet RQOs on the East Looe and Trebant Water have been identified and action taken. Other river stretches identified in the Consultation Report as requiring improvements to bring about compliance with RQOs are listed in the following table.

Action	Lead Body (Other)	Cost	Financial Year					Notes
			95 96	96 97	97 98	98 99	99 00	
Issue 8 High copper, zinc and low pH in the upper stretches of the river Seaton and high copper levels on the Tremar Stream.								
Action 8.1 Continue to monitor but set aside copper, zinc and pH data.	NRA	N/A	●	●	●	●	●	We cannot control these releases within the catchment.
Issue 9 Elevated ammonia levels in the Connon Stream.								
Action 9.1 Improve Connon Bridge Landfill site by cutting a new culvert in a route around the site and abandoning the old culvert.	Cornwall County Council	500k	●					This should be a long term solution to the problem of tip leachate entering the culverted stream.
Action 9.2 Investigate other sources upstream of the landfill site.	NRA	<1k	●					This study is now complete. High ammonia levels were attributed to a pollution incident. No further action required.
Issue 10 Low pH in the upper reaches of the Fowey, St Neot River and Northwood Brook.								
Action 10.1 Continue to monitor but set aside pH data.	NRA	N/A	●	●	●	●	●	Low pH is a natural phenomenon in this part of the catchment.
Issue 11 Organic enrichment of the Bedellva Stream.								
Action 11.1 Special monitoring to ensure that improvement to water quality is achieved and sustained.	NRA (Owners)	2k	●	●				We have investigated this problem and identified sources of ammonia together with some high risk sites. Improvements have been carried out by owners. We will continue to monitor.

7.1.3. Other Water Quality Issues

In addition to the EC Directives and RQOs there were a number of other water quality problems identified in the Consultation Report. These are listed in the following table.

Action	Lead Body (Other)	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issue 3 Elevated lead levels in the Menheniot Stream and the River Seaton. No Action. No future reporting proposed.									Contaminated mine drainage is the main source of lead in these rivers. We cannot regulate the release of lead from these sources.
Issue 7 Annex 1A substances in the River Fowey. Action 7.1 We may be required to take further action to reduce certain Annex 1A substances. We are awaiting publication of DoE guidelines arising from the 4th North Sea Conference before taking further action.	DoE (NRA)	U							At the 2nd and 3rd North Sea Conferences in 1987 and 1990, the UK Government made a commitment to reduce the load (concentration x flow) of certain substances.
Issue 12 Higher than expected levels of arsenic in mussels and seaweed at one site in the Fowey Estuary. Action 12.1 No Action									Although levels are higher than expected they are not significant. We are unable to commit resources to study this within the next five years.
Issue 14 Untreated sewage entering the River Fowey at Lostwithiel. Action 14.1 Locate source of sewage and rectify cause.	Restormel Borough Council	U							Two cross-connections have been found to date. Studies will continue until the whole area is checked.

7.2 WATER RESOURCES

7.2.1 The Effect of Abstractions and Water Supply

Most of the water abstracted in this catchment is taken from reservoirs and rivers. Only a small proportion is taken from the ground (see page 3, Catchment Facts). Colliford and Sibbyback reservoirs are used to store water for public supply to large areas of Cornwall. Water is released from the reservoirs for

abstraction downstream at Restormel and Trekeivesteps on the River Fowey.

The management of these reservoirs and other abstractions influences the ecologies of these rivers, though no specific assessment has been made. Below are highlighted actions which should address this shortfall in information. Success can be measured in the setting of target flows based on specific species requirements.

Action	Lead Body <i>(Other)</i>	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issue 15 The influence of reservoirs on the Fowey system.									
Action 15.1 Undertake a review of relevant data and report on the impact of reservoirs. Identify any additional monitoring requirements.	NRA	10k		●	●				Future management of water resources in the catchment will depend on good information.
Action 15.2 Fishery survey of the River Fowey system.	NRA	10k			●				Future management of water resources in the catchment will depend on good information on the fishery.

Action	Lead Body <i>(Other)</i>	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issue 15 The influence of reservoirs on the Fowey system.									
Action 15.3 Investigate the impacts of additional abstraction requirements. No action is planned within the 5 year period.								A pumped storage scheme may be needed by 2011 depending on demand. Following the drought of 1995 SWWSL and the NRA are reviewing the data. This may result in the need to advance the date of a pumped storage scheme, and associated investigations.	
Action 15.4 Review sediment transport within the Fowey system as part of the Estuary Management Plan (see Issue 40).	Fowey Harbour Commission	U	●	●	●	●		There are currently conflicting views on the effect of regulated flows on sediment transport in the system.	
Issue 16 Lack of knowledge of wildlife flow requirements.									
Action 16.1 Consider R&D results when available and apply as appropriate to the catchment.	NRA <i>(abstractors)</i>		●	●	●	●		We have commissioned a national study entitled 'Ecologically Acceptable Flows'. A user manual and R&D report will be available in July 1996.	
Issue 17 Environmental impact of a fish farm abstraction on the St Keyne Stream.									
No Action								Localized impact. No action proposed.	

7.2.2 Public Water Supply

We aim to manage water resources to achieve the right balance between the needs of the environment and those of the abstractors. The Water Resources Strategy for the region – 'Tomorrow's Water' (Ref 2) – sets out how we would like to see water resources developed in the future. Our Strategy follows the principles of sustainable development with proper safeguards for the environment.

Estimates are made of the time which water resources in the catchment will be able to meet demand. In this catchment, using the highest estimated figures for the demand increase, there is likely to be a shortfall in supply from the year 2008. In the following table we list a number of options to prevent this shortfall.

Action	Lead Body <i>(Other)</i>	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issue 20 Projected shortfall in public water supply from 2008.									
Action 20.1 Review demand management.	SWWSL <i>(NRA)</i>	1k	●	●	●	●	●	With successful demand management and leakage control in the region there should be no need to develop major new sources for the next 20 years or more. Where water resources are stressed we expect the water supply companies to set economic target levels for leakage and show us that these targets are being achieved. A national method for setting these targets, which we support, is now available to water companies.	
Action 20.2 Monitor leakage targets. Seek SWWSL data to audit leakage targets using National Leakage Initiative methodology.	SWWSL <i>(NRA)</i>	2k	●	●	●	●	●		
Action 20.3 Review potential for linking source zones.	SWWSL <i>(NRA)</i>	2k	●	●	●	●	●		

7.3 RECREATION

Many people spend their spare time enjoying our rivers and coasts. Where we can we try to improve facilities for these people but we must always safeguard the environment from the damage that they might cause. Rivers are popular places to visit if access is easy and there is car parking nearby. Large numbers of people visit the catchment; sport angling and canoeing are popular on the River Fowey and some reservoirs are used for sailing.

The canoe access agreement of the River Fowey prevents conflict between canoeists, anglers and riparian owners and the NRA will seek to promote its use. Some sites suffer damage from too many visitors. Completion of the NRA recreation survey will seek to identify where additional facilities or access could be provided and promote provision through landowners and recreational bodies and agencies.

Action	Lead Body (Other)	Cost	Financial Year					Notes
			95 96	96 97	97 98	98 99	99 00	
Issue 21 Canoeing on the River Fowey.								
Action 21.1 Promote access agreements, such as the one between the BCU and Riparian Owners which enables BCU members to canoe under certain conditions.	British Canoe Union (NRA, Owners and Fisheries Associations)	N/A	●	●	●	●	●	A new river access agreement has been signed. Information boards and access steps have been constructed on the River Fowey. NRA wardens will promote the agreement with canoeists on the river.
Issue 37 Recreation pressure and the need for alternative sites/access routes.								
Action 37.1 Complete NRA water based recreation survey.	NRA	1.5k	●	●				A number of consultees expressed concern about recreation pressure but no alternative sites to relieve pressure were proposed.

7.4 FISHERIES

We aim to maintain, improve and develop fisheries allowing for a sustainable harvest of fish. Many rivers in the catchment support salmon, sea trout and brown trout. There are 65 km of river in the catchment designated under the EC Freshwater Fish Directive. The numbers of young salmonids in the River Fowey and tributaries have increased over the last 20 years. However, some rivers, for example the upper reaches of the River Seaton, do not support fish because of metal pollution from old mines. The catchment is known for its salmon and trout fishing with late salmon runs on the River Fowey and sea trout on the Looe Rivers. There is no recognised coarse fishery on the rivers in the catchment.

In addition to its value as a natural resource, the fishery also generates income for the local economy, through being able to support a significant rod fishery.

Actions outlined in the following table will be used to set salmonid fish density targets and to improve habitat to increase spawning. There is one new action and one new Issue from the Consultation Report. Action 24.6 to seek to validate the fish counter at Restormel on the River Fowey. Issue 42: protection of Bass nursery areas.

Success should be measured by the fish counter and electric fishing survey results where we achieve or exceed targets.

Action	Lead Body <i>(Other)</i>	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issue 24 Understanding and improving the Salmonid fishery.									
Action 24.1 Develop fishery classification – a national project.	NRA	U		●	●				We want to be able to identify rivers where the fish population is lower than the physical river environment and water quality suggests it should be. We can then set targets to improve the fishery.
Action 24.2 Set target levels for fish populations.	NRA	U							This may be done if resources are available.
Action 24.3 Annual gravel cleaning where siltation is limiting spawning success in the DraynesValley.	NRA <i>(fishery interests)</i>	7.5k	●	●	●	●	●		Long term management depends upon pin-pointing the source of the problem, perhaps including a detailed silt-trapping project. We do not intend to carry out this project within the life of this plan. The action relates to the annual gravel rehabilitation work which appears cost effective.
Action 24.4 Assess extent of concretion of gravels in the Connon Stream.	NRA	2k		●	●				Investigative work will seek to identify cause and possible solutions.
Action 24.5 Minimize illegal exploitation of fish.	NRA	U	●	●	●	●	●		This is an important core activity within fishery management.
Action 24.6 Validate the fish counter at Restormel on the River Fowey.	NRA	59k							Data from the fish counter is being continuously collected. Calibration is required before full interpretation can be undertaken
Issue 25 Establishment of hemlock water dropwort.									
Action 25.1 Monitor the spread of hemlock water dropwort and remove it when it occurs on spawning gravels as part of other works, see Action 24.3.	NRA	N/A	●	●	●	●	●		This plant is common in shallow ditches and river margins and will colonise temporary islands and silted gravels. The perceived increase in hemlock water dropwort may be due to a variety of environmental factors.
Issue 35 The perceived impact of cormorants on the fishery.									
We received no comments from consultees on this issue. No action arises. No further reporting.									A review of data on local cormorant populations will be undertaken as part of the Fowey Estuary Management Plan.
Issue 36 Seal predation of Salmonids in fishing nets in the Fowey Estuary.									
We received no comments from consultees on this issue. No action arises. No further reporting.									
New Issue 42 Protection of bass nursery areas within the estuaries.									
Action 42.1 We will continue to enforce Bass nursery area legislation as part of our ongoing work. See Action 24.5.	NRA	U	●	●	●	●	●		
Action 42.2 There is little population data available for the bass nursery within the catchment and we are unable to resource any research.									
Action 42.3 Consider proposal to designate the Looe Estuary as a bass nursery area, to the boundary shown in the Consultation Report.	MAFF	U	●	●					The Consultation Report incorrectly identified the Looe Estuary as a bass nursery area

7.5 LANDSCAPE, WILDLIFE AND ARCHAEOLOGY

We aim to ensure that rivers and wetlands are not degraded through neglect, mismanagement or insensitive development. The catchment is valued for its beautiful scenery and rich variety of wildlife. Bodmin Moor is designated as an Area of Outstanding Natural Beauty and the coastline west of Looe is designated as Heritage Coast. Golitha Falls National Nature Reserve on the River Fowey has important areas of ancient woodland.

We need to maintain biodiversity in the catchment. In December 1995 the Government published Biodiversity (the UK) Action Plan, containing action plans for 116 species and 14 habitats. In 1996 English Nature will produce an agenda for fresh waters which will also contain biodiversity targets. Over the 5 year period of this plan we will investigate the presence of freshwater related species and habitats and seek to implement the action plans. In the meantime we will continue to encourage sound management of rivers and wetlands to promote wildlife conservation in balance with other river uses.

We are working on our own national method of evaluating rivers for conservation value (River Habitat Survey). We are working with the Cornwall Wildlife Trust and English Nature to gather information on habitat change in the catchment. Both activities are intended to identify areas for conservation, enhancement or restoration. Success of projects will be measured in quantifying the loss of river, wetland and water related habitats and drawing up plans for restoration of similar features or sized areas. Preventing the loss of important native conservation features due to invasive species will indicate the success of Action 28.1.

There is significant archaeological interest in the catchment, particularly on Bodmin Moor. During NRA capital and maintenance works we shall ensure that sites of historic interest are protected. We will encourage others who carry out works in the water environment to adopt similar practices.

The production of a management plan for the Fowey Estuary is a new issue (Issue 40).

Action	Lead Body (Other)	Cost	Financial Year					Notes
			95 96	96 97	97 98	98 99	99 00	
Issue 26 Lack of information on the status of riparian habitats throughout the catchment.								
Action 26.1 Carry out River Habitat Survey (RHS) to evaluate rivers for conservation and enhancement.	NRA	1k	•	•				RHS is a national method of assessing the conservation value of rivers. A classification will be developed as more information is collected.
Action 26.2 Aerial photography of the catchment and mapping of land use change.	EC 'Life' project		•					This project will study land use changes since the region was last overflowed in 1988.
Issues 27 & 32 Restoration of streamside deciduous woodland in coniferous plantations. Re-establishing mixed stand forestry.								
The Forestry Authority regulates forestry in the UK. It encourages mixed stand forestry and streamside deciduous trees as part of its daily work. No special action.								The NRA will continue to liaise over planting alongside rivers.
Issue 28 Invasive species.								
Action 28.1 Take action or give advice on local problems including the use of herbicides. We do not plan to carry out any systematic control in this catchment.	NRA (Riparian Owners)	U	•	•	•	•	•	Our leaflet - 'Guidance for the control of invasive plants near watercourses' explains how these plants can be controlled. The known impact on this catchment is low. Any eradication measures will require seeking partnerships to co-ordinate such a campaign.

Action	Lead Body <i>(Other)</i>	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issues 29 & 30 Protecting and restoring wetlands.									
Action 29.1 Identify and map wetlands	EC 'Life' project'	U		●	●	●	●		Collaborative actions will seek to establish a framework within which we will be able to set quantifiable targets. Delivery of targets may occur later in the five years or outside the life of this plan.
Action 30.1 Identify target species and wetlands for restoration in accordance with British and European initiatives.	EN/NRA/CWT/CBRU	U		●	●	●	●		
Issue 33 The threat of acidification through new coniferous woodland planting.									
No planting is proposed. No specific action arises. No further reporting.									Should a planting proposal be received we would wish to be consulted by the Forest Authority.
Issue 34 The impact of the new Bodmin to Liskeard road.									
Action 34.1 A final route has been chosen which avoids the Fowey valley. No specific action is proposed.									Routine monitoring of construction is part of our on going work to regulate development in the catchment.
Issue 38 Voluntary Marine Conservation Area off Looe.									
Action 38.1 Promote designation and development of management plan.	Project Explore	U	●	●	●	●	●		We have provided information towards the project. Our ongoing work to safeguard environmental quality, fisheries and wildlife is in sympathy with the aims of the project. Project Explore is supported by a range of local and national organisations.
New Issue 40 Production of an estuary management plan for the Fowey Estuary.									
Action 40.1 Produce Plan	Fowey Harbour Commission (EN, NRA, ECC CWT, Town Council + others)	U	●	●	●				We have provided information for the Plan. Our ongoing work to safeguard environmental quality, fisheries and wildlife is in sympathy with the aims of the project. Implementation expected from March 97.

7.6 FLOOD PREVENTION AND CONTROL

We aim to provide effective defence for people and property against flooding from rivers and the sea and to provide adequate arrangements from flood forecasting and warning. We take account of economic and environmental considerations when assessing flood defence operations. All rivers are classified as either 'main river' or 'ordinary watercourse' (sometimes referred to as 'non-main river'). We supervise all flood defence matters on all watercourses but have permissive powers to carry out work on main rivers, tidal and sea defences. Local authorities have permissive powers for flood defence on ordinary watercourses and for protecting the coast from erosion by the sea. Only sections of the River Fowey, River Pol and Landgreek Stream are 'main' river.

As part of our ongoing work to reduce the impacts of development and flood risk we give development control advice to local planning authorities.

A new issue 'Coastal defence' has been included since the consultation document to recognize the forth coming Shoreline Management Plan. This plan will take a detailed look at current and future coastal, sea and tidal defence requirements, options and various environmental and monetary costs. Success will be measured in flood protection schemes operating to their design, and no increase in downstream flooding from new developments.

Action	Lead Body (Other)	Cost	Financial Year						Notes	
			95	96	97	98	99			
			96	97	98	99	00			
Issue 18 Flooding problems.										
Action 18.1 Build scheme at Polperro.	NRA	4m	●	●						Scheme designed and construction underway. Completion due winter 96/97. Before we decide to build flood defence works we must study the problem in detail.
Action 18.2.1 Pre-feasibility study of tidal flooding problems at Fowey Town	NRA	2.5k	●							
Action 18.2.2 Carry out scheme.	NRA	162k					●	●		Money (subject to detailed appraisal) has been made available for the scheme.*
Action 18.3 Build flood alleviation scheme at Hessenford.	Caradon District Council	U	●	●						Budget allocated and a bypass channel is to be constructed. Works to start in early 1996.
Action 18.4 Tidal flooding occurs at a number of locations. We have targeted these for a study of their long term needs. They are: Lerryn Looe	NRA NRA	U U	●							
Issue 19 Threat of increased flooding downstream of Liskeard.										
Action 19.1 Plan and regulate development. Cornwall County Structure Plan :Deposit Draft, (November 1995) identifies 8,800 new houses for the Caradon District from 1991 to 2011 (about 4,250 of which are already committed). Much is seen as being located within or around Liskeard (and Saltash). The NRA have concerns about the potential impact on the Rivers Seaton and East Looe.	Caradon District Council (NRA)	N/A	●	●	●	●	●			Green-field development can increase the risk of downstream flooding. We advise planning authorities on ways of managing flood risk. We will be commenting on the County Deposit Draft and liaising with Caradon District Council over requirements to accommodate the proposed new housing.
Action 19.2 Improvements to bridge at Courtney's Mill to cope with higher flows.	Caradon District Council	U								

Action	Lead Body (Other)	Cost	Financial Year						Notes
			95	96	97	98	99		
			96	97	98	99	00		
Issue 22 Construction of inappropriate structures in the river channel.									
Action 22.1 Prepare a guidance policy on the design and placement of croys (boulders placed in the channel to create pools).	NRA	3k		•	•				Croys can improve the fishery but may also cause damage.
Issue 23 Removal of trash dams and trimming of overhanging trees.									
Action 23.1 Prepare a guidance policy for best practice.	NRA	3k		•	•				We remove obstacles and debris from rivers for flood defence and fisheries purposes.
Issue 31 The re-development of the Lower Seaton Valley Floodplain.									
Action 31.1 Control developments to minimize impact on the water environment.	Caradon District Council	U	•	•	•	•	•		Areas of the Seaton Valley floodplain have been affected by insensitive development which increases flood risk and damages the landscape.
Action 31.2 Restore floodplain and the river corridor.	Caradon District Council	U							Caradon District Council have now purchased the land at the bottom of the valley. The NRA will liaise with them over appropriate restoration. Timing of works is unknown.
New Issue 41 Coastal defence.									
Action 41.1 Prepare Shoreline Management Plan. Part 1: Scoping study. Part 1: Detailed study. Kerrier District Council	Kerrier District Council (Caradon Carrick Restormel Councils, NRA English Nature, Cornwall County Council)	U U	•	•					The plan will cover the area from Rame Head to the Lizard (though may be expanded to include the North Cornwall Coast) and includes all the coastline within the catchment of the Rivers Seaton, Looe and Fowey. It will look at tidal/sea defence flooding. Provisional start date for the scoping study is April 96.

APPENDIX 1: TOPICS AND ISSUES TABLE

TOPIC

ISSUE NUMBER AND SUBJECT

	Wildlife	Fishing	Salmonid Fishery	Water Quality	Acidification	Nutrient levels	Metals	Invertebrates	Low Flows	Drinking Water Supply	Sewerage	Building/Development	Flooding	Recreation	Coastal Issues
1. EC Freshwater Fish Directive Standard exceeded.			•	•			•								
2. HCH(Lindane) at Looe Sewage Treatment works.				•							•				•
3. Elevated lead levels in Menheniot Stream/River Seaton.			•	•			•	•							
4. EC Surface Water Abstraction Directive exceeded.				•			•			•					
5. EC Bathing Waters Directive standards exceeded.				•							•			•	•
6. Possible eutrophication of Fowey Estuary.				•		•									•
7. Annex 1A substances in the River Fowey.				•			•								•
8. High metal levels in Upper River Seaton/Tremar Stream.				•	•		•								
9. Elevated ammonia levels in the Connon Stream.	•		•	•				•							
10. Low pH in upper Fowey/St Neot/Northwood Brook.			•	•	•										
11. Organic enrichment of Bedellva Stream.				•		•		•							
12. Higher than expected levels of arsenic at one site in the Fowey Estuary.							•								
14. Untreated sewage in River Fowey at Lostwithiel.											•			•	
15. The perceived impact of Colliford Reservoir.		•	•						•	•				•	
16. Lack of knowledge of wildlife flow requirements.	•	•					•		•	•					
17. Impact of a fish farm on St Keyne Stream.	•							•	•						
18. Flooding problems.												•	•		•
19. Threat of increased flooding downstream of Liskeard.	•											•	•		
20. Projected shortfall in public water supply from 2008.										•					
21. Canoeing on the River Fowey.		•												•	
22. Construction of inappropriate structures in the river channel.	•	•	•									•	•		
23. Trash dam removal and tree trimming.	•		•										•		
24. Understanding and improving the salmonid fishery.	•	•	•					•							
25. Establishment of Hemlock Water Dropwort.	•		•							•					
26. Lack of information on riparian habitats.	•														
27. Restoration of streamside deciduous woodland.	•														
28. Invasive species.	•														
29. Protecting and restoring wetlands.	•														
30. Protecting and restoring wetlands.	•														
31. Re-development of lower Seaton Valley floodplain.	•											•	•		
32. Re-establishment of mixed stand forestry.	•														
33. Threat of acidification from new coniferous woodland planting.	•				•										
34. Impact of the new Bodmin to Liskeard road.	•											•			
35. Perceived impacts of cormorants.	•	•	•											•	
36. Seal predation of salmonids in fishing nets.	•	•	•												
37. Recreation pressure and need for alternative sites.	•													•	
38. Voluntary Marine Conservation Area off Looe.	•	•	•	•		•	•	•			•	•		•	•
39. Urban Waste Water Treatment Directive Compliance	•			•		•					•			•	•
40. Estuary Management Plan for the Fowey Estuary.	•	•	•	•		•	•	•			•	•	•	•	•
41. Coastal defence.												•			•
42. Protection of bass nursery areas in estuaries.	•	•													•

APPENDIX 2: Responses Received Through Consultation

We received 38 responses (some by telephone) to the Consultation Report.

National Organizations

Sports Council
Forestry Authority
Her Majesty's Inspectorate of Pollution
Soil Survey and Land Research Centre
Forest Enterprise
English Heritage
OFWAT
Countryside Commission
Ministry of Agriculture, Fisheries and Food
English Nature
British Canoe Union
Ramblers Association
National Trust
Country Landowners Association
Woodland Trust

Regional and Local Organizations

Fowey Port Health Authority
Cornwall Wildlife Trust
South West Water Services Limited
University of Leicester
Duchy of Cornwall
River Fowey Riparian Owners and Fisheries Association
Institute of Cornish Studies
Cornwall Environmental Services LTD

Parish Councils/District Councils

Cornwall County Council
Caradon District Council
Borough of Restormel
Fowey Town Council
Looe Town Council
Altarnun Parish Council

Nine responses were also received from members of the public.

The comments fell into three main categories, layout of the document, information accuracy, and targets and issues. Some of the comments and concerns are summarized below.

1. Metal pollution from mines.

Many people commented on this topic. Some people expressed concern that by 'derogating' or 'setting aside data' (see pages 4 and 7 for an explanation of these terms) for these metals in some rivers the NRA was effectively giving up its effort to limit the impact of pollution from abandoned mines.

Our comments:

There is a long history of mining in this area. Underground workings can be extremely complex and their extent is often unknown. Land which drains to watercourses can also be contaminated by spoil tips but again the extent of this is rarely known. For these reasons identifying the source of metal pollution in these areas is often impossible.

If we report to the DoE that EC Directive standards have been exceeded we must identify and control the sources of pollution. Derogating for metal standards (removing the need for us to report when these standards have been exceeded) acknowledges that although we understand why these metals occur at high concentrations we cannot take action to control their release to the environment.

Although we have derogated standards for metals in parts of this catchment we will continue to monitor metal concentrations and use our powers to control inputs of metals from other sources.

2. The countryside, recreation and access to rivers.

In a popular holiday area such as this many consultees commented on the need to manage countryside access and encourage people to appreciate rivers and coasts. We also received some comments on the problems that over-use can cause. The subject of access to common land on Bodmin Moor was raised by a number of consultees who felt we implied in our Consultation Report that there were moves to restrict access to the moor and that we were seeking to establish new footpaths.

Our comments:

The Bodmin Moor Commoners and Countryside Commission have pointed out that the Bodmin Commons Bill would not restrict access in any significant way. The NRA has duties to promote recreation however these are limited, particularly regarding land based recreation, and we recognize that access could not be achieved without the consent of landowners.

Excessive vegetation growth was highlighted as preventing navigation in the higher reaches of the West Looe Estuary.

Our comments:

The NRA is not responsible for navigation in this section, it is the responsibility of the Harbour Commission. Although navigation may be limited by the vegetation cover, there may be considerable wildlife benefit which offsets this.

Fishing was highlighted as being important for the local economy. Some consultees felt that we should do more to promote fishing and generate revenue.

Our comments:

The NRA recognizes the economic value of fishing and we produce and input to guides and other documents. However as we do not own any stretches of river in the catchment we feel the majority of promotion is best left up to riparian owners, fishing clubs and governing bodies.

3. Water Quality.

Some consultees felt that we did not recognize the economic importance of beaches within the catchment and the effect of poor quality and associated bad publicity on the local economy.

Our comments:

The NRA recognizes both the recreational and economic benefits of bathing beaches. As well as seeking to ensure compliance with the EC Bathing Waters Directive at identified bathing waters (see Issue 5, section 7.1.1) we will continue to monitor the quality of other popular bathing waters.

The impact of sewage from yachts without holding tanks on estuary water quality was raised.

Our comments:

The NRA would prefer boats not to discharge to the estuary (or any controlled waters) particularly where recreational use takes place. Fowey Harbour Commission will have operational shore facilities to handle yacht waste from summer 1996.

There was a call for planned improvements to sewerage systems to be brought forward.

Our comments:

Improvements to SWWSL's discharges over the next 10 to 15 years are subject to available funding approved by OFWAT, the water industry's economic regulator. A Strategic Business Plan, (Asset Management Plan 2 (AMP2)), for these schemes was developed based on guidelines agreed between the NRA, DoE, Water Services Companies and OFWAT. The plan was submitted to OFWAT early in 1994.

In order of priority, schemes included are:

- 1) schemes required to meet and maintain current EC and domestic statutory obligations*
- 2) schemes required to meet and maintain new EC and domestic statutory obligations*
- 3) schemes which already have been separately justified, required to maintain river quality relative to the 1990 NRA survey of water quality or to achieve river or marine improvements.*

OFWAT declared the associated customer charging base in July 1994. At the end of July 1995 the Monopolies and Mergers Commission published their review of SWWSL's AMP2 programme. The NRA will be seeking confirmation from SWWSL on the timing and details of the schemes.

Some consultees were concerned about sewage inputs to the Looe Estuary affecting public health, the bathing beach and wildlife in the estuary.

Our comments:

Actions 5.5, 5.6 and 5.7 should address these concerns. Unfortunately the loss of certain species (such as cockles) noted by some consultees may be a result of improved water quality.

4. Shellfish in the Estuary.

It was suggested that there should be a target of category B for the commercial shellfishery (under the EC Shellfish Hygiene Directive 91/492/EEC) with a long term objective of category A.

Our comments:

The Ministry of Agriculture, Fisheries and Food (MAFF) and the Department of Health (DoH) share responsibility for this Directive in England and Wales. We have only a minor role in implementing this Directive. Although we provide information on the location of discharges that may affect harvesting areas, we cannot require that improvements are made to polluting discharges under this Directive. However, we can use our powers to ensure that water quality does not deteriorate in harvesting areas. It is anticipated that sewerage improvements at Fowey, and later at Bodinnick and Golant, should significantly improve water quality in the estuary. However, we cannot say which category shellfishery will be achieved.

5. Fisheries.

Consultee comments ranged from compliments about the quality of our work, saying that we do not publicise our activities enough, to those that thought we do not do enough fisheries work. The impact of lower flows, particularly due to reservoirs was raised.

Our comments:

The level of fisheries work we can undertake is set by our budget. We prioritise our work once this is known. Grant in Aid money to fund NRA fisheries work is currently reducing.

The NRA is aware of the potential impacts of reservoirs on fisheries and seeks to prevent, limit or compensate for them where we can. See Actions 15.1, 16.1, 24.1 and 24.2.

6. Landscape, Wildlife and Archaeology.

A number of organisations and individuals commented on these topics. Consultees encouraged us to do all that we could to support planning authorities in their work to plan and regulate development so that rivers and wetlands would be protected. Some consultees felt that the NRA should do more and encouraged us to set targets for species or habitat conservation in our Catchment Management Plans.

Our comments:

There is a national initiative to set species and habitat conservation targets called the UK Biodiversity Action Plan. The NRA is involved with many other agencies in developing targets for the UK Biodiversity Action Plan. When these

targets are set and agreed we will promote them in Catchment Management Plans. Actions 15.1, 24.1, 24.2 and 30.1 seek to set more specific, catchment based targets.

It was felt that we did not highlight the importance of saltmarsh and mudflats.

Our comments:

A more detailed review of estuary intertidal areas may be appropriate within the work of the Voluntary Marine Conservation area on the Looe, and forthcoming management plan for the Fowey Estuary which is being promoted by the Fowey Harbour Commission and English Nature, see issue 40.

A number of landscape designations were incorrectly detailed in the Consultation Report; South East and East side of the Cornwall AONB, Caradon Hill and Lynher SAGLVs. Bodmin Moor and the Coastal sections are all part of the Cornwall AONB, not separate AONBs, and management strategies for the two Heritage coast services are only in preparation. English Nature have designated Bodmin Moor as a 'Natural Area' and highlighted a range of objectives required to retain and enhance its character.

Our comments:

Aquatic objectives are included and addressed partially in our normal daily work and partly in issues 16, 29 and 30 in this Plan.

One consultee felt that Bracken (*Pteridium aquilinum*) was an invasive species in the upper Fowey and its tributaries.

Our comments:

As indicated in issue 28 action against invasive species requires a co-ordinated approach and depends on demonstrated impact. Bracken is not a wetland species so we are unlikely to be involved in any action.

7. Flood prevention and control.

A number of consultees raised concerns about areas of flooding where the NRA do nothing.

Our comments:

The sites highlighted are non-main river and come under the responsibility of District Councils. A review of the extent of main river in England and Wales is periodically considered by MAFF and it is possible some alterations to current lengths may result. No definite programme has been drawn up.

The NRA's view on flood defence structures on the River Fowey at Lostwithiel was questioned; some minor erosion which is occurring on the flood banks at St Georges playing field was highlighted, and the effect of flood banks on Coulson Park.

Our comments:

The NRA will monitor the erosion of flood banks at Lostwithiel and liaise with landowners regarding any necessary action.

Some consultees were concerned about the impact of removing trash dams for both flood defence and fisheries work.

Our comments:

Action 23.1 seeks to address these concerns.

Consultees requested that there should be public consultation on any flood alleviation scheme at Fowey.

Our comments:

Public consultation will be part of the process within Action 18.2, though no definite date can be given at present.

APPENDIX 3: RIVER ECOSYSTEM USE CLASSES

Use Class	Class Description
1	Water of very good quality suitable for all fish species.
2	Water of good quality suitable for all fish species.
3	Water of fair quality suitable for high class coarse fish populations.
4	Water of fair quality suitable for coarse fish populations.
5	Water of poor quality which is likely to limit coarse fish populations.

ABBREVIATIONS

AONB	Area of Outstanding Natural Beauty
AMP2	Asset Management Plan 2
CBRU	Cornish Biological Records Unit
CCC	Cornwall County Council
CWT	Cornwall Wildlife Trust
DoE	Department of the Environment
EC	European Commission
EN	English Nature
GQA	General Quality Assessment
LPA	Local Planning Authority
MAFF	Ministry of Agriculture, Fisheries and Food
N/A	Not Applicable
NRA	National Rivers Authority
NWC	National Water Council
OFWAT	Office of Water Services
R&D	Research and Development
RE	River Ecosystem, RE1, RE2 etc.
RHS	River Habitat Survey
RQO	River Quality Objective
SAGLV	Special Area of Great Landscape Value
SSSI	Site of Special Scientific Interest
STW	Sewage Treatment Works
SWWSL	South West Water Services Limited
U	Unknown (cost)
UWWTD	Urban Waste Water Treatment Directive
WQO	Water Quality Objective

UNITS

m	Metre
km	Kilometre
Ml	Megalitres = 1 million litres
m ³	Cubic metres

REFERENCES

1. Seaton, Looe and Fowey Catchment Management Plan Consultation Report, NRA South Western Region, December 1994, SW-12/94-1K-E-AMFA.
2. Tomorrow's Water, Water Resources Development Strategy, NRA South Western Region, April 1995, SW-4/95-1K-B-ANOQ.